The Junior Report ®
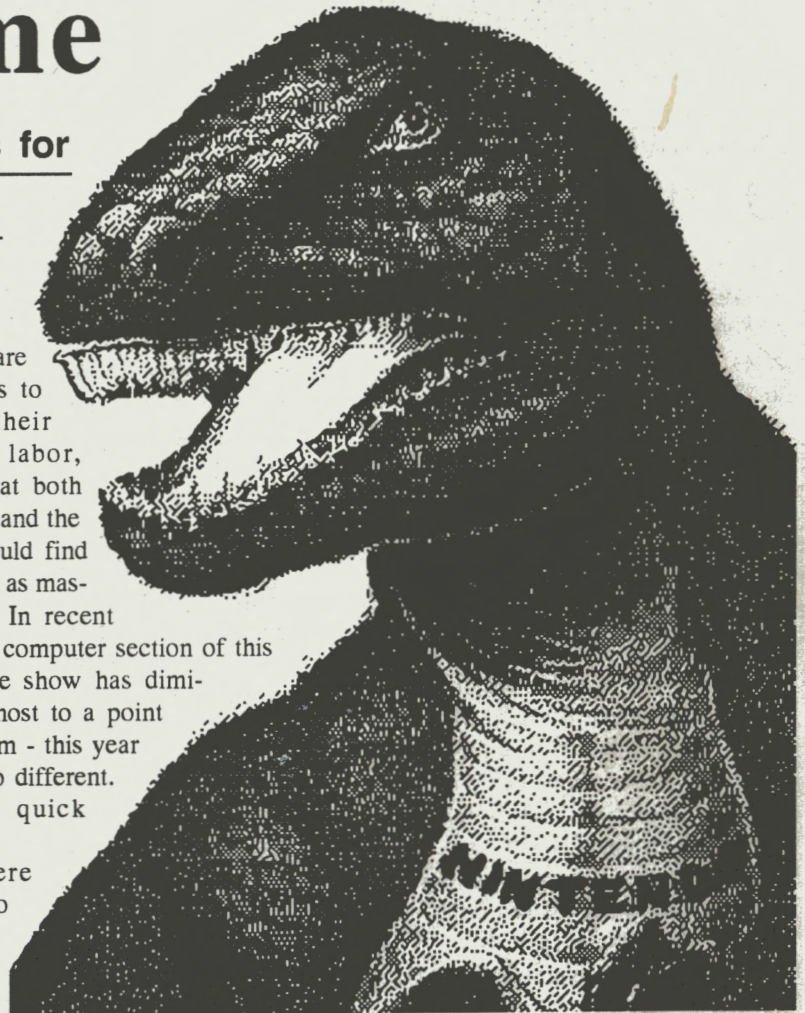
The Revenge of the Video Game

18-21
42-43

CES provided no new surprises for the computerist, except the re-emergence of the video game

Summertime in the City. To the computer lover or the electronics buff, the beginning of summer is always marked by an event called The Consumer Electronics Show (CES), at least in Chicago, that is. In previous years, the show was a great canvas for aspiring computer hardware

and software companies to paint . their fruits of labor, hoping that both the media and the crowd would find their work as masterpieces. In recent years, the computer section of this giant trade show has diminished almost to a point of tokenism - this year seemed no different. First a quick overview.

There seemed to be a general lack of excitement this year, not just in the computer market, but in the whole electronics industry in general. There were very few "breakthrough" products in any field, which allowed the sideshows to actually outshine the products. In fact, the highlight of the show to this reporter was the best living human robot act I have ever seen. This fella outdrew any electronic product. Here here for the human race. There wasn't

even the marching anti-porn feminists handing out their warnings and objections to the adult video section. I like controversey. The one constant of the show, however, was the large extraction forceps that grasped large denomination-type bills from one's wallet at the concession stands. (Next year all Junior Report people will bring a sack lunch, and have a name tag pinned to our lapels in case anyone gets lost.) I
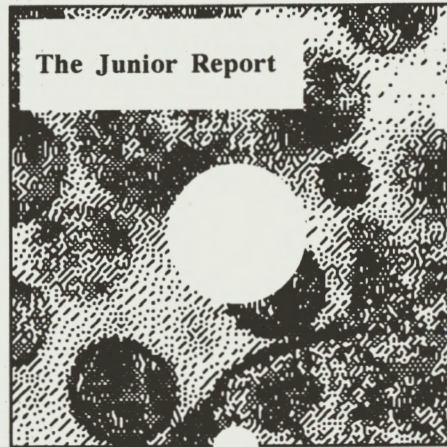
Contents

By Harrison Day

Virus Strikes Junior Report Office - Resulting in Double Issue

Well, it had to happen sooner or later. We've talked over and over about viruses, and the precautions one must take to avoid them. Every computer magazine, newspaper column has devoted much space to the problem of viruses. With all these precautions in mind, a virus did strike the office, delaying the publication of the June issue. It was an insidious virus that first struck one reporter, then another, then another, and finally to the head honcho, the big cheese himself - me. I mean I was in bed for days, recuperating from a very tiring, uncomfortable condition. There is always a silver lining behind every virus however, and that is that we've caught up in scheduling by producing a double issue so that you should be getting your issues at the beginning of the month rather than the middle. I can't wait till an actual computer virus strikes us.

The most important announcement for this month, however, is that Solid Rock Electronics in Garland, Texas, is no longer in operation, so don't send them any more money. We've tried to reach them by phone, but to no avail. We have learned that it has sold most of its PCjr stock to another PCjr vendor. Stay tuned for more details next month.

Speaking of "Rocks", (sorry), The Church on Rock, "a Family Church" in Pineville, LA has need for several IBM PCjr's and other PC-compatible computers, monitors, printers, etc., and will give anyone so kind enough to donate any equipment a tax deductible receipt for the market value of the donated equipment. For some of you who wish to upgrade, this might be the better way to go, depending on your individual tax status. For more information, please contact Reverend Melvin L. Tisdale at 404 E. Yeager, Pineville, LA 71360 (318) 640-3105.

A couple of months ago our letters department stated that the only hard drive that could be used with a Racore system with DMA was Racore's own hard drive (that's what we were told by the company). Well, we were wrong. According to Jeanette at Paul Rau Consulting, their company has produced a hard drive system that works admirably with Racore systems. It utilizes a Seagate ST 225 20 megabyte hard drive that uses the internal modem slot inside your PCjr CPU. The current cost for the unit is $579. Paul Rau Consulting can be contacted at 209-745-9284.

Joseph Bowker who writes a nice letter in this issue fails to mention that he produces a great newsletter with his PCjr called The Salty Bee Newsletter that serves the 67 Tactical Reconnaissance Wing (Germany) of The United States Air Force.

If you noticed the ad on the cover of our May issue, you might notice that we weren't far from the actual ad that has appeared in the recent issues of *PC Magazine*. See below. Deja vu?

Accolade, one of the prime manufacturers of game software for the PC, has announced that it is dropping the

prices on several of their original programs (e.g. Ace of Aces, Dam Busters, HardBall, etc.) We always like to hear about price LOWERING.

IBM has started a trade-in program in which to upgrade to a new PS/2 computer system. It's hilarious. They will give a basic PC a discount

.UE, you'll love SLEUTH.
hildren 12 years and older. Includes scramble, states, nations,

adventure games SOUTH AMERICAN TREK (You are a special
ve been sent to gather information about each country in South
:nt to the other where you will be picked up by a friendly subma-
wly drifting through the fog until you find a deserted island. There
lot return to civilization. Will you be able to get off the island?)
Domain word processor. Now has Spelling checker. **Requires**

.SIC users working with animated graphics on the Junior. You
:en" or "sprite" form, and recall it later to make changes.
lte everything from simple reports to custom labels, prints enve-
e tags, inventory slips, and much more. Will also retrieve and
I+. **Requires 256K.**

preadsheets that cannot fit into 80 or 132 columns across.
ll games in this genre, this will place you in a world where the

nous text-adventure games will find this as exciting as Zork or

ge. May be important to the businessman or traveler.
hareware program of all time. **2 Disks - $10.00.**
Provides hours of challenge. Requires a joystick.
rld, it employs extraordinary graphics, and has extensive docu-

bbably the best collection of educational games in the world of
ter-matching game, numbers-matching game, among others. Col-

our Jr world. Create rabbits, jets, penguins, samurai helmets,etc.
ch as geography, personalities, incidents, and teachings.
CONFIGJR.SYS. The only must have utility for ALL PCjr own-
to run with expanded memory and additional disk drives. The list

on, check book manager, etc. **Req. 256K, 2 dr, & Lotus 1-**

f statistical and demographic information about the nations.
asy to learn and play. Great fun for the whole family.
otient. It makes for a very interesting time as you test yourself
the game PAC-MAN for both monochrome and color systems.
ne help capability for those DOS commands - just type HELP
lanations plus special batch files demystify the learning and usage

gement system for the PCjr owner. It contains an appointment
anager.
or people preparing meals for someone on a carefully con-
paring meals that have to meet strict dietary requirements.
plies age-graded exercises and tests for a variable student body,
For grades 1-6. **BASIC required.**
owner and loyalist Andy Kunz. This software program performs
ool such as generating the weekly pick sheets (+ and - odds),
reports, among others. This has good documentation.
l-down menus. Highly recommended for the novice Jr owner.
: world, just spreadsheet looks and acts just like its famous com-
Requires at least 320K.
gram with thousands of movies on file. **Requires 256K.**
atabase has received great praise from everyone. Its ease of use,
it quite popular already. **Requires 192K, 2 drives or one**

Don't f

PC FILE III (#1): the classic, updated, full-featured database progr
sidered by many to be better than most commercial programs. Versi

PC WRITE (#2): this best-selling shareware program is equal to o
the latest version (2.55) and will run on the single drive, 128K PCj

PC TALK (#3): PCjr adapted version of one of the most popular

HOME MANAGEMENT (#4): a reliable, general purpose financ

KIDS (#7): a special children's disk composed of a kid's word pro
game for the preschooler.

PC-KEY-DRAW (#9): the most powerful graphics program avai

GAMES (#10): one of the best selling game disks has Combat, Du

PC TUTORIAL (#12): a course in computer and the PC-DOS en

EDUCATIONAL GAMES (#18): features math exercises, thinkin

LABEL MASTER (#19): the original label making program has

GAMES (#24): Poker games, Battleship, Land Mines, Fire, Grimc

IMAGEPRINT (#25): A must-have printer utility that makes your
ing machine. Can proportionally space text. Requires an Epson or

QMODEMjr (#26): a special PCjr version of the popular commu

PC-LEDGER & PC ACCOUNTS RECEIVABLE (#27): A very
256K.

EZ FORMS (#28): Create and print custom forms to fit every ne

PC-STYLE (#29): Written by Jim Button, helps improve your w
wakes up your documents or prose, making your writing more reada

PC-CALC (#31): A "visible" spreadsheet program that challenges
culating depreciation, computing loan interests, or just plain balanci
can handle.

DOSAMATIC (#35): No, it doesn't slice and dice onions, but it i
ities, debugs, sorts, and much more.

PC-DESKMATES (#36): A memory resident that includes an ala
commands.

GAMES (#38): Frogger, Wa-Tor, R-Logic, and Zaxxon, among c

GAMES (#39): Includes Yahtzee, Chess, Slot Machine, and Wiza

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

GAMES (#41): Features Striker, an arcade-style helicopter attack g
has Catacombs of Nemon, and JumpJoe.2 (A donkey Kong looka

GENEALOGY (#42): Contains both informal format and LDS form

TRIVIAL TOWERS (#45): Trivial Pursuit in a computer form, ha
questions and answers. **TWO DISK SET - $10.00. Also rec**

ULTRA UTILITIES (#47): features U-File, U-format, and U-Zap
complete access to the power of your PCjr DOS operating system a

CASHTRAC 5.15 (#48): an excellent program intended for use b
expense account keepers. **Requires 256K.**

PCjr UTILITIES (#49): special utilities for Junior includes a pri
special PCjr keyboard templates for WordPerfect 4.1, Reflex, PC-W

GOOD HEALTH (#50): features PC-Recipe, a fun program that r
date, add, change, and re-calculate recipes. Also has BioRhythm a

TUNE TRIVIA (#52): Quick, for one thousand dollars, NAME TH

PROCOMM 2.42 (#55): This has become the new standard in P
to-use, this version is the one that works well on the Junior. **R**

GAMES (#56): Includes three casino games led by Las Vegas Sty
games, and an assortment of other arcade games that should keep e

Jr MUSIC MACHINE (#57): One of two music programs on thi
ously, and utilizes Junior's special sound capabilities.

GOLF HANDICAPPER (#58): Allows you to compute, store, up
players, using the handicap formula established by the USGA.

PC-FONT (#59): A utility program which enables your Epson or
block graphic, engineering, scientific, foreign language, and other

SLEUTH (#61): A murder has just been committed, and your job

this letter on VX2.2, and can thus assure you it works.

I use a Tecmar Jr Captain system upgraded to 640K. My Panasonic KX-1090 has a tailored driver (easy to do with VX2.2) as it is somewhat different than an Epson. I use Tecmar software (CONPCJR) to set up the expanded memory, and set up a 322K RamDisk with MEMDISK - APL256. After booting with a floppy, I load the whole thing to RAMDISK (copying all is faster than copying individual files, I found). One of the tricks is to load up all the files that 2.2 needs - and there are a lot: VX.KEY, VX.SYS, VX.MES, KEYBD.INT, VXPR252.TBL (or other printer driver), VX.TBL, VX.PIF and finally VX.EXE (COMMAND.COM is necessary for navigating when you exit). Because I copy all, I get an AUTOEXEC.BAT and MEMDISK.EXE as well.

Voila! It works fine! Well, almost. There is one significant problem. Don't try to use the ALT-F1 shortcut for printing or you'll get hung - up and need a cold boot (I've tried every DOS patch around to fix that). No big deal however, just use the standard print menu and everything's OK.

Frederick E. Ford
Victor, NY

Thanks Frederick for the useful information. There's nothing like flying through a document on the PCjr using one's favorite word processor. Now we have another popular word processor to try out, and I'm sure many junior owners will get "stuck" on Volkswriter, one of the original popular word processors.

POWER PROBLEMS

I've recently been experiencing a problem with my Junior. During operation the power appears to decrease as the sound of the fan slows. I've used a different power transformer from a friend's system but the same problem occurs. During the slowdown no other problems have occurred. Is there anything I can check? Can the fan be lubricated? The problem only lasts a few seconds but somedays it seems to happen quite frequently. I've checked my surge suppresser and it checks out OK. Any recommendation?

John Wallace
APO, NY

It seems that your problem has less to do with the power transformer (brick) than the power supply that is within your PCjr CPU. The speed of the fan is directly controlled by the power supply, so if the supply starts to fade on you, the fan will decrease in sound and speed. If you have a technical friend who can check it out for free, do so.

Whether you should take in your PCjr to a repair shop is another question. If you are not experiencing lock-ups, or if you are not losing any data, or if the programs seem to be running fine despite the power slowdown, you might consider just to leave things alone. Replacing a PCjr power supply runs about $200. right now and I'm sure you could use that money better elsewhere. If it "ain't" positively broken, don't fix it.

FALCON DOWNED

How can I get "FALCON" to run on my jr? I have 640K with 2 drives. Thanks for the great newsletter!

Joe Hugh
Santa Maria, CA

We're sorry to report that Falcon does not appear to run on the Junior. We've tried every PCjr memory configuration program (e.g. jrconfig.sys, conpcjr, etc.) on a variety of PCjr's, but to no avail. Spectrum Holobyte was not a help in figuring out what to do to get it running on the junior, but perhaps someone out there has been downing some MIG's ala Top Gun and a Falcon and can tell us how he did it. We're still working on it, too, so don't give up hope yet.

FIRST CLASS & APO

Two months or so ago I wrote a short note on another subject and asked in passing, somewhat facetiously, whether you had a problem getting issues out on the publication date. Last month I noted your change in policy for overseas subscribers, i.e., first class mail. Thought you might be interested in the results, which are rather striking.

Issue	Received
15 Jan	18 March
15 Feb	11 April
15 Mar	18 May
15 Apr	21 April
15 May	22 May

As you can see, I received the April issue before the March issue

and was wondering what was up...until I read the letters to the editor. I almost received the May issue before the March copy. Many thanks from those of us overseas for your thoughtfulness...it does make a difference.

Joe Schang
APO New York

You're very welcome. We only wish that we could send everything first class to all of our readers, but we cannot if we expect to survive. Unfortunately, the recent postal rate increases had a tremendous effect on third class postage and we are still feeling the heat from that great event. But we are happy that all the overseas service people are finally getting their issues in a more timely manner, at least in this century.

Q & A WRITE DEAL

There has been a lot written about running IBM's Writing Assistant from a RAM drive, but what about when you don't have 640K? Well, if you have at least 256K, one way to get almost RAM drive speed is to use the Write.EXE program from the sampler disk. This file will load the whole program into memory, the only time jr will go to disk is to get/save a file or use the dictionary.

Personally, using CopyIIjr, I copied the sampler disk to a working copy and deleted all the files EXCEPT Write.exe. Then I copied the files Wordprf.wdl and Wordprf.adl to the working disk so I would have everything needed on one disk.

By the way, have you seen the great offer from Symantec to get Q&A Write. You clip a coupon

from almost any computer magazine, enclose $29.95 and the title page from PFS Write or Professional Write. Since I, like many Jr owners, got Writing Assistant with Jr, I called Symantec to see if they would accept Writing Assistant in place of PFS Write. They said sure, they only want to get 5000 copies into the field. I got the program the other day and it looks really good. Many commands are just like Writ-

Whether you're six or sixty, male or female, white or black, we all will make the same mistakes, and we all will revel in learning something new about our Juniors and how they can change our lives.

ing Assistant and it accepts the Writing Assistant file format. The only downside is that it needs 384K and they recommend 512K. They also said it needs 2 drives or hard disk but with disk swapping it looks like it will run with one drive. For $30 it's worth the gamble for a $200 program.

