

Fixing My "New" PCjr by John M. King

Recently I purchased enough parts to put together a second PCjr. This is now my machine for group meetings and shows and for hardware experimentation.

It started with a scrapped PCjr without keyboard, monitor, or disk drive that I found at a swapmeet. The controller card and mounting hardware for the drive were still present, so I bought a new Fujitsu drive and installed it. The computer booted up off the new drive without a hitch.

The keyboard and cord came from my first PCjr since I have upgraded that machine to a standard-size keyboard. I added a used Impulse 100 sidecar which brought the RAM memory up to 640K and provided a clock and printer port. Finally, a member of our group sold me the color monitor from his PCjr which had died of a defective motherboard.

This article was originally written for and published in The Newsletter of The San Francisco PCjr Users Group, now defunct, in July, 1987. The prices and locations mentioned are, of course, not applicable in Atlanta in 1991; but the basic information is reliable. Please don't attempt the more technical operations unless you have some skill with a soldering iron, however - new motherboards are getting harder and harder to find and they ain't cheap!

My initial pleasure and excitement were dampened considerably when I discovered a problem with the image on the monitor. A bad chip on the internal 64K Memory and Display expansion board was about to teach me some important lessons about computer repairs. The particular problem I had is really not important, but I'lluse it as an example of how to approach a computer hardware problem.



My "new" PCjr behaved normally until I ran a word processor. Text on the screen had a most peculiar appearance. Every other character was high intensity with the others normal. For an intended brown on black display, every other character was bright yellow rather than brown. Very odd.

A standard approach might have been to take the computer to a shop for repairs. Typical not (



Роза 2

INFORMATION, PLEASE

~ OFFICERS ~ 1989-1990 President David Blagg 928-0695 Vice-President: **Beth Geiger** *872-0242 Secretary: Carol Burns 396-5675 Treasurer: **DickAnthonv** 992-1868 Disk Librarian: Leonard Brown 822-0113 SysOp: Terry Markert 664-5056 Newsletter Editor: David Wilson *255-2731 Landlord: Stan Mislow 636-2179

* Designates Membership Committee Contact Person The ORPHAN PEANUT is the official newsletter of the Atlant PCjr Users Group, a distressingly non-profit organization dedicated to the health and well-being of the first Orphan and first "clone" from IBM - the "Peanut". The Group's sing purpose is as stated in Article 2 ofourConstitution:

The Orphan Peanut

"...to provide a forum for members to share information, experiences, and techniques of use that will help other members derive maximum benefit and enjoyment from their PCjr."

The ORPHAN PEANUT is designed, laid out, and entirely created on a PCjr with 736 KB of RAM or 8 MHz of clock speed (but not both together), a Microsoft Mouse, a second floppy drive (3.5") from PC Enterprises, and two 20-megabyt hard disks from RIM via Paul Rau Consulting. There's other stuff as well, but we forget.

Software used includes TEXTRA word processing and QEC text editor, PFS:First Publisher desktop publishing, and sundry other programs of varying usefulness.

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a software review by David Wilson

LABELS UNLIMITED



PEANUT SHELL SUMMARY

The Orkhan Peanut

Product Name: LABELS UNLIMITED, version 3.0 Publisher: POWER UP SOFTWARE CORP. Description: Creates and prints all sizes and shapes of labels, placecards, nametags, and other small print jobs that require specialized formats. Disk Drives: Requires 2 Memory requirement: 512 KB Printers: Will accommodate mostprinters sold today - dot matrix and laser. Graphics: Imports graphics in the .PCX format Fonts: Comes with 2 scalable typefaces; more are available at additional cost. Price: Publisher's List Price - \$ 59.95; Street price - around \$ 38.00 at discount software stores.

LABELS UNLIMITED is, for me, a real find. I do several things that this software can help me with, and so far I haven't found one that it does poorly. The samples that you see illustrated in this article were all done with LABELS UNLIMITED on my

Panasonic KX-1124 dot-matrix printer in a few minutes and represent only a fraction of the possibilities this nifty package offers to the Junior user with a couple of floppy drives and a memory expansion to at least 512 KB. Here are a few observations I've made after using it for a couple of weeks.

First, you are provided with two scalable fonts. What this means is that you can use either of them on any line in the label, and you can "scale" them to any size from 4-point to 72-point in Normal, Bold, Bold Italic, or Italic styles) for the uninitiated, a "point" is 1/72nd of an inch; thus, 36-point type would be 1/2" high.) This article is printed in 10-point type,

with the banners (Headlines) set at 36-point. The typeface is *Marin*, one of the many clones of *Times*

Roman, and is very similar to Tribune, one of those contained in the LABELS UNLIMITED repertoire. The other font (Triunvirate) is similar to First Publisher's Swiss, which is used in the box immediately to the left.. You can mix typefaces (which are a combination of fonts, styles, and sizes) on any label if you desire, providing an extraordinary amount of flexibility in the "look" of your label.