Robert Dreher
Bridgewater, NJ

Q&A Write is a very good program and will run off of a ramdisk on a junior, bypassing the two drive requirement. At the time of this article, you could still get the upgrade for that great price. We would recommend anyone wishing to do so to call Symantec (408) 253-9600, or write to them at 10201 Torre Ave., Cupertino, CA .first to verify that the offer is still good. We'll a good $200.word processor for $30. anytime, especially if it's so similar to the Writing Assistant. Thanks for the great information.

PATCHES

When I bought my PCjr I didn't know a thing about computers even though I thought I did. I had read about them, even had seen them in action. I didn't take any classes like friends suggested I should. Why kids in 1st grade were using them so why did I have to attend any classes? I was wrong. Thank goodness for the Junior Report and the PCjr Group that meets before the regular TC/PC meetings (TWIN CITIES PERSONAL COMPUTER). My 17 year old grandson has been a big help to me too. Now that I am 66 yrs old I need all the help I can get!

I have a NEC Spinwriter printer so I cannot do graphics but I thought you might like this picture that my computer printed for me. I know it wouldn't win any prizes but you might consider it unusual. One other time when I must have hit the wrong key I had a picture of a forest of green trees, with bright green grass all around, around that were red and blue lights

but I never thought to take a picture of it.

Oh! By the way, could you explain a patch on a DOS Disk in the Jr Report? I know how to put a patch on most anything else but I just don't know how they patch a disk. Well keep up the good work, I'll be looking forward to more Junior Reports.

Mrs Kirk Johnson
Mpls, MN

At 66, you're still a baby, at least in the computer field. (Isn't it nice?) That is the great thing about owning a computer - it's a non-discriminating activity. Whether you're six or sixty, male or female, white or black, we all make the same mistakes, and we all revel in learning something new about our Juniors and and how they can change our lives.

Patches are simply alterations to the program code in a software program that either solves a problem such as system crashes or in our case usually, a PCjr incompatibility. For example, in previous issues we have published a patch to allow Microsoft's QuickBasic to run on the PCjr. Most of the time, the DEBUG function of DOS is used to change the code in the programs. We have discussed DEBUG before, and will have a more detailed follow-up in probably the next issue.

PCjr HARDWARE AND SOFTWARE COMPATIBILITIES

Just a quick note on a few software and hardware compatabilities for the Junior. My system is 640K w/Tecmar jrCaptain and jrCadet Boards, NEC V-20, PC Enterprises

second drive, Keytronic keyboard and a Avatex 1200 external modem.

Lucid 3-D runs on the Junior, however I didn't think that it would load in the memory resident mode. It would hang up the keyboard and require a reboot. I recently read the discription of INT9JR.COM and tried it with Lucid. INT9JR fixes the problem completely. Lucid is a natural for the Junior as it is colorful and uses nested spreadsheets, each which can be small and compact.

Genius Mouse GM-6 does not work on my machine. The software loads fine but can not recognize the signal from the mouse. It appears that the mouse needs power from the serial port which Junior does not provide. The Kraft Micro Mouse, on the other hand works just fine. It has a connection on the serial plug for and external power supply.

DrHalo III will run on my machine if properly configured. The driver loaded by the PC/XT option in the setup program will not work. I selected the PS/2 option and it worked! I also modified the HALO.CNF file and used the generic device driver HA-LOIBMG.DEV which works and is the one I am using now. An interesting question is "just how close to the PS/2 is the junior's video modes?" Using either of these methods, I was able only to get DrHalo III to use the standard two pallets of four colors. Does anyone know how to access the 16 color mode? I know that junior can do 320x200 16 color graphics, it does it in the self test.

Get Organized 2.0 will run on

You must now create i
up on your menu. For
cute choice #1: Game
you used letters rather
match those choices;

Each of the batch files
gram AND THEN ret

A>copy con: 1.BA
        CHES
        TYPE
        ^Z

or, A>copy con: 2.BA
        GO

        TYP
        ^Z

or, A>copy con: 3.BA
        BAS
        LOA

        TYP
        ^Z

Here is what is happe
AUTOEXEC.BAT fi
then type in the numb
are in effect, executin
The 1.BAT batch file
exit the CHESS prog
return to the main me

DOS Menus are limit
program choices. Ha

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1987, Volume 2, Issu

thought it could. Lucid 3-D, Dr. Halo, Get Organized, and Wordstar 4.0 are all powerful programs and, sure enough, run on the jr. So what does that say about the productivity of our machines? Thanks again for writing and hope to hear about more discoveries soon.

JRCONFIG.SYS

A letter in the April issue refers to the JRCONFIG.SYS (disk #82) in your shareware list, in relation to speeding up the jrHotShot memory expansion. I already have JRCON-FIG Version 2.10. Is the version that you sell later than this?

I think, by the way, that you should give version numbers in the program listings. Calling them "the latest" or "updated" doesn't tell you much unless one knows the date the description was written (especially when one notes that you describe PC-Write v.2.55 as "the latest version" and the same program v.2.7 as the "newest version"!).

Anyway, I'd appreciate the info on disk #82. (Also, does this disk have any other programs besides JRCON-FIG?) (Also, is there any relation between this program and the CNFJR program on the PCjr Utilities disk you sell which has no document files associated with it on the disk).

Sincerly,
John Stevenson
Chicago, IL

You have a very good point about being more specific in our version information, and we'll try to correct that problem. The latest bersion of JRCONFIG.SYS that is offered in the shareware library is version 2.13 (see Eye on Shareware on page 51). There are some great upgrades on it,

and you should get a copy. JRCONFIG.SYS remains to be the most valuable utility for the PCjr owner. CNFJR is not the same program as those on the JRCON-FIG.SYS disk.

BANKSTREET WRITER PLUS WORD PROCESSOR

Your reprint of the PCjr Magazine on Bank Street Writer in the April issue was very interesting. I have been using Bank Street Writer at home for several years. It does everything I need to get me through a Masters Degree program and it is simple enough for my wife to learn without reading the documentation.

About a year ago I upgraded to Bank Street Writer Plus. Broderbund also made this program compatible with a 128K single disk drive PCjr. Since the entire program loads into RAM, you can put your data disk in the A: drive and never have to swap disks except to run the spell checker. The major improvements to Bank Street Writer Plus are it has a spell checker and thesaurus, it is not copy protected, it has a pop up calculator, it did away with the password scheme, plus it has numerous smaller improvements. Bank Street Writer Plus is a very good low cost word processor. I recommend it highly. The only shortfall in my opinion is the lack of right justification.

The reason I am writing is to let other users of this program aware of a discovery I made. The book says if you have 256K, the spell checker will also load into RAM. I have a 256K (Microsoft Booster), 2 disk drive (Solid Rock Electron-

ics) PCjr, but the spell checker would not load into RAM. I discovered that the Microsoft MEM-ORY.SYS in the CONFIG.SYS creates a RAM disk of 11K even when specifying 0K RAM drive. This, together with the default of 16K screen memory plus DOS adds up to 56K leaving 200K. The Bank Street Writer Program uses 70K and reserves 30K of RAM for the text file I am writing. This leaves 100K of RAM remaining, but the spell checker dictionary needs 105K of RAM. I was 5K short. To solve this problem, since this is not a graphics program, I set MEMORY.SYS to reserve 4K for screen memory opening up an additional 12K of RAM - 7K more than I need. My MEMORY.SYS in my CON-FIG.SYS file looks like this:

DEVICE=MEMORY.SYS S:0 / v:4 /w

S:=RAM disk size, V:=number of K of RAM reserved for screen memory, and W sets the display to 80 column. This works for my computer with the Microsoft Booster memory expansion. An equivalent setup in the CON-FIG.SYS file on other memory upgrades should work as well. The payoff is that the spell checker works about 5 times faster loaded in RAM than it does from floppy disk. It also runs about 30% faster than loaded in a RAM drive. On another subject, I could use some help. I have an IBM PCjr Paint cartridge that I use occasionally. I bought an Okimate 20 printer so I could print my pictures in color, but, alas none of the printer drivers

in the PCjr Paint cartridge are compatible with the Okimate 20 printer. If anyone has a printer driver or any other solution that works, please let me know. I would like to put in a plug for my Solid Rock Electronics second disk drive. It has performed flawlessly for me for 2 years and I have not had any software compatibility problems due to this disk drive. If I had it to do over, I'd buy another one Thanks for a great magazine,

Ralph Delperdang
Shalimar, FL

We're glad you're having such a good time with Bank Street Writer Plus, and especially since you're having it on a PCjr, our favorite computer. We're also glad that you are using ramdisks. We have always felt that the use of ramdisks was the "equalizer" in making the PCjr the most PC-compatible, and the most productive machine it can be..

STARS, STRIPES, AND THE PCJR

I'm writing this letter for two reasons. One, to renew my subscription to "The Junior Report". Please find a check for $19.97, enclosed. This is a renewal but I don't care to cut up my April edition, for the reorder form. Second to tell you a little story.

I read a "READER FEEDBACK" column in a competitive [jrNEWSLETTER] publication dated Febuary 1988. The title was "PCjr Helps National Guard" and, in part, the Editor's note said, "This is the first instance we've heard of where a PCjr served honorably in the armed forces." Well mine, with a jrHOTSHOT 512K expansion, single disk drive, and original enhanced keyboard helped prove the U.S. armed forces we're ready, and able to help defend Europe, and made

U.S.A.F. Colonels computer sponsors.

To begin with, I'm a Senior Master Sergeant in the U.S. Air Force. I'm on the Deputy Commander for Maintenance's staff. (One of the Colonels G-O-F-E-R's). Last year we deployed to Germany with 500+ people and 18 RF4C Reconnaissance Aircraft as part of an exercise to test our ability to reinforce Europe and NATO. My job on the staff is to assist fluent German. I got to go along as a German community liaison NCO too.

Since American culture often clashes with European sensitivities, and it's important that we mesh well with our host countries, I began to write and distribute a 4 page newsletter. I used my IBM PCjr, STAR-GEMINI SG-10, NEWSROOM, and BANK-STREET WRITER PLUS for this project. [Enclosed is the first edition]. It was a smash success, so I was asked to continue it while deployed...which I did. Since my office didn't have a computer, I had to pack up my junior to support this request. In addition to the newsletter, I also created a DATA BASE using dBASE III, in which I listed all the pertinent information on deploying personnal. This included which flight they were on, which hotel they would be housed in (we had 16 hotels in 4 different towns), and of course duty assignments and personnel data...even if they smoked or not.

Because of limited space at our deployed area, I had set up my computer in the Colonels office, and worked at it daily to maintain the comings and goings of 500+ people. Various people would come to me for info on where is, or who is, etc, and I called up the browse command, found them, and was able to (almost) instantly to answer their needs. It also made manifesting people for reployment a

cinch... something unheard of in the past where we were at the mercy of the Base Main Frame, and people who were generally uninvolved in our problems.

But the real kicker was on the first day after our planes arrived. The commander called a special meeting of the senior members of the deployment. The exercise was to begin at 0 dark thirty on Monday - his was after 1700 (5pm) on Friday, and we needed a RECALL Roster of our personnal. Everyone said that it was impossible...couldn't be done till Monday at the earliest when everyone came to work and reported in, etc. I spoke up that I could have a list, either alphabetical, by job description, by rank and Hotel, or any way he wanted it in 30 minutes. The Colonel had thought I was out back sampling German Beer, but silently stood by as I almost effortlessly produced the required list (s).

I had frequently begged the Colonel to let me buy a PC for the office, but he thought it was an expensive toy. We have multimillion dollar main frames on the base, and he felt they only cause trouble. (Computers are often only noticed when they are down.) When we got to the States the Colonel had authorized the purchase of fifteen PC's for the staff. I now enjoy the advantage of a PC with a 20 Meg hard drive... top o' the line. I'm also on call constantly to show various Colonels (and others) on the base how to use their own PC's... and my Colonel has one in his office and at home.

I'm sure more Junior's served honorably, and we all like a little recognition, so I thought it my D-U-T-Y to tell this war story. By the way, after the purchase of my junior,

the smartest thing I've done is to join the local IBM PCjr SIG (special interest group). I put it off a long time, for many reasons, none of them very original, but if people out there are still not members of a local junior club, or SIG of an IBM PC Club, then J-O-I-N!!! It can open up many opportunities.

Well, keep the Report coming. We all need the help.

Joseph Bowker
Austin, TX

T-H-A-N-K-S for the great letter.

It's nice to know that PCjr's are serving our country well. Your story, though unique in setting, is typical in showing how a PCjr, or any good computer, has changed one's life. The potential of the PCjr as a productive tool is almost limitless, and we all will gain a lot in our lives the more we use our machines. We bet a lot more stories are out there that also illustrate how a PCjr has changed one's life. We sure would like to hear some more of them.

We couldn't agree more about your rallying cry to join a local PCjr users group or a SIG of a local PC group. The wealth of knowledge and a common goal of extracting the most out of each computer is something all junior owners will find with the groups. Check the local library or newspaper for the nearest group near you. We'll have an updated list of PCjr Users Groups soon. So the only thing left to say is K-E-E-P O-N C-O-M-P-U-T-I-N-G

PFS FIRST CHOICE

As a new subscriber to The Junior Report, I was pleased to read your article (Editor's Notes, May 1988) concering the top ten business programs. You started the jr will run these programs with some modification, a con-

tradiction the consumer support services indicated when I requested help to get one their software products to work for me.

Specifically, PFS: First Choice, version 1.0, displays the message "Program too large for memory" while being loaded into memory. I own the enhanced jr (128K with one disk drive) and attached Microsoft Booster with Mouse (128K), DOS 2.10.

Will you please detail what specific technical modifications will be required to make this program to run on my jr. Thank you very much for your time and attention in this matter, and I am looking forward to future issues of "The Junior Report".

Thomas D. Lantto
Buffalo, MN

Nothing earth-shattering to say about this one, Thomas, but we feel

that anytime you get a "program too large for memory" message on a Junior means you have to get more memory. When a program requires 256K for a regular PC, more often than not, the PCjr will require more memory because of the way its video memory is set up. Professional Write and File give the same message on a Junior, but with 384K, these two programs seem to work fine.

Other helpful ways to increase compatibility is to use another memory expansion software program such as JRCONFIG.SYS or CONPCJR (Tecmar). Junior needs these startup programs upon booting to recognize the extra memory. One particular program will run a software application, while another may not. Sometimes you have to experiment.

DOS Revealed: Part III

In this final part of DOS Revealed, John Wilson takes us through command processing and printer controls

DOS Services

To most of us the command processing function of DOS is really what DOS is all about. In fact, there are several books about DOS that cover only the commands and ignore the other features of the operating system. If you are a programmer though, especially one who programs in C or in Assembly, you probably think that the DOS Services are really what DOS is all about.

A low level programming language, such as Assembly, does not have a direct means to do some of the simplest things on the computer, such as displaying a message on the screen. In BASIC you can just include a line in the program that says PRINT "This is the message.", and in Pascal you can use WRITELN('This is the message'), but in Assembly it is not nearly as simple. Instead, you must write a rou-

tine that somehow stores the message in memory and then accesses the computer's hardware to cause the video system to display the message. The advantage that Assembly has over high level languages is that Assembly will write the message quicker than the high level language and the resulting program code will require less overhead and less computer storage space. The program in the sidebar article "Controlling You Printer" is a good example. This program is only 25 bytes long, but if it were written in BASIC or PASCAL it would be several thousand bytes in size.

An Assembly language programmer usually has a choice of three methods to input and output data. The most primitive method is to directly access the computer's hardware. Another method is to interface with the computer's BIOS (Basic Input/Output Services), and the third method is to use the DOS services. Each method has

advantages and disadvantages when compared to another method. Accessing the computer's hardware directly produces the fastest results but the programs are often restricted to one particular computer. On the other hand, programs using the DOS services are compatible with practically any computer that uses PC-DOS or MS-DOS but of the three methods this is the slowest (There are also some things, usually related to graphics or sound, that the DOS services don't cover and must be done by interfacing with the hardware or BIOS.). The remaining method, using the computer's BIOS, is between these two extremes. The resulting program is faster than it would be by using the DOS services, but it is only as compatible as the computer's BIOS are compatible. Whenever you see a program advertised as running on the "IBM PC and 100% compatible computers", you can be certain that the program uses some calls to BIOS. Usually Junior does pretty good with these program since Junior's BIOS is very similar that in other IBM models. If a program uses direct hardware interfaces, Junior may well have a problem with the program.

BY JOHN WILSON

DOS Revealed: Part III

the equivalent of variables in a high level language such as BASIC. MOV AH,05 is very much the same as the BASIC statement: LET AH = 5. The instruction MOV DL,BX means to copy the value currently in BX into DL and is similar to the BASIC statement: LET DL = BX. The instruction MOV DL,[BX] is a little trickier. It means to place in DL the value which is in the memory location pointed to by BX. For instance: if BX contains the number 114, and if at memory location 114 is the number 1B, then MOV DL, [BX] will move the number 1B into DL.

The INT opcode starts an interrupt, which you can think of as being a routine which is already set up in DOS. Usually the specific routine which DOS executes is determined by the value currently in the AH register.

INC causes the register in the operand field to be incremented by one. The equivalent BASIC statement to INC BX would be: LET BX = BX + 1.

LOOP is similar to a FOR/NEXT loop in BASIC. In our program we will use the LOOP opcode at the end of a loop and the operand field will contain the address of the start of the loop. The 8088 uses the CX register to keep track of the number of loops so before the loop starts we must place in CX the number of times we want the loop to cycle.

The last opcode we will use, DB, is actually called a pseudo-op because it is not an official Intel opcode. DB, which stands for Define Byte, is used by Debug to place data into memory. In the operand field each byte of data is separated by a comma. We will use DB to place the printer control codes that we want to send to the printer. In our program we will use hexadecimal numbers to represent the printer control codes, but actually Debug can handle strings in the operand field of DB.