LU also lets you import graphics in the PC Paintbrush PCX format. As you see from the samples, this lets you use the thirty-two images provided with LU, or you can create your own using any graphics editor that produces a PCX file. You can't use a color graphic, but there are ways to avoid this problem if the need arises. The graphics capability functions a little mysteriously in importing images other than those included in the software, but this too can be worked out if necessary.

The labels may be divided into up to six "zones", each of which can be formatted independantly. In addition to varying the size and general location of the zones, you can designate them as containing either text or graphics. The orientation of the zones' contents may be rotated



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Labels Unlimited (Continued)

(From Page 3)

90. 180. or 270 degrees as you desire. Zonesmay be outlined with a box, shaded, or contained in a shaded box for emphasis. The same options may be assigned to the text contained in a zoneif you wish.

familiarity, but by then you knowhow to get what you want from the manual

LU isn't just a labelmaker. It'll create and print any

Becorded: 1/22/91

There's an on-screen preview that you can call up at any point in the creation process to see what your label looks like. Although the image is a little fuzzy on a CGA screen. it's still plenty clear enough to get a good idea of the final product - it's not WYSIWYG (What You See Is What You Get), but it's about as close as CGA permits vou.

Other (but not all) features of LABELS UNLIMITED 3.0 include automatic incrementing on any line so that you can number the output of that label: Date/time "stamping" to make each label current; a "ditto" feature that allows you to designate individual lines to be carried ove to the next label so you don't have to key in repetitive data: and an import/export function that permits you to move your information between LU and another program, such as a database or word processor. (You can see the result of the last at the next meeting.)

UNGAWA! Down the Congo Well Hi, Masai Swahili Love Song Oh, Say, Kenya See Hev Zaire Tanganyika Tango Do You. Zulu? We Need More Occo Don't Kill a Manjaro Serengati Stomp

Snelvis Crood

Side A

IRISH AARDVARK The Happy Hyena You're Lion Again If You Gnu, Susie Lovesick Rhino We Have No Dodos Good Ol' Boa Monkey See, Monkey Do Smile, Nile Crocodile Night owl Goin' Ape

Ungawa!

My Wild Irish Asardvark

Side B

number of products: price tags, serial-numbered tickets or ID badges, or even post cards. It does have a myriad of labelling uses - diskettes, VCR or audio tapes, storage

The interface isn't the most intuitive or simple that I've come across. but there's a pretty complete manual that accompanies the program which will answer most questions if you take the time to look them



up. If you require a great deal of detail, you may have to go to the old trial-and-error method to determine what works, but in most cases the answer to your question is available. The help screens are really too general once you get past the initial stages of your

boxes, inventory tags, or anything else of a similar nature that your fertile imagination can conceive. You don't even have to use standard-sized labels: the program allows you to define your own as well as choose from a lon list of standard forms offered by the major manufacturer such as Avery. Right now, it's the best product of its kind that I've found, and the price is eminantly reasonable for the value.

There are many more options and capabilities built into LU, but time and space don't permit us to enumerate them here. We can say that if you're looking for a flexible, fairly simple labelling program, look no further - this is it



Fixing Jr.

(From Page 1)

charges are \$65 per hour labor, plus parts at full retail. It's hard to get anything fixed for less than \$200-\$300. Since I wanted a cheap computer, this was not the way to go.

The alternative was to try and fix the computer myself, but where do you start with something as complex as a computer? The answer is the built-in diagnostics. Ctrl-Alt-Ins brings up the diagnostics menu on a PCjr. Most of the computer's functions can be tested. I selected the video tests identified by

the picture of a monitor. Video appeared normal in 40 column mode, but the 80 column screens showed alternating intensity characters when there was text and vertical lines on others.

This was an important piece of information. The internal 64K Memory and Display expansion board is required for 80 column mode but 40. Here was a likely source of the problem. I checked out the monitor by attaching it to my old PCjr. It worked perfectly.

I also checked the Advanced Diagnostics which come with the Hardware Maintenance and

Service manual. These suggested the motherboard was bad which turned out to be wrong. There were also some voltages listed for the display output, however I skipped these. I already knew that the problem was inside the Junior since the monitor worked fine on my original PCjr.

The next step was to remove the internal 64K board from the defective unit and replace it with the known good one from my other PCjr. Eureka! The display was normal. Also, the bad board installed in my other PCjr made the characters alternate in intensity. The problem was isolated.





My friend, Benson Honig, pointed out that there is some hazard in swapping parts this way. A good board may be damaged by a faulty computer, or a bad board could damage a good computer. None the less, for those willing to take the risk, this is a fast way to find bad parts. I checked on the cost of exchanging my defective board. One company offered a replacement for \$69, and this appeared to be as low a price as I was likely to find. Just identifying the defective board had dropped the repair cost from over \$200 to \$69 plus shipping. Not bad, but more than I was willing to pay. After all, this was my

second computer.

The Technical Reference manual was the next stop. This provided a schematic diagram of the expansion board as well as specifics about how video attributes which control intensity are handled. The schematic showed the board contained 16 memory chips and only four others. The diagnostics had not revealed any memory chip errors, so that strongly suggested that one of the four other chips was the culprit. I did check the two resistors on the board with an ohm meter, and they were fine. The next step was to measure voltages at all the pins on the four chips while the computer was in 80 column text mode. I recorded these, installed my good board, and repeated the measurements. Only pin 9 of ZM-1, a 74LS374 chip,

differed. I rechecked this in other displaymodes and confirmed the difference. This was the bad chip.

I removed the chip by cutting off each leg from the top. This left all 20 pins sticking out of the board. With a 25 watt soldering pencil, I heated the back of each pin and pulled it out of the board with needle nose pliers. Excess solder could be cleaned out-Jofhe holes with a solder "sucker", a rubber bulb with teflon nozzle. I heated from the back and applied the sucker to the front of the board.

FIXING JR.

(From Page 6)

I chose to solder in a socket just to be on the safe side and plugged in the new 74LS374. This is a common chip which I



found at Electronics Plus in San Rafael near my home for \$3.75. Zack's in San Francisco is another excellent source of electronic parts.

The repaired board works perfectly. You can see it at our SF PCjr Users Group meetings because I'll be bringing this second computer frequently. The key was a good PCjr for comparisons with the defective unit! Swapping parts made

isolating the pJoblem area rather simple. Being a member of a Users Group can be critical when you have a problem. Where else is it likely that you'll find someone with parts to swap or experience with the same problem and a library with reference manuals.

Fortunately, my problem was on a plug in board in the main unit for which manuals and schematics are available. IBM has not released the schematics for the PCjrcolor monitor to the public. Therefore, problems with the monitor often lead to junking it and buying a replacement. I have a friend who was charged just over \$200 to replace the power supply in his monitor. That's a lot considering that color monitors of comparable quality can be purchased new for about \$275. Because of the problems and expense in repairing PCjrs, we are trying to build up an inventory of used parts for group members who need them. If you have a PCjr which dies, please donate it to the group. We will pass along the working parts to members who need them.

The Orphan Peanut

Interpret

by John King

When you turn on your PCjr, the first thing it does is check all internal components. This is called the Power On Self Test, or POST, and it is programmed into the ROM BIOS chip. Part of the POST is displayed on your monitor. The IBM logo and the memory count in the lower right-hand corner of the screen are parts of the POST. If all the components pass their tests, your PCjr lets you know it is ready to work by issuing one beep from the speaker.

If any part of the computer does not pass its test Junior will either not beep or beep twice, and the word ERROR may appear on the monitor just below the memory count. Below the ERROR message will be a letter indicating what part failed.

The most common message is ERROR B. This indicates that the keyboard didn't pass its test. Usually, this just means that you touched a key during boot up. The POST interpreted the key press to mean that a key was stuck in the down position and issued the message.

You can test this by holding any key down when you turn your computer on. At the end of the memory count, the speaker will beep twice, ERROR B will appear, and the boot process will stop. If you press the Enter key, the boot process will continue. If you receive ERROR B for no obvious reason, it's time to run the internal diagnostics on your keyboard. You can bring up the diagnostics menu by holding the Ctrl, Alt, and Ins keys down at the same time. Move the cursor to the keyboard picture by pressing the space bar, then press the Enter key to start the test. If one key is the problem, you should be able to find it quickly.

The second most common error message is ERROR H for disk drive problems. Again, the internal diagnostics can be helpful. When you select the disk picture, you will be reminded graphically that any data on the test disk will be erased, so insert

ing Error Messages

The Orphan Peanuc



a blank disk. The password which you must type in to start the test is MPNP. If your drive fails, a simple lubrication may be all that is required. How to do this has been explained in the newsletter previously.