Our Program Design

Our program will be pretty simple. We have five numbers (the printer control codes) that we want to send, one at a time and in order, to the printer. All we need to do is to place the first number into DL, send it to the printer via function 5 of DOS interrupt 21, get another number and repeat the process until we are done. We will do this with a loop, and we will place all of the printer control code numbers in one section of memory. (This will make it easy to modify the program by adding or substituting other printer control codes.)

We will place the starting address of the data (the printer control codes) in the BX register and then increment the BX register each time through the loop so that it will point to the next number. Getting the data starting address was a little tricky. I made a guess to begin with, un-assembled the program to see what it really was and then re-assembled the program using the correct address. COM programs always start at address 100 and in this program you can trust me that the data starts at 114 (provided you don't change the program through the last INT call). Later, when you use Debug to assemble your program you can confirm these memory locations. With more sophisticated assemblers than Debug, you don't have to actually determine the starting address of the data.

Since we have five numbers to send, we will want our loop to make five cycles and so we must place the number 5 in the CX register. Of course, if you have more or fewer that five numbers to send to the printer you would place in the CX register the number of loops you need. The loop will begin with the instruction that moves the printer control number into the DL register. This instruction is in memory location 106.

About the only thing else we need to explain is how to end the program. Without a definite end, the program will continue to run through memory with very unpredictable results. There are several ways to end a program, but Microsoft recommends placing 4C00 in AX and then invoking INT 21.

Writing and Assembling the Program.

Probably the easiest way to write the program is to use a word processor or text editor that uses pure ASCII format (PC-Write, Edlin, Sidekick's notepad and numerous other programs will do the job) to make a script file that can be used by Debug. If you have a script file, you can use it to easily modify the program at a later date. The complete script file is listed below. You can name the script file just about anything you

want. I named mine: ELITE.SCR

I've shown the Debug instructions in lower case, and the actual program in upper case, but it doesn't make any difference whether you use upper or lower case on any part of the script file. The number of spaces between the opcode and the operand field is unimportant also, just so there is at least one space. Be certain that you press <Enter> to end each of the lines with the Debug commands, including the blank line just after the last DB line and the very last line. The very first line will contain the name of the COM file that Debug makes. Of course you can name it anything you want, but it must have an extension of COM (Debug will assemble it, but DOS won't recognize it as an executable program.).

The semicolons and the words that follow them are remarks that you can leave in or exclude. They are ignored by Debug. It would be helpful if you could use remarks to identify the printer control numbers in case you wanted to later modify the program, but Debug doesn't allow remarks after DB instructions.

The 19, after the r cx Debug instruction, tells Debug to write 19 bytes on the disk. If you have more, or fewer, than five printer control numbers you must change this value by adding of subtracting from 19. This arithmetic must be done be done in hexadecimal (Hint: 19 + 1 = 1A).

```
n ELITE.COM
a 100
MOV     CX,0005        ; for 5 loops
MOV     BX,114         ; starting address for printer control codes
MOV     DL,[BX]        ; load a printer control code for printing
MOV     AH,05          ; select DOS function 5
INT     21             ; to send control code in DL to the printer
INC     BX             ; to set address of next printer control code
LOOP    0106           ; go back to the MOV DL,[BX] instruction
MOV     AX,4C00        ; Microsoft's recommended way to ,
INT     21             ; end a program
DB      1B,4D
DB      1B,6C,08

r cx
19
w
q
```

To make an executable program from the script file, place the script file on a disk containing Debug and type in:

DEBUG < ELITE.SCR

If your script file has a different name, then use it instead of ELITE.SCR, but be certain the arrow points toward DEBUG. You will see Debug assemble your program, and Debug will point out any errors you might have made (but it won't tell you what the error was). If you have any errors, you can go back and correct your script file and run it through Debug again. As Debug assembles your program it will show, on the left side of the screen (you should be in an 80 column mode) the memory address of each instruction. The addresses will consist of four digits, a colon and four more digits (all hexadecimal naturally). The numbers to the right of the colon are the one's we are interested in. You can see that the first one is 0100, the start of the loop really is at 0106 and that the data starts at 0114 (just as we promised).

To run your program, turn on the printer and type in the name of your program. Not much will seem to happen, but now everything you direct to the printer, including screen prints, will have a left margin and will be printed with 12 characters per inch. This will hold true until you turn off your printer, or another program changes the printer settings.

UNPROTECTING IBM ASSISTANT SERIES OF PROGRAMS

This set of DEBUG routines that allows the Junior user to "unlock" the copy protection scheme of The IBM Assistant Series of productivity software is provided by Mr. Clyde Dodge of Mountain View, California. The advantages of a non-copy-protected program are both obvious and many, and we thank Mr. Dodge for providing these routines.

IBM Writing Assistant Version 1.01

Two versions of IBM Writing Assistant are available on your original program disks. One version is used if you have 128K and another version is used for 256K or more of available RAM. First determine which one is on your working copy disk.

    TYPE DIR WRITE.*

128K will display   WRITE.EXE   256K will display   WRITE.EXE
                    WRITE.SWP   WRITE.NON

First copy all files to another disk and put your working copy away - - copy a:*.* b:/v. (I know , you NEV-ER screw up, but do it anyway). Let's start with the 128K (165,376 byte) version.

    A>RENAME WRITE.EXE WRITE

    A>DEBUG WRITE

    -U 1314

You will see the following, if not type Q and call it a day.

XXXX: 1314	CD13	INT	13
XXXX: 1316	B80102	MOV	AX, 0201
XXXX: 1319	CD13	INT	13
XXXX: 131B	721F	JB	133C
XXXX: 131D	81C30002	ADD	BX, 0200
XXXX: 1321	B80102	MOV	AX, 0201
XXXX: 1324	CD13	INT	13
XXXX: 1326	7210	JB	1338
XXXX: 1328	8A8711FE	MOV	AL, (BX+FE11)
XXXX: 132C	324711	XOR	AL, (BX+11)
XXXX: 132F	3C74	CMP	AL, 74

    etc....

Type in the following at the (-) prompt

    -e 1314 90 90 90 90

    -e 1324 90 90

    -e 132F 39 C0

    -w

    (debug will respond with 'Writing 28600 bytes')

-q

    A>RENAME WRITE WRITE.EXE

All set, now for the 256K (163,328 byte) version.
    A>RENAME WRITE.EXE WRITE

    A>DEBUG WRITE

    -U 2B14

You will see the following, if not type Q and call it a day.

```
XXXX: 2B14    CD13        INT    13
XXXX: 2B16    B80102      MOV    AX, 0201
XXXX: 2B19    CD13        INT    13
XXXX: 2B1B    721F        JB     2B3C
XXXX: 2B1D    81C30002    ADD    BX, 0200
XXXX: 2B21    B80102      MOV    AX, 0201
XXXX: 2B24    CD13        INT    13
XXXX: 2B26    7210        JB     2B38
XXXX: 2B28    8A8711FE    MOV    AL, (BX+FE11)
XXXX: 2B2C    324711      XOR    AL, (BX+11)
XXXX: 2B2F    3C74        CMP    AL, 74
     etc....
```

Type in the following at the (-) prompt
    -e 2B14 90 90 90 90

    -e 2B24 90 90

    -e 2B2F 39 C0

    -w
       (debug will respond with 'Writing 27E00 bytes')
    -q

    A>RENAME WRITE WRITE.EXE

You now have an unprotected version of IBM Writing Assistant and can now copy the files onto a bootable disk. The WRITE.EXE file will no longer look for the hidden files on drive A. This was a problem before as we were stuck with a 320K formatted disk with no room for the operating system to be installed. It is important to keep the appropriate file (WRITE.SWP or WRITE.NON) with the WRITE.EXE file.

IBM Filing, Reporting and Graphing Assistant Programs

The procedure for unprotecting these is similar to that used for Writing Assistant (the 128K version) as the protection scheme used is identical (at least in my versions). Now for Filling Assistant (Where FILE.EXE is 72, 546 bytes)

    A>RENAME FILE.EXE FILE

    A>DEBUG FILE

-U 1718

You will see the following, if not type Q and call it a day.

```
XXXX: 1718  CD13      INT    13
XXXX:       B80102    MOV    AX, 0201
XXXX:       CD13      INT    13
XXXX:       721F      JB     2B3C
XXXX:       81C30002  ADD    BX, 0200
XXXX:       B80102    MOV    AX, 0201
XXXX: 1728  CD13      INT    13
XXXX:       7210      JB     2B38
XXXX:       8A8711FE  MOV    AL,(BX+FE11)
XXXX:       324711    XOR    AL,(BX+11)
XXXX: 1733  3C74      CMP    AL, 74
 etc.....
```

Type in the following at the (-) prompt
-e 1718 90 90 90 90

-e 1728 90 90

-e 1733 39 C0

-w
    (debug will respond with 'Writing 11B62 bytes')
-q

A>RENAME FILE FILE.EXE

Now for Reporting Assistant (where REPORT.EXE is 79,872 bytes)

 A>RENAME REPORT.EXE REPORT

A>DEBUG REPORT

-U 1518

You will see the following , if not type Q and call it a day.

```
XXXX: 1518  CD13      INT    13
XXXX:       B80102    MOV    AX,0201
XXXX:       CD13      INT    13
XXXX:       721F      JB     2B3C
XXXX:       81C30002  ADD    BX,0200
XXXX:       B80102    MOV    AX,0201
XXXX: 1528  CD13      INT    13
XXXX:       7210      JB     2B38
XXXX:       8A8711FE  MOV    AL,(BX+FE11)
XXXX:       324711    XOR    AL,(BX+11)
XXXX: 1533  3C74      CMP    AL,74
 etc....
```

Type in the following at the (-) prompt
 -e 1518 90 90 90 90

```
-e 1528 90 90

-e 1533 39 C0

-w
    (debug will respond with 'Writing 13800 bytes')
-q
```

A>RENAME REPORT REPORT.EXE

And finally for Graphing Assistant (125,440 bytes)

A>RENAME GRAPH.EXE GRAPH

A>DEBUG GRAPH

-U 5DA6

You will see the following, if not type Q and call it a day.

XXXX: 5DA6	CD13	INT	13
XXXX:	B80102	MOV	AX,0201
XXXX:	CD13	INT	13
XXXX:	721F	JB	2B3C
XXXX:	81C30002	ADD	BX,0200
XXXX:	B80102	MOV	AX,0201
XXXX: 5DB6	CD13	INT	13
XXXX:	7210	JB	2B38
XXXX:	8A8711FE	MOV	AL,(BX+FE11)
XXXX:	324711	XOR	AL,(BX+11)
XXXX: 5DC1	3C74	CMP	AL,74
etc...			

Type in the following at the (-) prompt
```
-e 5DA6 90 90 90 90

-e 5DB6 90 90

-e 5DC1 39 C0

-w
    (debug will respond with 'Writing 1EA00 bytes')
-q
```

A>RENAME GRAPH GRAPH.EXE

That's all there is to it! Now you can rearrange the programs, make bootable disks, run from a ramdisk or whatever. As always, if this doesn't work to your satisfaction, you have no recourse so please perform this on a DISKCOPY version of your software and not your distribution disk.

Much thanks to whoever figured out the Writing Assistant Unprotection as I only applied the same logic to the remainder of the series.

The Guggenheim Collection

We have a selection this month from one of our favorite PCjr artists - Mr. James Clark of Tucson, Arizona who continues to amaze us with his artistic abilities.

PALETTE

A program that let's you pick the four colors used for the 320x200 graphics
By Blair Bieser

INTRODUCTION

Programs written for a computer with a Color Graphics Adapter (CGA) sometimes use the 320x200 four-color graphics mode. Unless the program was specifically designed for the PCjr, there are usually only two palettes available:

0=black		0=black
1=cyan	or	1=green
2=magenta		2=red
3=white		3=brown

Palette is a small memory-resident program that lets PCjr owners activate a different palette - one with colors they've chosen by simply pressing <Ctrl>"/".

SYSTEM REQUIREMENTS

To run PALETTE, you must have a PCjr.

USING PALETTE

The first thing you must do is create and run PALETTE.BAS. This program is compatible with any BASIC compiler or interpreter. When the program asks you to choose the colors that will correspond to the numbers zero through three, use the table below to type in the correct integers.

0-black	4-red	8-dark gray	12-light red
1-blue	5-magenta	9-light blue	13-light magenta
2-green	6-brown	10-light green	14-yellow
3-cyan	7-light gray	11-light cyan	15-white

Every time you run PALETTE.BAS., you will create a new PALETTE.COM file. This file will only activate the four-color palette you type in. If you later decide that you want a different palette, you must run PALETTE. BAS over again. To install PALETTE, simply run PALETTE.COM after booting up your computer. PALETTE.COM does not have a feature to prevent it from becoming resident more than once, so you shouldn't run it over and over unless you want to eat up your RAM.

To activate PALETTE inside another program, wait until that program is in the 320x200 four-color graphics mode. Then press "/" while holding down the <Ctrl> key.

If your program uses <Ctrl> "/" for some other function, you can assign your own "hot" key. Simply follow the instructions below:

1. Change the 53 in line 340 of PALETTE.BAS to the PC (not PCjr) scan code of your "hot" key. By the way, you can find a list of PC scan codes by looking in a book like Peter Norton's *Inside the IBM PC*.

Here are some typical scan codes:
```
[=26   ;=39   `=41   ,=51   F1-F10 = 59-68
]=27   '=40   \=43   .=52
```

2. Change the four in line 360 of PALETTE.BAS to the sum of the "special" keys used for your "hot" key. Use the table below:

right shift key	=1	(Do not add eight for the <Alt> key if
left shift key	=2	your "hot" key is a "blue" character
<Ctrl> key	=4	like "\".)
<Alt> key	=8	

For example, the sum for <Alt> "{" is either 1+8=9 or 2+8=10 depending on which shift key you want to use (the scan code is 26, since "{" is the shifted value of "["). The sum is zero if no "special" keys are used.

MORE COMMENTS

I suggest you create a unique PALETTE.COM file for each palette you want to use. Rename them so you can tell them apart. If you install more than one of these .COM files per computer session, give them each a different "hot" key - otherwise, pressing one "hot" key will cause the screen to flash through all of the palettes that have become resident.

You can't have a "hot" key that uses "|" or "~" (the scan codes for these "blues" characters only work for "\" and "`" keys).

When a program activates the 320x200 four-color graphics mode, the PCjr's ROM BIOS resets the palette to its default values. This means that you may have to press <Ctrl> "/" several times during a program to keep reactivating your palette (for instance, if the program repeatedly switches between the text and graphics modes). There is a way to prevent the ROM BIOS from resetting the palette, but this will cause your palette to be activated every time you go into the graphics mode. If anyone is interested, I can send them this program.

TECHNICAL SUPPORT

If you need technical support or a copy of the source code, please send 50 cents and a self-addressed, stamped, business-size envelope to the address below. I'll make every effort to help anybody who asks. Just be sure to provide as much information as possible about your particular problem. Also, if you want me to try to solve some other PCjr problem, let me know (PALETTE was the result of a long distance request from a reader at Holloman AFB in New Mexico).

Blair M. Bieser
Address until July 1988:
1900 S. Eads Street
Apt. 807
Arlington, VA 22202

Permanent address:
8413 Nall
Prairie Village, KS 66207

Although PALETTE is donated to the public domain, it may not be distributed under a different name or without this documentation.

PALETTE

```
100 REM -- BASIC PROGRAM TO CREATE PALETTE.COM
110 OPEN "PALETTE.COM" AS #1 LEN = 1
120 FIELD #1, 1 AS A$
130 CHECKSUM = 0
140 FOR I = 1 TO 21
150    LINESUM = 0
160    FOR J = 1 TO 8
170       READ BYTE
180       CHECKSUM = CHECKSUM + BYTE
190       LINESUM = LINESUM + BYTE
200       IF (BYTE < 256) THEN LSET A$ = CHR$(BYTE)
210       PUT #1
220    NEXT J
230    READ LINECHECK
240    IF LINECHECK <> LINESUM THEN PRINT "Error in Line"; 380 + 10 * I
250 NEXT I
260 IF CHECKSUM <> 15150 THEN PRINT "DATA were not valid" : END
270 FOR I = 0 TO 3
280    PRINT USING "What do you want color # to be";I;
290    INPUT BYTE
300    IF (BYTE < 0) OR (BYTE > 15) GOTO 280
310    LSET A$ = CHR$(BYTE)
320    PUT #1, I + 5
330 NEXT I
340 LSET A$ = CHR$(53)
350 PUT #1, 14
360 LSET A$ = CHR$(4)
370 PUT #1, 31
380 CLOSE
390 DATA 233, 130,   0,   0,   0,   3,   5,  15,  386
400 DATA 156,  80, 228,  96,  60,  53, 116,   7,  796
410 DATA  88, 157,  46, 255,  46,   0,   1, 180,  773
420 DATA   2, 205,  22,  36,  15,  60,   4, 117,  461
430 DATA 239,  88,  46, 255,  30,   0,   1, 156,  815
440 DATA  80,  83,  81,  82,  30, 186, 218,   3,  763
450 DATA 236,  36,   8, 117, 251, 236,  36,   8,  928
460 DATA 116, 251, 176,  16, 187,   4,   1, 185,  936
470 DATA   4,   0, 238, 254, 192,  80,  46, 138,  952
480 DATA   7, 238,  88,  67, 226, 244,  51, 192, 1113
490 DATA 238, 142, 216, 187,  26,   4, 139,   7,  959
500 DATA 137,  71,   2,  31,  90,  89,  91,  88,  599
510 DATA 157, 207,  10,  80,  65,  76,  69,  84,  748
520 DATA  84,  69,  32,  98, 121,  32,  77, 105,  618
530 DATA  99, 114, 111,  87, 105, 122,  97, 114,  849
540 DATA 100,  32,  83, 111, 102, 116, 119,  97,  760
550 DATA 114, 101,  13,  10,  36, 184,   9,  53,  520
560 DATA 205,  33, 140,   6,   2,   1, 137,  30,  554
570 DATA   0,   1, 184,   9,  37, 186,   8,   1,  426
580 DATA 205,  33, 180,   9, 186,  98,   1, 205,  917
590 DATA  33, 205,  39,   0,   0,   0,   0,   0,  277
```

MEMORY EXPANSION BOARD UPGRADES

If you want to be the first kid on your block to have 256K chips in your IBM, Tecmar, or Microsoft **expansion board**, this one's for you (you must already have 256K total RAM in your PCjr system. **IMPORTANT** If your Junior only has 128K total, you do not have a memory expansion sidecar attached, and you CANNOT utilize this service). After replacing the 64K chips originally soldered in your JrCaptain or IBM expansion sidecar, adding new sockets, and inserting 256K chips, you will effectively have 640K of RAM in your PCjr to play with. All work will be done by qualified technicians headed by Brian Cook. What we want you to do, is to fill out the form below to let us know if you're interested. Once we have your form on file, you will be notified by phone or mail when we would like for you to ship your board to us for prompt work, hopefully within three weeks time. The cost of mailing the board to us and insuring it will be your responsibility, and the cost and care of returning your upgraded board to you via UPS in a safe manner will be ours. We want you Tecmar owners to send your power supply along as well, so that we can test the board with your own power supply before we do anything to it. The cost of this service will be $155.00 (U.S. Currency). If you should have any questions concerning this service, please let us know on your form. We will guarantee the work and the 256K chips for 90 days. Canada please write.