Error A indicates a memory problem. If the memory count stops at 128K or less, the problem is on the motherboard, otherwise it's in your expansion memory. If it's in the expansion unit, remove it and reboot. If there's no error, you now need to find the bad chip on the expansion board.

Error C is from a cassette recorder. No one has seen this one since disk drives became standard.

Error D is from the serial port on the mother board, the S port. That's one for an expert. ERROR E is for problems with the serial port on a PCjr internal modem. Remove it and reboot. It's cheaper to replace the modem than to pay to have it repaired.

Error F is a generic ROM BIOS error. If you see this rare one, try to find a dead PCjr and steal the ROM chips. Error G is a related but less serious cartridge error. Cartridges contain ROM chips which can be damaged by careless handling. Exposure to static electricity and heat are ROM killers. Remove all your cartridges and reboot. Replace them one at a time to find the bad one. Discard it. ROMs can't be repaired.

The red Guide to Operations also lists an Error X without any description. It's not listed in the ROM BIOS code, so perhaps it doesn't really exist.

If there is no error message, but you heard either no beep or two, something else is wrong. Try removing all accessories and rebooting. If that fails, it might be the power supply card. See if you can borrow one from another machine. If that's the problem it can usually be repaired. Power boards are very standard and simple.

If it's not the power board, then it is almost certainly the motherboard. Here's a final thought. If you have a



motherboard problem, replacement is cheaper than repair, and the cheapest way to obtain a replacement is often to buy a used 128K PCjr. Furthermore, this provides other parts for future use.





The Orphan Peanut

Sysop Corner

support.

I will show the use of the BBS and other communications programs in the upcoming meeting of the Atlanta PCjr User Group. I will try to explain to our users the advantages of being able to communicate with others and why we should have a BBS.

The BBS houses close to 600 files on-line and off-line to the system. It appears to me that only a select few of our users are taking advantage of this service. There are roughly 40 members of the 60+ members that have called the BBS at one time or another. This is better than 50 percent of the user's group. I ask "Why are only a few select members calling?". I gather that members are no longer using the funds for replacing a hard drive on the system. Although I am experiencing some problems with the new drive I am taking steps to correct the problem by getting the old hard drive fixed and replacing the disk controller card that controls the hard drives on the system. Here again, this will be another cost that I will have to endure to keep the BBS up and running.

I will state that if these unexpected cost of replacing machine parts continues that the BBS will no longer be able to operate. I would doubt





PCjr, you are afraid of using your machine to communicate, you don't understand how to use it, you think that a 128k machine is not adequate, or you just don't CARE. The system also contains message areas for communicating with others. The purpose for this is to find out information or ask for assistance. There are some knowledgeable people in the group, which call on a regular basis to help with assistance. This is the place you can find information out, so why not use it!

There are other areas as well such as a bulletin area and a on-line door area. The bulletin area contains information about certain topics of interest, a utility to allow you to post or view items for sale. The on-line door area contains adventure and warfare, and casino type games to play while connected.

The cost of the BBS is absorb personality by me, which I must say is not CHEAP. The contribution that I get from the user's group covers just the telephone cost if that much. The cost of upgrading and registering software, electricity cost, and maintenance of the hardware are also components of maintaining a BBS.

I would like to thank the user's group for suppling the

by the membership for contributing to the BBS. It is a shame that the system receives more non-members than members since you are paying for the service through your membership dues. The system will not survive with an average of 5 calls a day on a 24 hour basis. I have always contended that the BBS is the lifeline of a user's

very seriously that it would

any. The dues were set long before a contribution was set

reduce the membership dues if

Software Available

group, or any other organization that uses it for

If you're interested in telecommunications but don't have the software to run that modem you picked up at a garagesale, be of good cheer - your APCjrUG can help. An Atlanta man named Alan Ucckert wrote a communications program several years ago that still works perfectly, even on a Junior with the minimum 128KB memory. It's called JRTELE.COM, and it's available either from the PCjr WORKSHOP as a download or through the APCjrUG Disk Library. JRTELE can use either the "Hayes Set" or the iniquitous "BM Set" of commands and will work at 300/1200 baud. Try it!



A>DIR



by David Blagg, President, APCirUG

There are several things to be done here this month. First, I think it appropriate to extend my "thanks" to those who agreed to continue as APCjrUG officers. All too often it is easy to overlook the time and effort required to do a good job--and a good job has been done. Beth Geiger and Carol Burns are joined by the re-appointed officers, David Wilson, Terry Markert, and Len Brown in another year of keeping the PCjr alive and well in Atlanta. We welcome Dick Anthony as our new treasurer. And, of course, we wish Hunter Medney well as he pursues his university studies in Athens.