Name : _____

Telephone   no.: _____

*Address*_____

*City*_____*St*_____*Zip*_____

Mail form to:

The PCjr Club
P.O. Box 59067
Schaumburg, IL 60159-0067
ATTN: Brian Cook

EMS MEMORY FOR THE PCJR

By Vincent Yuan

The original IBM PC in 1981 cost a lot of money for a lot less machine than the junior. It came with 48K of RAM, one 160K floppy disk drive, and cost $2,235. Throw in the essential display and printer card ($335.), monochrome monitor ($345), and a second disk drive ($570), and you could have bought an inexpensive car back then. It serves well for the PCjr owner to remember this the next time he grinds his teeth over some PCjr compatibility. And back then 48K personal computer was a powerful enough machine to handle most microcomputer chores. With the advent of cheaper memory chips and more powerful programs that craved larger amounts of RAM, 256K was considered plenty of computing muscle even in late 1986. The rest, they say, is history. Spreadsheets grew enormous, word documents became unwieldly, 256K just wasn't enough. Later, the power computer users started to lament the 640K limit of RAM that DOS could access. Finally, that need for bigger and fatter spreadsheets and documents spawned the age of EMS memory, with machines having up to 15 additional megabytes of memory. And now PCjr owners, too, can enjoy the luxury of a 1,152K machine (640KPCjr + 512K EMS) thanks to the efforts of Paul

Crumley of Attic Technology, Box 354, Verona, PA 15147. (412) 795-7430. His company will modify an IBM 128K sidecar to become a 512K EMS wonder. (The cost of this procedure was $250., but with the dramatic rise in the cost of DRAM, this price may be changed.) In any case, this upgrade procedure is encouraging to all junior owners because it again demonstrates the fact that the PCjr can be modified to keep pace with the rest of the PC world.

Keep in mind, however, that "1 megabyte" of memory sounds like this memory is in one continuous block and can be used by the Junior for DOS and application programs. It is not. To confuse you a little bit more, the actual total addressing space of the 8088 microprocessing chip used in the PCjr, PC, and PC-XT is one megabyte (see figure 1), but the only the lower 640K is the RAM that can be used by DOS, the rest of the one megabyte cannot be used by DOS but instead is used for video boards and ROM BIOS chips.

Unfortunately, the EMS memory that sits above all of this, can now only be addressed by certain programs such as the

EMS MEMORY

ROM BIOS & VIDEO

640K MEMORY USED BY DOS & PROGRAMS

1-megabyte address space for computers using 8088 microprocessor including the IBM PCjr
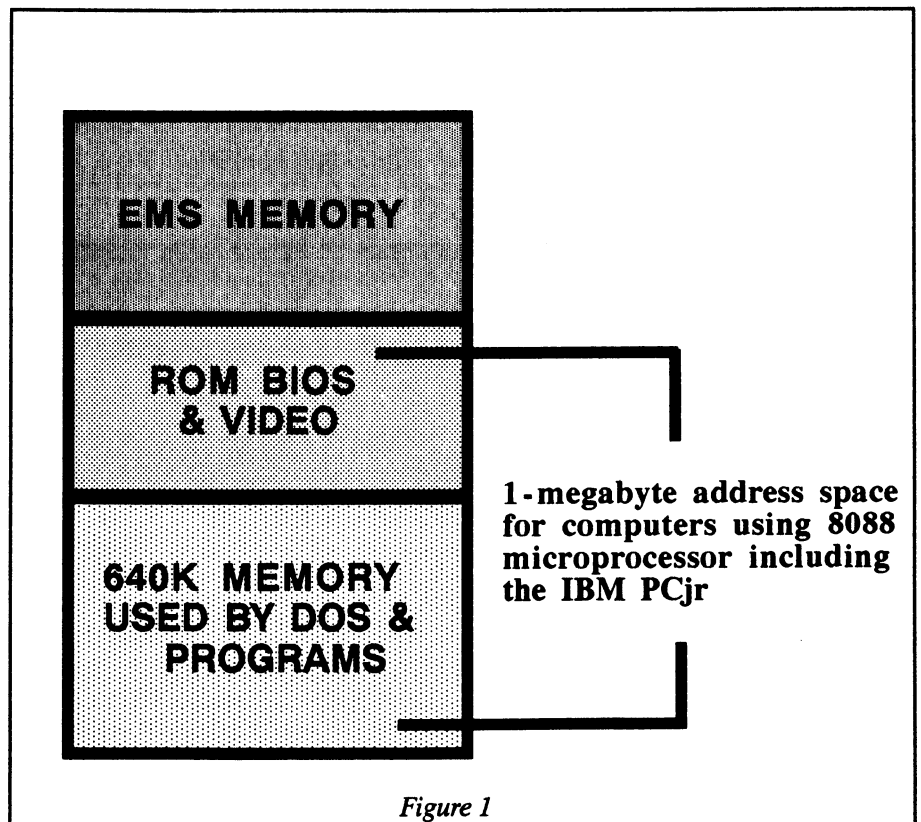
Figure 1

W *ith innova-*
tors like
Paul Crumley
around, and the
support of thou-
sands of PCjr
lovers, once
again the jr refus-
es to be left be-
hind the PC
crowd.

later versions of Lotus 1-2-3 (Release 2) and Symphony, though other business applications such as integrated programs and spreadsheets that need more RAM will soon utilize this EMS memory as well. In other words, EMS memory has limited uses at the moment. Now even if you are not a heavyweight user, this EMS memory can still be valuable to you as a PCjr owner by providing a large ramdisk to load a program, thereby freeing the rest of the "legitimate" RAM for running the program. For example, a 640K PCjr with an additional 512K of EMS memory can utilize the usual portion of 640K of RAM for large, powerful programs, and still have a 360K ramdisk to spare as well! Therefore a 640K junior with an EMS board becomes quite a

powerful productivity tool even if it has only one physical disk drive. A 360K ramdisk makes a big difference. Normally, only computers with the 80286 or 80386 microprocessor can address this extra memory, but AtticTechnology includes special software that allows the Junior (with 8088 microprocessor) to also enjoy some of the benefits of the EMS memory. Some benefits are better than no benefits.

At presstime, only IBM boards could be upgraded to EMS status, but Crumley has stated it is only a matter of time before other expansion sidecars such as Tecmar's jrCaptain, Microsoft's Booster, etc., will be able to be modified with this procedure. He also is working on a custom PCjr EMS unit for

PCjr owners, thereby bypassing the entire upgrading procedure altogether.

As stated before, included with the upgraded EMS board is software provided by Crumley to help the PCjr owner access the EMS memory, and allow the user to create a ramdisk that has a rather unique feature of surviving a warm boot. Additionally, the software and new memory will be compatible designed to use EMS memory version 3.2.

With innovators like Paul Crumley around, and the enthusiastic support of thousands of PCjr lovers, once again the PCjr refuses to be left behind the rest of the PC crowd.

Junior's Courseware Report Card

Chip and Lotus Dos-Byte have a problem. As soon as summer was over, they planned the continued education, via computer, of their entire family. But buying educational software is more confusing than they'd imagined. There are several products that promise to solve Clem's math problems; and others that might help Hortense develop her artistic abilities; and a few even threaten to teach Chip typing. With so much to choose from, where should they begin? Well, once again, it's *PCjr Magazine* to the rescue. Our crash course consists of reviews of 14 programs, for children and adults, organized by academic subject. So start with ART, check out your electives and discover which programs make the grade.

ART

DELTA DRAWING
Spinnaker Software

Junior's computer screen replaces the doodle pad with the help of a highly entertaining software package called *Delta Drawing*.

With this graphics program you can design everything from simple line drawings to pictures, words, and special effects such as kaleidoscopes and

DELTA DRAWING

random repeat. The program uses one- and two-key commands to control all cursor movements and color combinations in the drawing mode. As you draw, the commands you use create a program. You can save the text of that program and call it up again using a function key. Drawings can be saved for future viewing on separate formatted disks (although it's still necessary to load the *Delta Drawing* disk in order to view a file). The program also comes with 27 preprogrammed designs.

Delta Drawing is easy to boot, requiring relatively few disk swaps. Although the software we tested for these purposes was originally designed for the PC, it ran perfectly on the PCjr.

The program utilizes approximately 85 commands to perform all of the drawing, editing, display, and system functions. The program's 113-page manual contains step-by-step directions and command tables. (The single menu on the disk itself is for directory functions only.)

Delta Drawing is already on its way to becoming a software classic. It's the kind of program that you'll pull out of its sleeve whenever you feel the need for a doodle break from ordinary computer drudgery. —*Martin Porter and Steven Schwartz*

BUSINESS

IN THE CHIPS
Creative Software

When a software company markets an educational game, there's normally no good excuse for it to omit from the packaging any mention of what age group the program is intended for. But there may be a good reason in the case of *In the Chips*: It's hard to imagine what age group would be attracted to this game.

In the Chips casts you as an entrepreneur (in Silicon Valley, no less!). You start the game with $100,000 to invest in researching, developing, manufacturing, advertising, and selling software.

But the game gives you no opportunity at all to get involved in the strategy and challenge of that process. The skeletal structure of the game allows only arbitrary decisions, so it provides neither any lure for the adult player nor any insight into business. And the screens are visually too boring to make it a game that would attract a child.
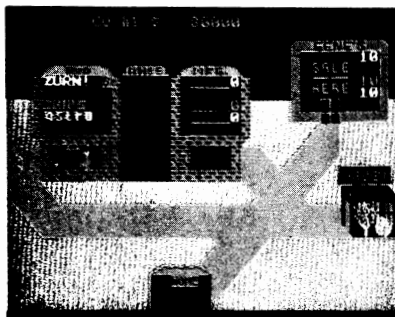
IN THE CHIPS

You can play against the computer or against another player. I had to play against the computer: I could not get anyone else interested in the game. The directions were terribly complicated for me, because I really do not live a life of production, inventory, pricing, and bottom line. Consequently, I could not simplify the instructions when I tried to entice a couple of friends to play *In the Chips* with me.

So I became Company 1 while the computer became Company 2. I made the first moves by using a joystick (you can also use the cursor keys) to move a little figure—my company president—around on paths that connect with silhouettes of buildings.

My president and I went first to the research and development building, where we chose two software products to develop. Then we traveled to the factory building, where we had a thousand software products made. Our next stop was at sales, where we set the price. Finally, Prez and I went to the advertising department in order to make sure the world would know about our product. All our progress was recorded in the top center of the screen as money spent.

I then sent Prez down the road to his home, thus ending our turn. That was the cue for the computer to take

up the challenge and play against me as Company 2. But the computer played so fast I could not follow its moves very well, a big disadvantage, for if I could have, I might have been able to find the patterns programmed into the game.

The only pattern that mattered, though, was that the computer did everything better than I did. It wound up its first quarter showing a modest loss; my loss was enormous.

I played a few more rounds (or quarters) and only gradually improved to show a modest profit—although my profit was still lower than the one shown by the computer.

I lost both the game and my interest.   —*Ian Garvey*

TYPING INSTRUCTOR
Individual Software, Inc.

Whether you're a tried-and-true typist or a first-time key-tapper, *Typing Instructor* can quickly improve keystroking.

The program is geared not just for the typing neophyte, but also for typists without computer experience. Operating instructions are clear both on screen and in the manual.

Typing Instructor is divided into seven sections. Three are purely instructional, with two tutorials for first-time typists and one section describing standard word processing features. The others use progressively more difficult drills and testing to build speed and accuracy. There's easy access to the main menu for more advanced typists who want to move around, but beginners are advised to move through successive levels.
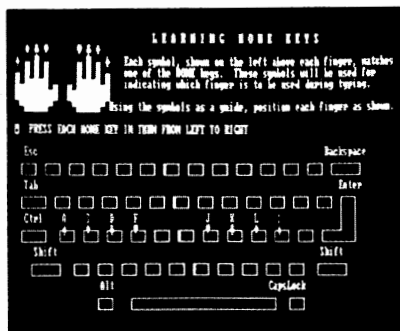
TYPING INSTRUCTOR

In the first two sections, bright graphics and music accompany a tutorial on finger placement and introduce the control commands.

Typing Instructor differentiates the keys by assigning the symbols of playing-card suits to each finger. For ex-

ample, the spade is used to designate any keys that must be struck by pinky fingers. Diamonds correspond to ring-finger keys, clubs to middle-finger keys, and hearts to the index-finger keys. Symbols for left hand fingers are blue; for the right hand, they're white.

The beginner's exercises use lots of positive reinforcement with messages like "terrific," "excellent," and "great keystroking!" There are "helpful hints" and "special instructions" to reinforce what has already been taught. If you goof, the program politely asks you to "try again."

The "Learning Key Locations" section comes next, with 18 drills on which

The exercises use lots of positive reinforcements like "terrific" and "excellent."

keys go with which fingers. Lessons zero in on a small group of keys. The student's typing always appears directly under the computer's example.

"Building Accuracy and Speed" progresses to full paragraphs of text for intermediate students.

For more advanced typists, there's "Typing Skills Evaluation." It includes business and office text and technical material. Speed and accuracy are measured as in the last section.

After each drill, you'll see the accuracy you attained expressed as a percentage, the number of words with errors, the number of lines typed without error, the words per minute (wpm), the net wpm (the words typed per minute less two wpm for each word typed incorrectly), and the best net wpm on a line. The screen also displays "Words for Practice," the ones you get wrong in each test.

You can break away from the lessons at any time and go to "Lobster Sea Adventure," a word-chase game. A cursor indicates the characters you're to type, and you must type faster than the lobsters that are swimming from

left to right across your screen in pursuit of your letters. Words are removed from the screen as you type them, and points are scored. The difficulty of the text and wpm speed of the lobsters can be adjusted. When you make a mistake, the computer beeps, "^ err" flashes on the screen, and you must retype the word. Your score is given for the number of words typed, based on speed. Points are subtracted for typing errors and added for level of difficulty and for finishing the game without having your words gobbled by the lobsters.

All the timed test sections give you the option of ending each line by striking Enter (standard typewriter style) or letting the words wrap automatically to the next line (a feature offered by most word processing programs).

However, the testing sections have one problem: During the test, you must match exactly what the program displays word for word and space for space. This means that if you drop a space between two words, or inadvertently strike an extra key, everything after that point will be marked incorrect by the computer, unless you pause and begin matching the copy exactly again.

Typing Instructor demands attention and participation throughout the program, which is perhaps its greatest asset. The colorful graphics keep wandering eyes on the screen, but at times the colors are so intense and contrasted they could tire eyes that are straining to catch every letter.

Except for those problems, *Typing Instructor* is an exceptional teacher, with something for every typist.
—*Susan Sandler*

ENGLISH

DEFINITION MANIA
Facileware

Definition Mania is a simple but effective program designed to put you through your vocabulary paces in a multiple-choice game format. The game is aimed at an adult audience, but it could be helpful for high-schoolers preparing for the Scholastic Aptitude Tests.

Many words were challenging enough to stump even our erudite editors. Words such as "bissextile" (which means a leap year), "abomasum" (the fourth, or digesting, chamber of a ruminant's stomach), and "laniary" (adapted for tearing, or canine, as in teeth) are probably not well known among the general population, either. However, we did find enough familiar words to make the game useful and a challenge rather than a frustration.

The object of the game is simply to correctly define as many words as possible. One to six players or teams can play, and players take turns entering their answers. Correct responses are highlighted in black against the color background. Brief comments and quips appear often when the answer is given, and are usually directed at those who have made exceptionally good or poor selections.

The program lists the names of the three highest scoring players or teams and shows a word count at the end of the game. However, no scores are given, really an unforgivable omission.

Striking the letter o key brings the list of options onto the screen; s gives a demonstration of the game. You have to read the manual to discover these two features, however; there's nothing in the program that shows they exist.

You can set a time limit and/or a number of questions per game, choose to have color or not, opt for sound or silence, and see a sample demonstration. Options must be reset for each game.
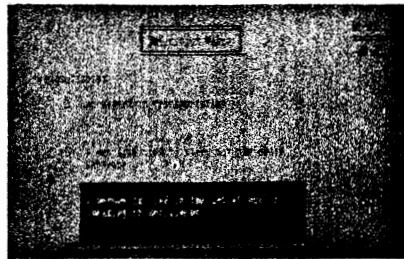
DEFINITION MANIA

The program has a dictionary of about 600 vocabulary words, and you have several choices about the order in which they appear. Entering a numeric response to the randomize option causes the game to start with the word that corresponds to the number. This is useful if you want to march straight through the dictionary from A to Z. Answering y scrambles the words for each game; an n response starts the game from the first word in its dictionary. Randomizing the words might be more valuable for pure entertainment uses, while naming a starting point could be better for students who want to cover the same material.

The words and their definitions are from *Webster's New World Dictionary,* 2nd Ed., 1980.   —*Susan Sandler*

M-SS-NG L-NKS
(Young People's Literature Edition)
Sunburst Software

M-ss-ng L-nks has its own missing link: What age group is it aimed at?

Apparently the program's intent is to reinforce the user's knowledge of word structure, spelling, and grammar. It supplies passages from nine children's stories with letters missing from each word in the passage. The object is to fill in the blanks.

The program has nine levels of difficulty; the simplest, in which all of the vowels are missing, is easy once you get the hang of it. However, the most difficult level is virtually impossible since no letters or *blanks* are given at all.

In part, what makes *M-ss-ng L-nks* challenging is that some of the stories, such as *Shadow of a Bull, My Secret Garden,* and *The Lion, The Witch, and The Wardrobe,* are so obscure. As a
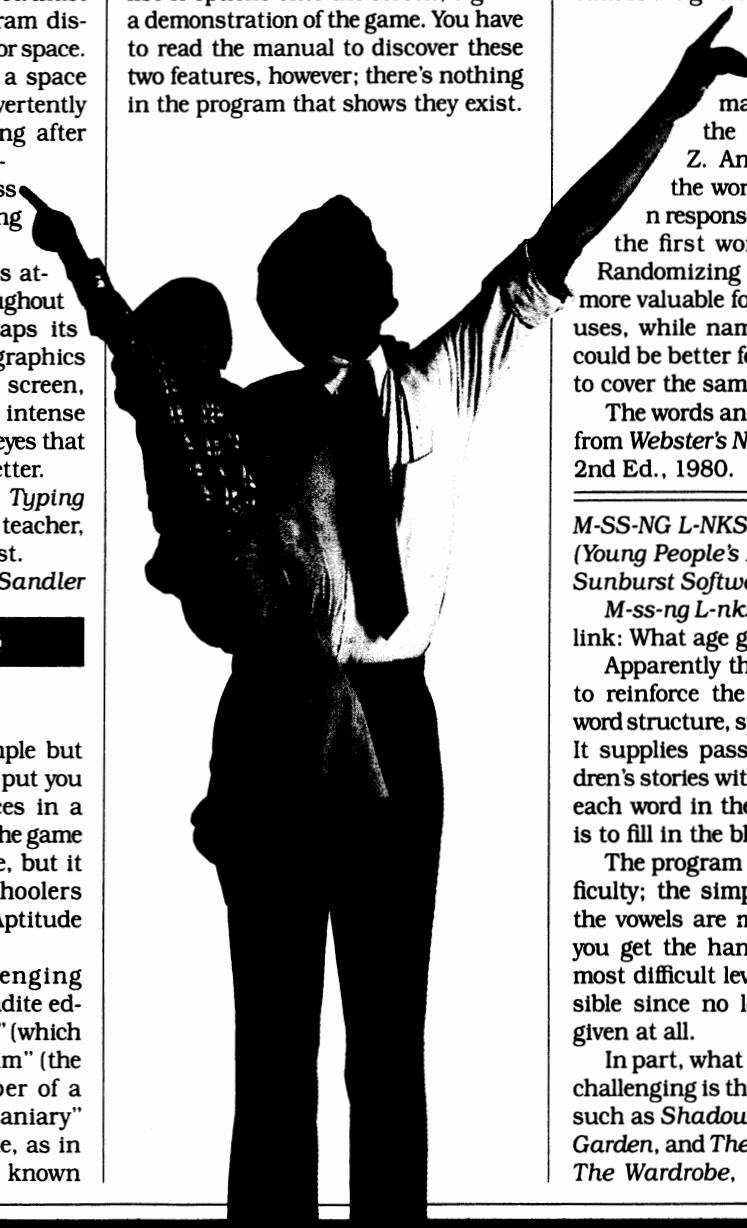
result, when the blanks become plentiful, the going gets rough. But one has to wonder about the purpose behind a level composed exclusively of blanks with no clues at all.

There are no on-screen graphics or colorful animation to dress up the relatively drab screens, but the on-screen text is bold and broadly spaced for easy reading. All the DOS loading commands are already written on the disk.

The program offers its share of cus-
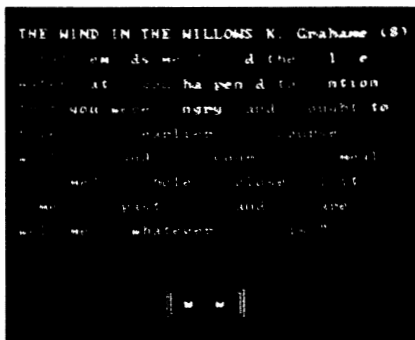
M-SS-NG L-NKS

tomized selections. You can choose the story, the passage, and the level of difficulty (nine choices for each), plus how many turns (one to five) you have before the correct letter is automatically supplied. You can also bypass the beginning directions and exit easily at any time.

The educational applications of such fill-in-the-blank brain twisters are plentiful. Trial and error does reinforce spelling rules and vocabulary. Also, educational testing of this type usually withstands repeated usage and holds the attention of a wide age group. However, the major flaw of the "Young People's Literature Edition" program is that the levels beyond the second are probably too difficult for a youngster, while the written content is of little interest to anyone above the age of 10.

Sunburst Software offers other *M-ss-ng L-nks* editions for Classics, English, French, Spanish, and German, plus one called the Micro-Encyclopedia. —*M.P. and S.S.*

SPEED READER II
Davidson & Associates

Does good educational software demand graphics and games? Not really. If *Math Blaster!* (reviewed on page 41) is an indication of how the two complement each other, *Speed Reader II*, from the same designers, shows how simple text can still offer an educa-

tionally rich computer experience.

Speed Reader II is one of the more unique technical applications we've seen: It actually teaches you a method to help you read faster. The speed reading principle—reading words in groupings, rather than individually—is a hard one for most people to get the hang of; it goes against their educationally patterned grain. Ordinarily, disciplining one's eye coordination, alone, is a major stumbling block.

However, the computer is naturally designed for eye training, and coordination has long been the video game's major selling point used by those eager to defend the genre's socially redeemable qualities. *Speed Reader II* makes good use of this feature by flashing letter and word groupings on the screen at speeds that make the eye automatically recognize them collectively.

Speed Reader II consists of six parts: two sets of warm-up exercises (letters and words), an eye movement lesson, a column reading lesson, a reading passage lesson, and a timed
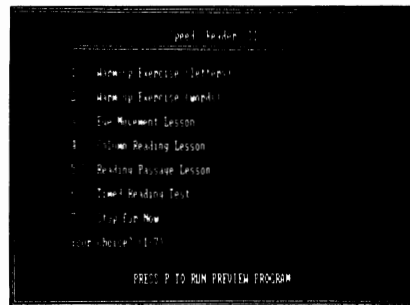
SPEED READER II

reading test. It can be used with the two warm-up exercises, but the data disk is required for all other activities.

Within the reading exercises, there is a total of 35 stories (20 for the eye movement lesson and 15 for the reading passage lesson). As with *Math Blaster!*, there is an on-board editor that lets you create your own passages.

Although *Speed Reader II*'s basic disk is designed for users of high school age on up, four additional data disks for specific age groups can be purchased from Davidson.

The version of *Speed Reader II* that we used was originally developed for the PC. For the most part, it works fine on the PCjr, but there is one minor problem. While it gives you the choice of 40- or 80-column text width, and light (black letters on white) or dark (white letters on black) backgrounds, it will not run on Junior when using an 80-column width and a light background. But it's a minor thing to sacrifice for a gain in reading speed. Most important, *Speed Reader II* makes good on its claim as a speed reading tutor. —*M.P. and S.S.*

SPELLICOPTER
DesignWare Inc.
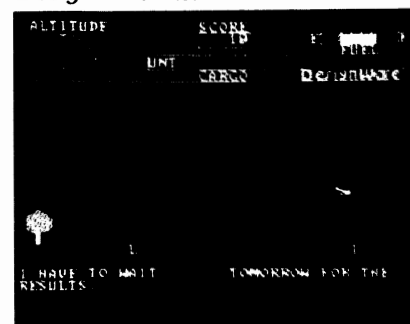
SPELLICOPTER

Ever since video games first captured children's fancies, educators have tried to combine the competitive edge of the arcade with classroom curriculum. *Spellicopter* comes close to

offering video game excitement without sacrificing learning in the process.

In this action spelling game, you, the player, are a pilot of an on-screen helicopter. Your mission is to fly over mountains, between clouds, and around various flying objects to your destination: the letter field. Once there, your task is to pick up scrambled letters in a way that forms a word and fly back to the landing strip where the word is dropped to complete a sentence. Fuel up for the next word and you're off on your next mission. Points are awarded for correct spelling and unused fuel. The player loses points for crashes and incorrect spelling.

Spellicopter has a bank of 40 word lists of 10 words each. The words are classed for elementary, intermediate, and advanced spelling levels. The terrain that surrounds the letter field may also be set for one of three levels of difficulty. Thus, it is suitable for anyone 6 years old or older. In addition, you can create your own word lists, with accompanying clues.

There are a few problems that should be noted. The most serious one is that the color graphics don't work with an RGB monitor. Although some colors appear on the screen, most of the game (even the trees and sky) is in black and white. There's more trouble with the action of *Spellicopter:* It runs very slowly on the PCjr. While this doesn't interfere with the learning process, the slowness may frustrate children used to the whiz-bang of the arcade. All things considered, *Spellicopter* is still a lot of fun and valuable as a tool to strengthen the spelling skills of kids and adults alike.   —*M.P. and S.S.*

GEOGRAPHY

ACROSS THE U.S.A.
Stone & Associates

You can't expect children to learn geography by name only. They must associate the locale with its environment to make the subject more than a formless mind exercise.

Across The U.S.A. works on memory skills, but it treats geography as little more than an excuse to do that. Apparently, it is designed strictly to instruct users on the names, capitals, and abbreviations of all 50 states.

A map of the United States appears on screen. The state in question appears in red both on the map and as an individual shape on the left side of the screen (Alaska and Hawaii appear

on the left side only). The object of the game is to guess the state or its capital, and spell or abbreviate it correctly.
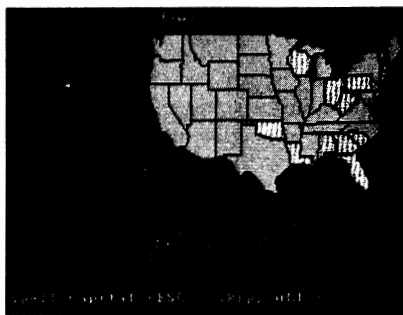
ACROSS THE U.S.A.

The most curious thing about this software is its method of scoring, which, surprisingly enough, is based exclusively upon typing accuracy. Scoring data includes elapsed time, words completed, words skipped, characters correct, total number of keystrokes made, and a percentage rating for character/key efficiency. Correct answers are positively reinforced

with snippets from musical Americana (such as "Hang Down Your Head Tom Dooley" and "Scarborough Fair").

A geography program should emphasize geographic information, like nearby waterways and landmarks, instead of typing and spelling skills. In this regard, *Across The U.S.A.* has lost its bearings.   —*M.P. and S.S.*

MATHEMATICS

ADVENTURES IN MATH
IBM Software

Kids like castles, treasures, dragons, and spiders, don't they? They usually hate math. Why not put them together and see what happens?

The combination does have merit, although the fantasies have relatively little to do with the math in IBM's *Adventures in Math.* The object is for the users to make their way through a maze of rooms and passageways in a castle by solving math problems to open doors, collect treasure, and ultimately escape. There are five different math skill levels, and you can choose which of the four basic arithmetic skills you wish to use.

Adventures in Math can be played by one or two players. The cursor movement keys control all game movement, and Fn-F5 and Fn-F6 must be pressed in order to unlock doors or pick up treasure, respectively. But before you go through the doors or collect the treasure, you must first solve a math problem. Answer correctly, and you may pass through or collect the treasure. If you answer incorrectly, the door will not open or a spider will descend from the top of the screen and
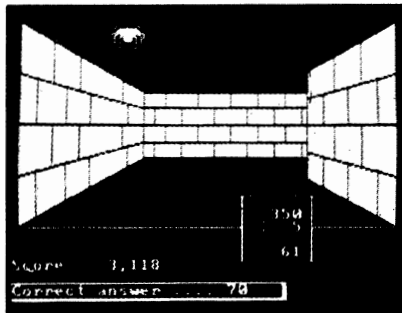
ADVENTURES IN MATH

snag the treasure. Points are awarded whenever you pass through a door. If you bypass treasure, a dragon appears and tells you to go back and solve the problem to collect the treasure. The game automatically concludes when you go through the final door with the

exit sign above it.

Although *Adventures in Math* offers a complete review of basic math skills, there is no on-screen tutorial to respond to wrong answers. There also is no real motion to speak of, but the graphics are colorful. A pencil and paper also are needed for calculations. It's a good try, but the fantasy isn't lively enough for the program to hold up to repeated use. *Adventures in Math* is recommended for ages 6 to14.

—*M.P. and S.S.*

MATH BLASTER!
Davidson & Associates

Of all the mathematics software for the PCjr we've tested, *Math Blaster!* is by far the most innovative. *Math Blaster!* not only takes advantage of animated color graphics, it also offers traditional modes for instruction and review.

The package is composed of two disks: a program disk, which is not to be written on, and a data disk, which
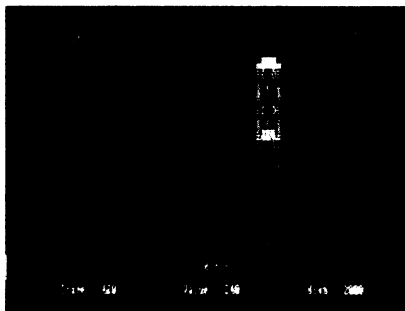
MATH BLASTER!

is used to replace the program disk after the latter is booted up. The program contains 25 data files divided among five subject categories (addition, subtraction, division, multiplication, and fractions and decimals). And, there are five levels of difficulty for each subject.

Although it is as an arcade-style learning game that *Math Blaster!* truly shines, it is important to view the program as a package. It also offers three variations on standard math drills: the "Look and Learn" section displays the math problems on file along with the answers. The "Build Your Skill" section offers the same problems, but requires you to provide the solution. The "Challenge Yourself" portion is similar to "Build Your Skill," except that the parts of the problems that need to be filled in vary.

The fourth option is where the program's name comes from. *Math Blaster!* is an arcade game that tests the

user's recall of facts along with his or her reflexes. The game prints a problem at the bottom of the screen and offers four possible answers along the top. You must blast an animated character out of the appropriate cannon below the right answer to score. Time is limited by two descending balloons on either side of the action, though it is possible to prolong the game by having the character repeatedly push the balloon back up in the air.

All movement is controlled by letter keys: the K key moves the character to the left, the L key moves it to the right, and the Z key fires the cannon (and pushes the balloon up). It is possible to use a joystick, but the cursor keys, unfortunately, are not usable.

The game's two most difficult levels are also memory exercises, since both the problem and the possible solutions flash on screen for just a few seconds. *Math Blaster!* also has a sophisticated editor that makes it possible to create, save, and edit your own data files. However, the instructions are detailed and make customizing a difficult process.

Although the software was originally designed to run on the PC, it runs without any problems on the Junior. The program disk is copy-protected, so you can't make a back-up copy. This attempt at preventing software piracy, in turn, boosts the recommended price, since back-up copies from Davidson & Associates cost $10. Nevertheless, we recommend you purchase one.　　　　　　—*M.P. and S.S.*

SUCCESS WITH MATH
CBS Software

Unlike *Adventures in Math*, there is no action here at all—absolutely no attempt to dress up standard math drills with sound or graphics. Add to this the fact that the only color found in the program is in the opening credits, and the fact that you must load DOS 2.1 every time you boot it, and
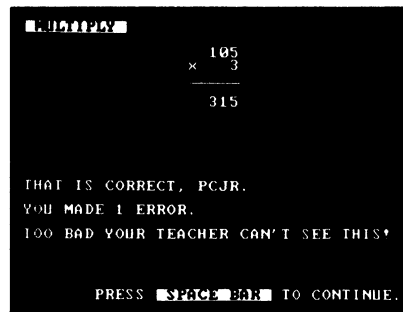
SUCCESS WITH MATH

you've got some serious problems. *Adventures in Math* is an example of educational software at its unimaginative worst.

The first edition, "Addition and Subtraction" (for grades one to four), teaches the concepts of carrying over numbers when adding and borrowing while subtracting. The child can choose up to nine problems in a set and can also select the problem's number of rows and columns.

The program automatically moves the cursor to the top of the next number column (for carrying in addition), but allows the option of subtracting with or without borrowing. In the borrowing mode, the child must be sure to hit the B key when borrowing is necessary.

Of all the mathematics software for the PCjr, Math Blaster! is by far the most innovative.

The second edition, "Multiplication and Division" (for grades two to eight) uses a similar technique in its instruction of multiplication and long division, with options for the number of digits in the multiplier and divisor. This, too, provides practice in the necessary addition and multiplication skills.

The software is a forgiving instructor. Both editions contain supportive comments and prompts that will give children encouragement. They'll need plenty of that, since the programs are as boring as conventional math texts.

—*M.P. and S.S*

SHOP

PIPES
Creative Software

Pipes, a slow-paced game for one player, has only one page of instructions. But that's all it needs, for it's very easy to learn.

The object, says the insert, is to

use sections of pipe to connect all the houses in town to the main water supply. To play well, you do this using as little pipe as possible. The pipe costs money and the best game is one in which you spend the fewest dollars.

There are no elaborate graphics. After choosing the number of houses you want to attach (from one to five), all that shows up on your display are the houses, a large water tank, and the pipe factory. Arlo the plumber also appears, and you make him move (slowly) by using the cursor keys.

You send Arlo plodding to the factory
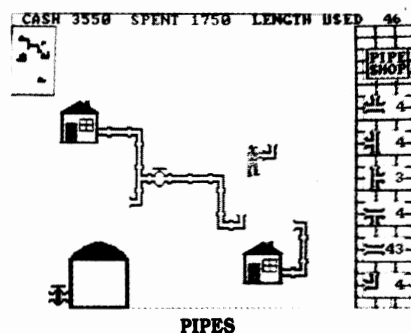
PIPES

to buy the pipes you'll need to connect the houses to the tank. You can select straight pipes, elbow or tee joints, and other shapes. But you have to select carefully, for there are inventory limits on the pipes, and the amount of money you spend is kept as a running total at the top of the screen. You have a budget, and you must not overspend.

If you are a careless engineer, you can very easily get Arlo into jams; if you do, you may have to tear out whole sections of pipe. Such mishaps will cost you more money because you have to return the removed pipe to the factory and are charged a fee.

The more houses there are, the more complicated Arlo's engineering task becomes. You can choose to hook up five houses; if you do, and you play at my pace, you and Arlo may be laying down pipe for two solitary and satisfying hours. There are no whistles, bells, or gongs—just a lot of quiet maneuvering of Old Arlo.

The packaging makes the mistake of not indicating what age range *Pipes* is intended to appeal to, but the potential range seems to be broad indeed. The game is a natural for kids as young as 6. It does offer some experience both in spatial relationships and in handling a budget. And *Pipes* can be fun for adults, too; when five houses are involved in the plumbing exercise, the spatial relationships become very

complicated, and the challenge resembles that of a game of chess. —*I.G.*

EARLY GAMES FOR YOUNG CHILDREN
Springboard Software

Much of educational software's promise is in its ability to give preschoolers a head start on learning before they enter the 9-to-3 school-day world. Springboard Software has made this its specialty, and *Early Games for Young Children* offers an introduction to how such early learning can work.

The program offers nine different games, all of which are all suited to children between the ages of 3 and 6. These programs include matching letters, matching numbers, adding stacks of blocks together, subtracting blocks, counting blocks, identifying the letters in the alphabet, spelling names, comparing shapes, and drawing.

Early Games' drawing program is a toned-down version of *Delta Drawing,* offering straight-angle mapping with 16 different colors. You can store your child's best pictures. However, since there is a limited amount of space available on the disk (approximately 10,000 bytes), it's not advisable to save too many. Since there is no delete function, erasing pictures can be a
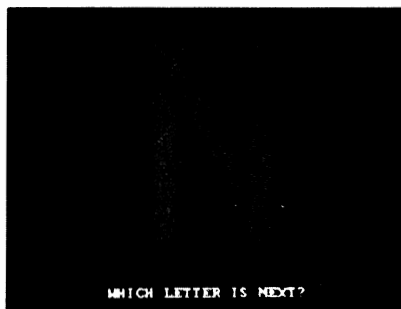
EARLY GAMES FOR YOUNG CHILDREN

problem. The only way we've found to get around that—if you want to save a new picture and get rid of an old one—is to give the new picture the old file name.

Aside from that, the program is outstandingly simple to use. One by one, pictures representing each game are displayed on the screen. Your child merely has to push any key to stop the menu at the desired game, and can exit at any time by pushing the Esc key to return to the picture menu. A menu selection method of this type, alone, makes some of *Early Games'* mundane graphics and instruction

games worthwhile discoveries for young children. —*M.P. and S.S.*

THE GAME SHOW
Advanced Ideas, Inc.

The Game Show takes a tried-and-true daytime television approach to educational instruction. The program assumes the format of a game show similar to "Password," in which one or two players are given clues in order to guess the right answer.

The on-screen graphics portray the game show set-up with an animated moderator placed between the two animated players (named Joe and Mary). The disk comes with a catalog of 24 subjects ranging from animals to nursery rhymes to soap operas to cartoons. The questions cover the range from simple to obscure, but they don't hold up to repeated use like the popular board game "Trivial Pursuit."

But what makes this program so appealing is that you can simply make up your own subject catalogs and clues on separate formatted disks. Hence, the software has important testing and review applications for the classroom and home.

THE GAME SHOW

However, the software is not without its technical faults. The most serious is that the program takes quite a long time to boot. In fact, we thought we had a defective disk until the game show graphics finally kicked in after a few minutes' wait. Another problem is the program's annoying obsession with the Enter key, which must be pushed before, after, and in between the questions.

Meanwhile, the graphics are limited to the three sparsely animated characters (they can move only their mouths and hands). The designers could have learned a thing or two from watching daytime television and studying how the game show professionals interject gongs, bells, and music to put a punch into otherwise mundane question-and-answer formats. —*M.P. and S.S.*

School Supplies

Across The U.S.A.

Stone & Associates/Stone Software Marketing, Inc.
7910 Ivanhoe Ave.
Suite 319
La Jolla, CA 92037
(619) 459-9173
List price: $29.95
Requires: Enhanced PCjr with 128K and disk drive, or equivalent

Adventures in Math

IBM Software
Available at IBM Product Centers and Authorized Dealers
List price: $35
Requires: Enhanced PCjr with 128K and disk drive, or equivalent; Cartridge BASIC

Definition Mania

Facileware
61 Fourwinds Rd.
London, Ontario
Canada N6K 3L1
(519) 473-5812
List price: $39.95
Requires: Enhanced PCjr with 128K and disk drive, or equivalent; DOS 2.1; Cartridge BASIC

Delta Drawing

Spinnaker Software
215 First St.
Cambridge, MA 02142
(617) 868-4700
List price: $49.95
Requires: Enhanced PCjr with 128K and disk drive, or equivalent

Early Games for Young Children

Springboard Software, Inc.
7807 Creekridge Cir.
Minneapolis, MN 55435
(800) 328-1223
List price: $29.95
Requires: Enhanced PCjr with 128K and disk drive, or equivalent

In the Chips

Creative Software
230 Caribbean Dr.
Sunnyvale, CA 94089
(408) 745-1655
List price: $29.95
Requires: Entry-level PCjr

Math Blaster!

Davidson & Associates
6069 Groveoak Pl. #12
Rancho Palos Verdes, CA 90274
(213) 378-7826
List price: $49.95
Requires: Enhanced PCjr with 128K and disk drive, or equivalent; Cartridge BASIC

M-ss-ng L-nks (Young People's Literature Edition)

Sunburst Software
Room M5
39 Washington Ave.
Pleasantville, NY 10570
(800) 431-1934
List price: $49
Requires: Enhanced PCjr with 128K and disk drive, or equivalent; Cartridge BASIC

Pipes

Creative Software
230 Caribbean Dr.
Sunnyvale, CA 94089
(408) 745-1655
List price: $29.95
Requires: Entry-level PCjr

Speed Reader II

Davidson & Associates
6069 Groveoak Pl. #12
Rancho Palos Verde, CA 90274
(213) 378-7826
List price: $69.95
Requires: Enhanced PCjr with 128K and disk drive, or equivalent; Cartridge BASIC

Spellicopter

DesignWare, Inc.
185 Berry St.
Building 3, Suite 158
San Francisco, CA 94107
(800) 572-7767
List price: $39.95
Requires: Enhanced PCjr with 128K and disk drive, or equivalent

Success with Math

CBS Software
% Order Dept.
383 Madison Ave.
New York, NY 10017
(212) 872-2000
List price: $24.95
Requires: Enhanced PCjr with 128K and disk drive, or equivalent

The Game Show

Advanced Ideas, Inc.
1442 Walnut St.
Suite 341
Berkeley, CA 94709
(415) 526-9100
List price: $39.95
Requires: Enhanced PCjr with 128K and disk drive, or equivalent

Typing Instructor

Individual Software, Inc.
1163 Chess Dr., Suite 1
Foster City, CA 94404
(415) 341-6116
List price: $49.95
Requires: Enhanced PCjr with 128K and disk drive, or equivalent; DOS 2.1

A TURBO PASCAL PROCEDURE
JUST FOR THE PCJR

By John Wilson

The normal text screen colors for programs compiled with Version 4.0 of Turbo Pascal are dull white characters on a black background (just like DOS), but it is easy to get a more colorful screen. The Turbo Pascal procedure TextColor will set the characters to any of 16 colors, and the procedure TextBackground will set the screen to any of eight colors (Incidentally, Junior is able to have 16 screen colors, but Turbo Pascal will only recognize the first eight of them.). However, there is no procedure to set the border color, so you always end up with a black edge around your screen.

It's easy to write a routine to use in Turbo Pascal that will make the screen border of an IBM PCjr any of 16 colors. Listing 1 shows two procedures that will do the job. The longer of the two will set the border to a specified color, while the shorter one will always set the border to blue.

You can easily modify the shorter procedure to set the border to any of the 16 colors you desire. These procedures will work only on a PCjr. They won't cause an error if used on a PC, but nothing will happen and the screen border will remain black.

You can use either of these as procedures within a program, but in the long run it would be best to compile them as a Turbo Pascal Unit and then treat them as standard Turbo Pascal procedures. To make them into a unit, just type up Listing 1 as it is shown, set the complier so it will compile to disk, and then compile.

Turbo will recognize it as a unit and compile the procedures with a .TPU extension. As time goes on we'll see if we can add more Junior specific procedures to this unit.

Listing 2 shows examples of how the procedures could be used in a program. Procedure TextBorder takes an integer number, from 0 to 15, as an argument. The relationship of the numbers to color is the same as that shown in the Turbo Pascal manual under the TextColor procedure description. A beneficial quirk in using the procedure TextBorder is that if program you are writing uses the Turbo Pascal CRT unit, then TextBorder will recognize the constants defined in that unit which match color names to numbers. For instance you could specify: TextBorder(Green) instead of: TextBorder(3). This will make your code more understandable. But if you try that without using CRT, you'll get an "Unknown identifier" error message.

Both procedures are based upon a video function in the PCjr BIOS (Basic Input/Output System) that is not present in the PC or XT. Using this function (or any other function in the BIOS) is very mechanical, you just put specified numbers into specified registers of the microprocessor and call the specified interrupt. To set the screen border border color, you must put the number 16 into register AH, 1 into AL and the number of the color into BH, and then invoke interrupt 16. Usually these numbers must be

in the hexadecimal number base, so the numbers you really use are 10, 1, and 10 plus the hexadecimal number of the color. Several recent articles in The Junior Report have explained microprocessor registers and interrupts, but don't worry if you don't understand them. You do not have to understand the details in order to use the BIOS functions.

The trick is to get the numbers into the microprocessor registers and to invoke an interrupt. Fortunately Turbo Pascal provides a way to do this. In fact it provides two ways to do this. The simplest, but least flexible, method is to use the Turbo Pascal INLINE procedure. It is just the identifier INLINE followed by parenthesis enclosing a list of two digit hexadecimal numbers (the dollar symbol shows Turbo Pascal they are hexadecimal) separated by slashes. These numbers are the machine code for the microprocessor instructions. This method is used in the procedure BlueBorder, shown in Listing 1. The comments show what the machine code means in assembly language. Notice that the second hexadecimal number ($01) is the color of the border. If you prefer green, change this to $02; or for red make it $04, etc. The INLINE procedure does not allow you to use variables for the machine code instructions, so you can't easily pass any parameters to a procedure using INLINE. You have to select one color and stick with it, but if you

want a short routine to stick into a program that will set screen border colors, this is the one to use. You wouldn't even have to use it as a procedure. If you left out the comments the entire expression will fit into about one-third of a line and you wouldn't even have to use it as a procedure.

The second method that you can use in Turbo Pascal to get at the BIOS interrupts is with the INTR procedure. This procedure uses a record named Registers which is defined in the DOS unit of Turbo Pascal. You can use this record as a means to place values into specific registers of the microprocessor, and since the record will accept variables you can pass on values to it. Our procedure TextBorder takes a number as an argument and this is placed into the BH register through the variable named Color. Up through the number 9, hexadecimal is the same as decimal so we don't have to convert, but for the numbers 10 through 15 the CASE statement is used to convert the decimal numbers to hexadecimal. Note that any number higher than 15 is converted to zero and thus black will be used for the border color.

LISTING 1

```
unit JUNIOR;  { Some procedures to set colors in an IBM PCjr }

interface
uses DOS;
procedure BlueBorder;
procedure TextBorder(Color : Byte);

implementation

procedure BlueBorder; { Sets the border to a color corresponding to the value in BH. Works only on an IBM PCjr.  } begin
inline(
$B7/$01/        { MOV  BH,01   select blue border color      } $B4/$10/        { MOV  AH,10  select BIOS function
10h (16d) } $B0/$01/          { MOV  AL,01   select sub-function 1       } $CD/$10);       { INT  10    call interrupt
10h (16d)     } end; { BlueBorder }

procedure TextBorder(Color : Byte);
{ Sets the border to the color corresponding to the value passed to the procedure.  Requires the DOS unit.  Works only on an
IBM PCjr       }

var   Reg : Registers;
begin
if Color > 9 then            { convert decimal numbers to hexadecimal } case Color of
10 : Color := $0A;
11 : Color := $0B;
12 : Color := $0C;
13 : Color := $0D;
14 : Color := $0E;
15 : Color := $0F;
else Color := $00;
end; { case }
Reg.BH := Color;
Reg.AL := $01;          { select the screen border color function }
Reg.AH := $10;          { the BIOS function              }
Intr($10,Reg);
end;                    { procedure TextBorder }

end.
```

LISTING 2

```
program   BorderDemo;
{ A Turbo Pascal Version 4.0 program to demonstrate two procedures to set the screen border color    } uses
Junior;      { This unit should be on a disk in the default drive }

var
BdrColor: byte;

begin
BlueBorder;
Write('Type in a number from 2 to 15: ');
ReadLn(BdrColor);
TextBorder(BdrColor);
end.
```

SNEAK PREVIEW OF RACORE'S LANPACjr NETWORK

Dear Harrison,

I thought your readers might like a sneak preview of the flier we're developing for IBM to give its educational sales people to pass out in the schools. Note that there're two versions of page 1.

One of our customers faxed me your Racore info article; thanks for the plug. One correction: the network (LANpac jr) will support 31 (not 15) workstations and a server. Or if a second LANpac 11 card is added to the server we support 62 stations.

The Racore PCjr products are now being sold to consumers by Triton Products Company at 800-227-6900 (open Saturdays); the products offered are the Drive II Plus and 256K or 512K memory upgrades and PC ID cartridges. We have been unable to get keyboard adapter cables in a timely fashion from our supplier in Taiwan and have suspended taking orders for them and for keyboards until we can fill our backlog orders. We're also discontinuing all disk drives. Triton will not carry network cards for the PCjr, XT, AT or microchannel machines, nor will they carry Racore's Turbo 8088 or 80286 based diskless workstations. PCjr users who want to connect their machines to other PC compatibles should contact Racore directly at 408-374-2301.

Feel free to call if you have any questions. I'll look forward to hearing from you.

Seb Hughes

Racore Computer Products,Inc.

Los Gatos, CA.

MAKING A DOS MENU

By Lawrence Matula of The Fox Valley PCjr Association

Some of you have acquired diskettes from the software library that may contain several programs. Wouldn't it be great if you could make the disk self-booting and select the programs from a menu! You probably already know how to copy command.com on the disk and add the autoexec.bat files to configure for your system. But how do you create the menus?

DOS Menus are created by using a series of manually executed batch files. Start by creating the menu screen, as follows:

A>copy con: MENU.TXT (Give it any filename you like)

> (Press the Enter Key enough times to bring the cursor down to the line where you'd like to put your menu title. Then TAB over to the center where you'd like to put your menu title and type it in like this:

GAMES MAIN MENU	(Then press Enter)
————————————	(Tab over and draw line)
	(Enter twice)
1. Game 1	(Type the number & choice)
2. Game 2	(Type the number & choice)
3. Game 3	(Type the number & choice)

Then press the Enter Key enough times to center the menu on the screen where you want it and press the ^z (F6 function Key) to end the file. The MENU.TXT file will now be written onto the diskette.

Important: Whatever filename you've named your menu file must be the last command in your AUTOEXEC.BAT file so the menu is always loaded on screen when you boot your system. For example, your AUTOEXEC.BAT file could be:

A>copy con: AUTOEXEC.BAT	(Create autoexec.bat file)
CONPCJR -P2	(Recognize memory expansion-Tecmar)
MODE 80	(Set display to 80 column)
ECHO OFF	(Inhibit screen display)
CLS	(Clear the screen)
DATE	(Prompt user for date)
TIME	(Prompt user for time)
TYPE MENU.TXT	(Bring up menu on screen)
^ Z	(F6 function key to end the file)

When the AUTOEXEC.BAT file is executed, each command in the file will be executed in sequential order, your menu being put on screen last.

the game disk for those people who want to play Incunabula but don't have the time or the patience to engage in a full blown game. These "mini-games" also serve as excellent rudimentary introductions to the mechanics of Incunabula.

How well does Incunabula fare on the PCjr? Not bad. Not bad at all. In fact, it runs quite well on a standard, single-drive PCjr environment. Unfortunately, Incunabula doesn't fully exploit the PCjr's powerful graphics capabilities. Don't get me wrong, the graphics are pretty good, but in order to maintain compatibility with the PC, only four colors are displayed at a time. To be fair, this isn't really a serious limitation since most of the program's graphics are topographical map screens of Zammulor's mountains, seas, plains, and deserts. Besides, the program allows the players to select the color palettes they want to use at the start of every game, so there is some variation. As previously mentioned, Incunabula has sound effects, but to remain as PC compatible as possible, the program bypasses the PCjr's special sound hardware in favor of its system timer (which is the only way for other IBM computers to produce sound). But again, I don't see this as a serious flaw. The program's sound effects are more than adequate for a game of this genre. With all of the hype these days about PC/PCjr software incompatibility, we should be thankful that a program of this caliber runs on the PCjr. We're all too quick to judge a game program by its looks alone, instead we should

concern ourselves more with the quality and concepts behind it.

Before departing, there is one more thing I feel I should mention about the game's operation - it's slow. You see, Incunabula was written with IBM's Basic Compiler, a Compiler widely known for its inefficiency and extremely large file generation. Because of this, Incunabula and its modules are too large to fit entirely into the PCjr's memory, so portions of the program must be accessed from the game disk every few minutes. Although this can be an annoying characteristic of an otherwise great program, there is a solution - a RAM disk. If you have at least 512 KB of memory in your machine, you can copy Incunabula's files to RAM for a lightening fast response. A simple COPY A: *.* C: command entered from DOS should do the trick. If you haven't got the memory, you'll eventually learn to live with this inconvenience. Incidentally, my copy of Incunabula was an early release of the program that I purchased back in the Spring of 1985. So I wouldn't be surprised if Avalon Hill has made a revision or two since then. This might be something worth looking into before ordering the game.

All told, Incunabula is an terrific piece of software. While it may not take full advantage of the PCjr's special features, Incunabula will quickly earn a place for itself on your software shelf. Long after other programs are gathering cobwebs and dust, you'll still be playing Incunabula. If you ever wanted to be king for just one day or see how far civilization has progressed

*I*f you ever want-ed to be king for just one day or see how far civilization has progressed in the last 5,000 years, then this one's for you.

in the last 5,000 years, then this one's for you. But whatever your reasons are for playing, be forewarned: Incunabula is an addictive as it is challenging. I once played a marathon of a game with my friends that lasted over 11 hours! By which time, my PCjr was practically smoking and I was so exhausted that not even my favorite album "Punks not dead" could manage to keep me awake as it did my neighbors.

Incunubula

The Avalon Hill Game Co.
Microcomputer Games Division
4517 Hartford Rd.
Baltimore, MD 21214

Price: $30.00

Requires: 128K PCjr, RGB display

GETTING MORE THAN 128K WITH SELF-BOOTING DISKS

We first heard about Ed Strauss when he developed the first INTERNAL memory expansion board for the PCjr called the jrHotShot. Since then, the jrHotShot has been the memory expansion system of choice for PCjr owners (must have unsocketted 8088 microprocessing chip under disk drive). Ed's ES Quality Products, 767-B Redwood Place, Reno, NV 89502, (702) 786-4040, continues to be one of the great companies still developing PCjr products that will extend the life of the PCjr as a vital machine.

His newest product, a new utility found on his jrHotShot software version 3.2 called BOOTGAME.EXE solves one of the age-old problems facing the PCjr owner. The problem is having the jr recognize expanded memory with self-booting programs. This new program allows you to start and run game disks that are self-booting, yet require greater than 128K of memory.

Though the program is found on the jrHotShot utility disk, it reportedly will work with any expanded memory by any board. For those without jrHotShot boards, you can purchase the utility for $10. by writing to ES Quality Products. We have not tested the program yet, but hope to do so by our next issue.

To use the program, you would boot up your computer with DOS using the jrHOT-SHOT "fast" configuration so as to make your PCjr aware of the memory beyond 128K. (Or, you can also use any other memory software that lets the PCjr recognize memory beyond 128K, such as the software from IBM, Microsoft, Tecmar, etc.)

Then, to activate the self-booting disk that requires memory beyond 128K, type BOOTGAME in response to the DOS prompt. BOOT-GAME will display some directions, asking you to insert the game disk into tha A: drive. When you have done so, press any key to activate the self-booting disk (e.g. the game disk).

If you don't have a game

A>BOOTGAME
jrHOTSHOT Utility for Starting Self-Booting
   Disks, Especially Game Disks Requiring
      Greater Than 128K Memory
   Version 3.2 (C) ES Quality Products Inc 1988

Note: This program is specifically intended for the starting of self-booting disks. This is not a full substitute for normal re-booting of the computer. Normal re-booting occurs with the Ctrl-Alt-Del key combination as usual.

DIRECTIONS: PLEASE INSERT THE SELF-BOOTING DISK (SUCH AS A SELF-BOOTING GAME DISK) AND THEN PRESS ANY KEY TO START THE DISK. IF YOUR PCjr IS CURRENTLY AWARE OF THE MEMORY BEYOND 128K, THE DISK YOU ACTIVATE WILL ALSO BE ABLE TO RECOGNIZE AND USE THE MEMORY BEYOND 128K.

What the screen will look like with BOOTGAME.EXE

disk when you try BOOT-GAME, just put your DOS into the drive, and press any key to re-boot the DOS disk.

Ed goes on to instruct and warn the user to make sure he runs BOOTGAME from a clean DOS environment such as the "fast" configuration,without ramdisks, with-out other device drivers (except the memory driver fast.sys and clock driver readclk.sys are O.K.), and ;without memory-resident programs. Device drivers and memory-residents pro-grams often alter one or several interrupt vectors in memory, resulting in error

(s) upon booting the game,] The screen on the previous page shows the appearance of BOOTGAME on the screen when you run BOOTGAME from the DOS A> prompt:.

A WARNING

This is more of a helpful note from Ed Strauss than a warning to many of the jrHotShot owners who currently have 256K on board and are now thinking of plugging in eight more 256K chips into the available sockets for a full board.

Remember, as mentioned in the jrHOTSHOT instruction manual, (page 17, top), the memory chips you install must be a brand of 256K DRAM that supports "CAS-before-RAS refresh," because the jrHOTSHOT performs CAS-before-RAS refresh cycles. (Refresh cycles ensure the retention of memory data, so that data doesn't gradually fade away).

Therefore, the following brands of 256K memory ARE recommended for the jrHOTSHOT board because these brands support CAS-before-RAS refresh. Notice that these brands cover the big volume suppliers of memory chips.

Texas Instruments	TMS4256
Hitachi	HM50256
Samsung	KM41256 or KM41256A.
Intel	(this is really the Samsung chip above).
Fujitsu	
Mitsubishi	
Toshiba	41256A (must have the A suffix).
NEC	41256 (must be 1987 date codes or more recent).

DON'T use the following 256K brands because, to the knowledge and experience of ES Quality Products, these brands don't support CAS-before-RAS refresh. (Please notify ES Quality Products if you know otherwise). No harm will occur if you do use the following brands, but the PCjr with jrHOTSHOT simply will not work correctly, or it might not give an initial IBM logo on the monitor.

Toshiba	41256 (the non-A version).
Motorola	(this is really the Toshiba chip above).
OKI	
Micron Technology	MT
Western Electric	WE
Seimens	
NEC	(1986 date codes or earlier).

PCjr Classified Section

IBM PCjr 128K, single drive, color monitor, IBM compact printer, Jr keyboard, BASIC cartridge, PCjr Sampler, Guide to Operations, one roll printer paper, all original manuals and documentation. $600. or best offer.
Chuck Larson
10348 Yates Lane NW
Bremerton, WA 98312
(206) 830-4861 after 6 PM weekdays or anytime weekends.
(206) 830-0153 for messages.

IBM PCjr 128K, PCjr color monitor, one disk drive, parallel port, V-20 chip, enhanced keyboard, Guide to Operations Manual, WordStar for the PCjr, Friendly Ware PC Introductory Set. All Excellent+ in operation and condition. $395, UPS paid.
William Shimonkevitz
8927 Park Forest Drive
Springfield, VA 22152
(703) 451-1751

IBM Parallel Printer Attachment with instructions $40., IBM Diskette Drive Adapter and Signal Cable with instructions $25.
Jim Crowther
7504 Bear Canyon Road, NE
Albuquerque, NM 87109
(505) 821-0172

DESERATELY SEEKING
IBM's Writing To read Program

to send to missionary friends overseas who are teaching their children at home. I already have the speech attachment, now what I need is the program!
Kathleen C. Jaeger
712 Sedgefield Dr.
Newport News, VA 23605
(804) 595-5764

PCjr Parallel Printer Attachment New, never opened, $25. Lotus 1-2-3 w/driver for the jr version 1A $100., Easy Writer version 1.1 $25., PFS Plan $30., Hayes Smartcom II $35. Jumpman, Zyll, PC Pool Challenge, Touchdown Football, $12. for all. IBM Personal Communications Manager version 1.0 $15., IBM Writing Assistant version 1.01 $15., Sidekick version 1.5 $20., Turbo Lightning $20., DOS 1.1 $10., All original w/ manuals. Hayes Smartmodem 1200 $165.
Dick Wendelburg
1335 Vernon North Drive
Dunwoody, GA 30338
(404) 393-9916

IBM PCjr 512K, Quadram expansion, 2 drives, jr Color monitor, internal modem, mouse, joysticks, manuals, and more...$750.
Steve Brown
1465 N.W. 178th Place
Beaverton, OR 97006
(503) 645-8727

AMDEK ORANGE MONITOR $60., IBM Thermal Printer $45.
Charles Ellmers
9690 Glenstone Dr.
Kirtland, OH 44094
(216) 256-3091

WANTED: 1 USED PCJR W/ WILSON-JONES Color monitor, 640K, 2 dr., w/ Racore enhancement, 1 color graphics adapter, 1 ramdisk software, 1 book on mastering Symphony, 1 book on mastering Lotus 1-2-3.
John Veltre
P.O. Box 982
Cartersville, GA 30120
(404) 382-3841

128K PCjr, SINGLE DRIVE, parallel port, color monitor, dust cover, Filing and Writing Assistant, software manuals, other software. Excellent condition. $500. or best offer.
Brenda Royce
263A West 19th St. #915
New York, NY 10011
(212) 677-3918

PCJR SPEECH ATTACHMENT
Box never opened. Basic speech program and manual. $75. includes shipping charges.
Gordy Goetzman
1414 2nd St. SE
Rochester, MN 55904
(507) 281-5167

ndividual batch files which match the numbers or letters you've set-
example, we must create a batch file called 1.BAT in order to exe-
1; and 2.BAT to execute choice #2; and 3.BAT for choice #3. (If
than numbers to list menu choices, the batch file filenames must
e.g. A.BAT, B.BAT, C.BAT, ETC.)

must contain all the commands necessary to execute the desired pro-
irn you to the main menu after you exit the program. For example:

T	(Create batch file 1)
iS. EXE	(Execute program filename)
MENU.TXT	(Return to main menu)
	(End of batch file)
T	(Create batch file 2)
	(Executable batch file
	enter game 2)
E MENU.TXT	(Return to main menu)
	(End of batch file)
T	(Create batch file 3)
ICA	(Loads basic program)
D "Checkers,R	(Loads basic checkers program from
	disk and runs checkers program)
E MENU.TXT	(Return to main menu)
	(End of batch file)

ning: When you boot up your system, the last command in your
e (TYPE MENU.TXT) puts your custom menu on the screen. You
er or letter of your choice and hit the Enter key. If you hit "1", you
the 1.BAT batch file (choice 2 would execute 2.BAT batch file).
is then executed. It loads the CHESS. EXE program. When you
am, the second command of the 1.BAT batch file is executed. You
iu.

d only by your creativity and the available disk space to hold all the
e fun!

les, newsletter of the Fox Valley PCjr Assoc. Newsletter, August
10]

Revenge......

normally spend at least two days at the three-day event, but the lack of excitement forced the show into a one-day outing. I was disappointed.

As previously mentioned, the trend for the computer section is to become smaller and smaller, with less emphasis on hardware than on software. Only clone manufacturers Franklin, Vendex (of Headstart and King Kong Bundy fame), and Laser chose to buy floor space to exhibit their products. But the software manufacturers were there, albeit in smaller numbers, and it was to these people we as PCjr enthusiasts directed our attention. Most acknowledged that they sincerely have made an attempt to produce PCjr-compatible software, but these were salespeople and not developers, so we didn't let that get to our heads. A Microprose spokesman said that as far as he knew, every tiltle from that company was PCjr-compatible. Sure. As with all companies we talked to, we tried to stress that with 500,000 PCjr's in use, making PCjr-compatible made sense from a financial standpoint, let alone from a moral one. We saw very few new titles being offered by the manufacturers, and we knew which ones would and would not run on the PCjr. It was not a show of great support or of great revelation for the PCjr. But do not despair, for discriminated against we are not.

If it seems that the show was on a down note for junior owners, you're right - sort of. You see, the show really demonstrated a trend that affects all PC owners and not just the junior owners. Almost half the computer floor space was dominated by a phenomena that I thought was not possible. The phenomena of which I speak is no other than the video game craze spelled NINTENDO, a dedicated video game craze that has literally swept the American market. Software publishers were blazenly pushing their Nintendo cartridges over their PC-compatible counterparts. Yep, that was King's Quest on Nintendo. How about Robocop or Rampage on your Sony screen? I can't really blame the software people, since Nintendo has sold over two million game units in two years, leaving both Atari and Sega in its dust, and maybe the PC-compatible arcade software games as well. It has accomplished this feat by selling the main console unit for under a $100. (two games included) and practically "giving the razor away to sell the blades." And since the monitor is your good, old color composite TV, there is no worry about PCjr 16-color, CGA, or EGA graphics. And if anyone has seen this next generation in video games, they will say the graphics are outstanding.

So where does that leave the Junior owner? Not in a particularly bad position. The PCjr is foremost a reliable productivity tool that can run eight out of the Top Ten

Editor's Notes......

value of $275. and a discount value for an AT of $550. Laughing yet? Well, (let's hear the drum rolls) the discount value for a PCjr is $100. plus $60. for your color monitor. If you're interested, contact your local IBM dealer, after the laughter has died down.

I'm always amazed at what products or ideas make it in the business or marketing world. Does women's underwear that has the days of the week printed on it really sell? A better question is do some women really need a Wednesday panty to change on a Wednesday? Well, if it sells, it sells. But how about this summer project for your teenage son or daughter with your Junior and a good printer - set up a short story in the form of a form letter (that is, write the text with certain variables like *Name*, *gender*, *birthday*, *best friend*, etc., to be filled in with various paying customers' data. It could be one of those "What famous events happened on your birthday for the last fifty years" type thing, or even a cute short story that would be personalized for a child. You could go to a mall and use fancy paper for a personalized Events sheet, or use smaller sheets for a short story.

Still, I can't get over the Days-of-the-week underwear as a marketable product. Then again, I've had male roommates that should have had underwear with January, February, March, etc., stamped on his underwear judging his frequency of change. Thank God, they don't make guy's underwear with 1987, 1988, and 1989 on them, or we would all be in trouble.

---

business software programs. It was not meant to be a game computer per se. Certainly Wizardry, Infocom, and other "thinking" programs are safe from this Nintendo mania, but other eye-hand coordination type of software or arcade-like games are in jeopardy. Complex programs like Flight Simulator are also safe on your PCjr. But the days where your six year-old wants to become the Ninja supreme warrior on your Junior may be numbered. In other words, there may not have to be the family fight to either use the junior to control your finances through Managing Your Money or to solve another riddle in King's Quest. Or finish that great American novel with WordPerfect or to zap alien warships. Or access a database on Compuserve or to land your F-11 onto a Navy flight deck. The Nintendo presence is here to stay, but it works ideally to place the PCjr back into the niche it most comfortably fills - that of the little computer that can do big things for the home, office, and education. You can use your PCjr for productivity, and leave the "driving", or racing, or shooting to Nintendo.

EYE ON SHAREWARE

By D. Glanville

We like to keep our disks updated so when a new version comes out we can keep our members current. So we're happy to offer the newest version of disk **#82 JRCONFIG.SYS (2.13).** It is probably the one disk that every junior owner who has or is considering adding memory to his computer, should have. The latest version of JRCONFIG.SYS has even more great features. You can boot your screen color, disable color for monochrome monitors, read a battery backed clock and set the time in DOS. **LOWRD.SYS** is a device driver that will access the ramdisk allocated by **JRCONFIG.NRD, STATLIN.COM** will display a status line on line 26 of your display. This is a fantastic program made even more useful. **PKXARC** on the same disk is a June 1988 version. (3.6)

Now for our new disks!

MEAN 18 COURSE DISKS #128 and #129:
There was so much interest in disks #118 and #119 that we found two more course disks for you. These disks are meant to be used with Accolade's MEAN 18. Disk #128 has Pebble Beach, Banff and Sanddune courses. Disk #129 has Augusta, Waterloo and Walden courses. Now if they only had a nineteenth hole.....

DOMINO #130:
At Mack's Domino Parlor, you have a choice of nickel, dime or quarter games (Levels 0,1,2). There is also a game for high rollers in the back room, but it is by invitation only. To be invited you have to win a nickel, dime or quarter game by a big margin. The back room characters are unsavory to

say the least, and you probably wouldn't want to go there more than once or twice even when invited.

I've always wondered what people did with dominoes. When I was a kid we used to build things with them. Kind of a pre- Lego toy. This disk not only has a nice Domino game, it has documentation to show you how to play it. You can set your own colors too.

MY FAVORITE UTILITIES #131:
Computer utility programs are the programs the smart guys write, so people like us can really enjoy our computers. This disk has some of my favorite programs on it, and I feel this is a must buy for all PCjr owners.
SMALLDOC takes any text file and reformats it, paginates it and compresses it so it can fit into an IBM sized binder. The pages are marked with cut lines and punch indicators. You can print your file on regular paper and cut it down to IBM binder size. It's great for keeping all your doc files in binders and you don't have to worry about text being printed on the perforation. **256k·req**
LIST by Vernon Buerg is probably the most used utility around. With LIST you can read your text files without printing them out. Simply typing LIST XXXX.DOC or LIST B:READ.ME lets you browse at your own pace. Version 62a lets you change colors, search for text and print to your printers as you scroll the text.
ADJRAM.EXE is a RAM disk program. ADJRAM allows you to vary the size of your RAM disk without rebooting and without loss of any of the data stored in the RAM disk. You can start out with 64K of your memory al-

located for the RAM disk, expand it later to 320K, copy a document file of 60K to the RAM disk, and still later reduce the RAM disk capacity back down to 128K --without losing your document file. 640K req
COVER.COM prints out a disk cover with a small list of all the programs on the disk.
VOLSER.COM puts a volume title or number on your diskette.
FLU-SHOT is some help against the dreaded disk virus. Like any vaccine, the program works best against a specific problem and no vaccine is 100% effective. We can't guarantee that this one is either but it's worth a try.

Computers have idiosyncrasies, even PCjrs. I don't know why Accolade's Test Drive will work on everyone's JR but mine, now I find some of our Shareware is just as choosy. A few months ago I told you that disk #113 PIRATE had some of the best graphics I'd seen on any shareware or public domain disk. I still think the graphics are great, but it seems that some of the people who sent for PIRATE cannot get any of PIRATE'S graphics on their JRs. Disk #111, The*Menu will also run on some JRs and not on others. I have decided not to offer numbers 111 and 113 anymore.

Let me add that if any of you get a disk that will not work and if you have read the paper we insert in your order and it still doesn't work, return the disk and I will replace it with another disk or refund your money. Remember to put your name on all correspondence. Sometimes letters get separated from envelopes and I get a complaint but don't know where to send an answer.

NOTES FOR THE NEW SHAREWARE AND PUBLIC DOMAIN USER

If you are a novice in the computer or PCjr world, a Shareware or Public Domain program may be worthless to you unless you have some basic knowledge about files, their extensions and what to do with them. Some helpful notes follow:

1. These software programs are generally not self-booting like commercial disks.

2. Always make backups first. Instructions are in your PCjr manual. Place the master in a safe place.

3. Put your backup in the disk drive and type DIR/P at A>. This will scroll all of the files and their extensions on the screen. 4. In the DIR listing look for any files that contain extensions such as XXXX.DOC or XXXXX.TXT where the X's represent various file name on the diskette. These .DOC and .TXT or .TX extensions identify documentation and text files, respectively. Especially important are those marked README.TX or simple README. Those should be read first. Typing TYPE XXXXX.DOC or TYPE READ.ME at the A> will allow you to read this file (hitting the Ctrl key and the S key simultaneously will stop the scrolling. Ctrl-PrtSc acts as a toggle to start or stop printing the documentation on the screen, provided your printer is connected and on. Another method is to type COPY XXXXXX.DOC PRN: where again you must replace the X's with the correct file name.

5. Look especially hard for files with the extensions .EXE or.COM because these programs can usually be executed by simply typing the filename, minus the extension. For example, the program WPK.EXE can be started by typing and entering the command WPK.

6. Programs or files ending in .BAS are written in the BASIC Language and require you to have your BASIC cartridge in the slot below the disk drive in order to execute the programs. Without going in deeply into BASIC programming, a program such as XXXXX. BAS can be executed by typing BASICA XXXX. A more thorough explanation can be found in your manual.

7. The benefits of registration are many. If you find any of the programs useful, we hope that you will become a registered user. This requires a small contribution that is one time only (and is paid directly to the author) depending on the author you may receive other benefits such as technical support, a printed manual and future updates.

8. In trying our best to produce high quality disks, we will replace them within 30 days if they prove to be:

a. Defective

b. Wrong disk was shipped

c. Mislabeled

d. Blank disk, or incompatibility problem.

e. Please let us know if we omitted a disk from your order.

These programs are provided as a service to the readers of THE JUNIOR REPORT. Shareware allows you to try out the programs before buying them. Please direct any questions about the programs to the authors that are indicated in the documentation. We make no warranty concerning the function or fitness of any program, and shall have no liability or responsibility, loss, or damage directly or indirectly arising out of the use of the disk and the programs contained on the disk, including, but not limited to, any loss of business or other incidental or consequential damages.

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

- -

Please circle one or more below

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Number of program disks wanted: _____*times $5.90 =* _____

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Total enclosed : _____

Check here if this order has six programs or more for FREE library case _____

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orget the new programs on page 57!!

'am that has set the standard for shareware programs. Con-
ion 4.

r better than most word processors on the market. This is
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communications programs.

ial manager.

cessor, an intermediate math program, and a colorful counting

ilable in shareware. **Requires 256K.**

ungeons & Dragons, & Global THermNuclear War.

vironment.

ig programs, and the classic Flashcards.

a variety of uses. **Requires 256K.**

e, and Hostages.

dot matrix into a lean, mean, quality text producing print-
IBM compatible printer.

nications program, allows easy access to BBS's.

good business manager for the small and home business.

eed. A business neccesity. **Requires 256K.**

riting skills by analyzing your writing style. Easy to use, it
able and stylish.

those offered commercially. Income tax computations, cal-
ng your checkbook are just some of the chores this program

s one heck of a DOS utility, that includes multi-tasking abil-

rm clock, phone book, calendar, notepad, and printer

thers.

rd.

Golf?

ame that will make you swear you're in a real arcade. Also
like) **Requires 256K.**

at for you to see if you are related to the Czar of Russia.

s six catagories from which to choose, or write your own
uires either **RAMDISK or 2 drives.**

in a powerful collection of programs that will allow you
nd of your PCjr disk drive controller circuitry.

y the household manager, club treasurer, small business, and

t spooler, two text editors, and a program that can create
rite 2.55, and others.

naintains recipe information, and allows you to display, up-
nd ELIZA, the "artificial intelligent" companion.

AT TUNE! For up to six players.

blic Domain communications software. Powerful and easy-
quires **192K. TWO DISKS - $10.00.**

e Craps that includes its own tutorial, three text adventure
eryone busy.

disk, this program lets you play and see music simultane-

late and print golf stroke handicap information for up to 75

IBM Graphics printer to print a variety of fonts that includes
special characters.

is to mingle with houseguests, search the house, and solve

the crime. Every game is different. If you like the game of CL

SAN MATEO EDUCATION (#62): Educational games for ch
chemist, and many more.

BUTTON GAMES (#63): Includes Buttonware educational and
investigator for the Federal Geographical Magazine and you hav
America. Your travels will take you from one end of the contine
rine), and CASTAWAY (You are shipwrecked in the Pacific, slov
you find countless treasures, but they are worthless if you cann

PC WRITE 2.7 (#64): Newest version of best selling Public
256K.   Two disks $10.00.

THE DESIGNER (#65): a fantastic programming tool for BA
can draw on the screen in color, store your work in either "scre

MR. LABEL (#66): many business and home uses - can crea
lopes, letterheads, price tags, ID badges, file folder labels, nam
print information from databases such as PC-File and dBase II

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

SIDEWRITER (#69): Prints text files sideways. A must for s

DUNGEONS AND DRAGONS (#70): The most popular of al
fantastic is fact and magic really works.

BEYOND THE TITANIC (#71): Enthusiasts of Infocom's fan
Planetfall.

JAPANESE (#74): An introduction to this fascinating languag

PC-FILE+ (#75): Power-pack update for the most popular s

PINBALL II (#76): For all pinball wizards and non-wizards.

MAHJONG (#77): One of the most popular games in the wor
mentation for the beginner. Color only for Racore owners.

AMY'S FIRST PRIMER - PCjr Version (#78): This is pro
Shareware for the pre-school. Includes sing-a-long alphabet, let
ors are spectacular.

ORIGAMI (#79): Brings the ancient art of paper folding to y

BIBLEQ (#80): Bible trivia covers a wide range of topics su

JRCONFIG.SYS (#82): Updated version of JrCONFIG.SYS &
ers. The most powerful and flexible software for getting a PCjr
of special PCjr features is too lengthy to print here.

1-2-3 WORKSHEETS (#83): Among others, loan amortizatio
2-3

WORLD STATISTICS (#84): Simple, menu-driven database o

PHRAZE CRAZE (#85): Like Wheel of Fortune gameshow, ea

EXTRA SENSORY PERCEPTION (#87): Tests your ESP qu
or your friends. This disk also contains a couple of versions of

PC-DOS HELP (#88): Good instruction and provides an on-li
and the selected command for doing something. Two level exp
of DOS. Special attention is given to the PCjr owner.

MAKE MY DAY (#89): A complete, computerized time mana
calendar, a job scheduler, a time log, and an expense account m

MEALMATE and others (#90): Mealmate is a planning aid f
trolled diet. Mealmate is the indispensable guide for anyone pre

MATH TUTOR (#92): This elementary grade level tutorial sup
and can be redesigned for special problems. It is fun and easy.

FOOTBALL POOL MANAGER (94): written by fellow PCjr
all of the tedious work that is involved with running a football
summary spreadsheets showing everyone's picks, and standings

GALAXY (#95): powerful, easy-to-use word processor with pul

AS EASY AS (#96): Called the LOTUS 1-2-3 of the sharewar
mercial cousin. One of the best-selling shareware programs.

MOVIES ON LINE (#97): user-friendly movie cataloging pro

FILE EXPRESS (#98): reviewed in the November issue, this
menu format, mailing features, and report generator has made

floppy plus a ramdisk. **TWO DISK SET - $10.00.**

PCjr PATCHES (#99): Must have disk for all PCjr programmers. Contains fixes that will allow you to run Turbo BASIC, DoubleDOS(early versions), QuickBASIC 3.0, and Turbo C on the PCjr. As an extra bonus, there is a fix to run Chuck Yeager's very hot selling program **Advanced Flight Trainer** on the PCjr.

A86 Assembler 3.07 and D86 Debugger 2.24 (#100): Both of these famous programs come on this diskette. Written by Eric Issacson, A86 is a full-featured, fast assembler and D86 is a full screen debugger with powerful commands and features.

GAMES (#101): two great new games: SKYRUNNER, a challenging arcade game with impressive graphics, and MONOPOLY, a new version which allows full viewing of the game board, good color, and better game play.

BUTTON GAMES 2 (#103): BUTTON GAMES #1 are text adventure games designed for those who don't have much experience with this type of game. BUTTON GAMES #2 are a little more advanced. In NEBULA, you are a NASA explorer sent to investigate a newly discovered star system. In DARK CONTINENT you find yourself in Africa looking for King Solomon's Diamond. On the third day you awake to find your native bearers have deserted you and taken all your money and supplies. Will you make it?

CITY DESK (#104): If you always wanted to be a publisher try this Shareware publication program. Automatic indexing, merged text files, headers and footers, includes Banner headlines and Layout options.

GAMES (#105): Some really fun graphics on this disk include Aquarium (if you are tired of looking at an blank monitor you can turn it into an aquarium and watch the fish swim around), EYE if you'd like to have your computer look back at you, YAHT a colorful game of Yahtzee, Wizard is similar to Rogue and is addicting, MILLEBNS is a solitaire game of Millebournes.

BAKER'S DOZEN (#106): Fourteen of Jim Button's best utilities. BTTNCALC is a one page spread-sheet. CALENDAR a programmable date calendar, DISKUTIL with many HELP screens you can change files or directories-restore lost files-patch files and much more, FILECOMP compare two ASCII text files, GKEY provides all keyboard information, LOCATE find any file on disk or in which file(s) given string occurs, PRO90 prints files at 90 degrees, PC_SORT sort files with up to four fields, PRN-FILE redirects all information normally sent to your printer to a disk file of your choice,RDIR remove subdirectory including all files and children directories, SNAPSHOT take pictures of any 80 column screen (not graphics) in any program, SWCOM12 switch RS-232 ports for COM1 and COM2, SWLPT12 switch printer ports for LPT1 and LPT2. Some of these utilities require 256K of PCjr memory.

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

XWORD (#108): A crossword puzzle maker program. XWORD will enter your words, prompt you for clues and print out the completed puzzle, clues and solution. This is a great program for those who like to have puzzles that use special word lists (religious words, spelling words, family names etc). The printout looks very professional. Highly recommended. **Requires 256K.**

WORLDX (#109): This dandy little program will locate and print out maps of countries, states, cities and capitals from the whole globe. Just choose country, state or city you want to see then choose the map scale. Another option is POINTER. A mercator type projection of the world is displayed with a pointer located in the Atlantic Ocean. Use your cursor or number keys to position the cursor at the location you desire to examine. As the cursor moves its latitude and longitude will be indicated. When it is near where you want it, hit the enter key and the cursor will become the center of an expanded view. You can now reposition the cursor and expand again by hitting enter. Including the full world map you have five expansions. After a few expansions the names and locations of visible cities will be plotted. This program is not just instructional - it's fun! **Requires 300K.**

THE GAMBLER (#110): Three different programs to help you choose your lottery numbers and a BINGO game. PLOTTO by member C. A. Bates, not only makes selections, it tells you which selection the program feels has a better chance of winning. When you've made your choice you can have PLOTTO print it. If the lottery doesn't appeal to you try BINGO. This program will print out Bingo cards, then choose the BINGO numbers. A nice program for Bingo addicts. All's that missing is the parish, the shouting, and the prizes. Well, you can't have everything.

BRIDGE PAL (#112): A bridge game with instructions. There are three ways to play BridgePal. SOLO bridge is for one player. The SOLO game is the only one that lets you replay the hand, if you wish. TWO PLAYER bridge provides scoring for two people, who take turns playing random hands. Similarly, DUPLICATE scores for two, but deals the same sets of hands to both players. If you want help with your game, HELP is also available. Just push "H" and the computer will make your bid for you. Are you sure this is how Omar Shariff started?

AMPLE NOTICE (#114): An appointments calendar program. Appointments can automatically set up a 'pop-up alarm clock'. The disk also has alarm clock program and a utility which prints addresses sideways so that envelopes can be addressed from a standard dot matrix printer.

DMAIL (#115): A professional mailing list system that can create any number of lists, limited only by disk space. You can sort addresses on any of nine sort keys, copy selected addresses from one list to another, target your mail by city, zip code, area code, key word, etc. A powerful program. **512k required.**

ENCHANTED CASTLE (#116): Your adventure begins at midnight in the center of a medieval castle. You will search for the Star Diamond and escape with the handsome (beautiful) prince(ess). The Enchanted Castle is full of traps and dangers! The castle consists of over one hundred rooms and escape will require many hours of play. **256k required.**

THE NEWEST IN THE SHAREWARE LIBRARY

HAPPY GAMES (#117): Four great educational games for the very young.   The first three are an excellent aid to pattern perception for young children and WIGGLEWORM is a nice arcade style game for one or two children.. I highly recommend this disk. **Joystick required.**

MEAN 18 COURSE DISKS (#118) and (#119): Our first two offerings this month are meant to be used with ACCOLADE'S best-selling "MEAN 18" golf game. Each of these disks has three courses. Disk 118 has Eagle River, Bay Tree and Palmer courses. Disk 119 has Firestone, Bear Creek and Desert Inn Country Club courses. Those of you who have MEAN 18 will want to have these extra challenges; those who don't have MEAN 18 are missing a lot of fun.

BY THE NUMBERS (#120): A numerology program guaranteed to entertain even the skeptics among us. You can find your lucky numbers, your lucky colors and your destiny. We know this is all hogwash (isn't it?) but its still fun to read. After all it did say I was versatile, quick-minded and courageous, all of which is true. Of course it also said I might be irresponsible and and vulgar, but then no program can be right all the time. **384k required.**

TYPING ASSISTANT (#121): If you want to learn to type or if you can type but need to increase your speed, this is the program for you. This program was designed to help the beginning touch typist and to help experienced typists sharpen their skills. Written by a fellow PCjuniorite, so give it a try!

BOWLING LEAGUE SECRETARY (#122): So many of you requested a bowling program similar to our GOLF HANDICAPPER that we found this disk just for you. Spare yourself all the work.   This system can handle 18 teams, up to 5 bowlers per team, and up to a 50 week season. Programs are provided to enter scores, print standings (weekly), prepare Book average listings, final team/bowler standings, and either display or print individual team/bowler record sheets. See you at the fifth frame.

ABC FUN KEYS (#123): This program was written with imagination and aimed at children aged two to five. There are four programs intended to help you teach your child letter recognition and to encourage him to pick out, from your computer keyboard, the letter showing on the screen.   You have a choice of speed ranging from a slow browsing pace to a rapid flash-card mode. The color graphics are attractive and will be enjoyed by the very young child.

FAST FOOD (#124): Even though more Americans than ever are watching their calories, sodium and cholesterol, fast food restaurants are springing up all over the country. We all use them. This disk lists the nutritional values of the menu items of fifteen of the most popular chains in the country. (E.g. a Big Mac has 570 calories-979 mgs. sodium and 83 mgs. cholesterol. A Dairy Queen banana split has 540 calories 150 mgs sodium and 30 mgs cholesterol.   This disk will tell you all that and much more about each item.) **256k req.**

SPANISH FOR TRAVELLERS (#125): Learning a language from a computer has its drawbacks, i.e., pronunciation for instance. The author of this program suggests an audio tape to learn the best accent. Even without an audio tape, you will find this disk a real help if you are planning a trip south of the border this summer. The program consists of eight formal lessons with a few tests and quizzes thrown in, and an additional phrase/verb menu.   **256k required.**

ASTROLOGY (#126): A full-featured astrology program for those of you who want to cast their horoscope. This program will help you calculate your chart and print out the results. Charts can be displayed in either graphic or cartwheel form. I don't know anything about astrology but many people who do follow the stars find this a useful program. This program **requires 256k** and two disk drives but it can be used with 640k using a RAM disk.

FORM LETTERS (#127): One hundred different forms and form letters for personal and business use. You will find a thank-you note, an absentee record, a demand for payment, a request for a refund, a letter of resignation and even a nasty letter cancelling an order placed with a pushy door-to-door salesman. All these letters are saved in ASCII form and can be imported to your word-processor. You can fill in the spaces or tailor the letters to your exact needs.

THE PCJR CLUB
1121 Tower Road
Schaumburg, IL 60193