Second, I note that another year has passed. With that we have arrived at the time when we usually schedule a visit with the JrWorkshop, our official Bulletin Board System. Our Sysop, Terry Markert, will present the program at our next meeting (February 4th) to do exactly that. If you have not become involved in telecommunications, this is an opportunity to discover an exciting world of messages, forums, games, and programs you can download for your own use at home. There are many bulletin board systems in the Atlanta area, and many of these specialize in one interest area or another. There is something for everyone who has a computer with a modem. By the way (in BBS parlance that would be "BTW"), our own BBS, **The PCJr Workshop**, is one of several around these United States which supports the PCjr. You should also know that most of our library files are available for downloading from the BBS. Come and find out what's there, and how to do it.

Third, we have an ongoing need for help in our efforts to keep the APCjrUG a going concern. Simply put, this means that the Sysop, Terry Markert (664-5056), the newsletter editor, David Wilson (255-2731), and the librarian, Len Brown (822-0113), could use some assistance. As a practical matter, to quote someone else (I do not know whom to credit), many hands make light work. If you would like to learn more abont the details of managing a BBS, a newsletter, or a disk library, call the appropriate person and express your interest. Now, please.

Finally, I want to express my gratitude to all of you for your continued support of the PCjr and the efforts to keep it going. We have a great group of folks helping each other as we slip comfortably into 1991.





I want to apologize if this issue has seemed even more disorganized than usual. I've had one distraction after another, not the least of which has been the attention I've paid to the developing situation in the Persian Gulf. As those who know me are aware, I'm a former career officer in the Army, and my heart is most definitely with the "grunts" in the Arabian desert. I won't preach at anyone or even express my opinions here, but I intend to show support for the troops by displaying the flag on the address label until the crisis past. I'd like to think this won't cause any of our members problems.

Returning to the subject at hand - our Orphans - let me once again solicit input from members on subjects that aren't being adequately covered. I don't have young children, so I can't review the software that would be useful, enjoyable, or educational for them. The same is true of games and much business-type software. I just don't have the time, money, or inclination to look at and evaluate it, and that's a shame. Many of you are using programs that others would love to know about, so how about some short reviews? Take a look at the one on LABELS UNLIMITED in this issue and others which have appeared in past PEANUTS, then apply the same format to SESAME STREET educational programs, dBASE 3 or LOTUS 2.2, or possibly KINGS QUEST V. Do they work on your Junior? If they need "tweaking" to make them perform, if they run in 16 colors only with the "Tandy Mod", or if they don't run at all, please take a few minutes to sit down at your Word Processor (A review of TEXTRA 6.0 is coming next month) and tell us what your experience is. Other members willappreciate it. If you're hesitant to submit something because you've never done such a thing before, don't worry - all you have to do is look at any of your Editor's efforts to realize that it can't be all that hard, right?

As I was putting this issue together, I got a call from a very nice lady named Peggie Scott. It was a little out of the ordinary run of things, and it gave me an idea. Peggie works with the Boys' and Girls' Clubs of Metro Atlanta in the West End section of town, and she has recently discovered (or rediscovered) six PCjrs which had apparently been shuffled aside some time ago. She says four of them are operable as they they are now and the others appear to have bent or broken pins which prevent them from being used. Her immediate concern was to get the Juniors hooked up to two printers, but she doesn't think they have parallel port sidecars (she was calling from another building).

The Orphan Peanut

GOOBER DEA

These Juniors would be immensely helpful in getting . the boys who use this club interested in something constructed, but she needs some help in getting started - no one there knows enough about PCirs to be able to state with certainty just what they have and how it is configured, so it's difficult for them to project their needs and "wants". My reaction to this is that the APC rUG could surely be of some help in the initial stages of identifying and cataloging what they already have, making suggestions on what they might need, and possibly helping them find it at the lowest possible cost. If anyone out there wants to donate time or even parts, software, or components, I think you could do a good thing and maybe even get a tax break at the same time. If you'd like to know more about what you can do, call Peggie at 733-6994 during normal working hours, or you can call me at 255-2731 and we'll see what we can set up.

Anyone interested in a Spring Swap Meet? We had a problem with the one last fall because of the truly atrocious weather that night, but a good bit of Junior hardware and software changed hands in spite of the deluge and lightning. It's been suggested that another one for the May meeting might be successful, so here's your chance to maybe unload that 1200-baud modem you don't need or the small parallel port sidecar that's unnecessary because you upgraded to a two-floppy system and the new one has a parallel port included. Or how about those Reader Rabbit programs your seventh graders no longer need (or will be caught dead using)? It's an idea, and we'd appreciate your input. Give one of the officers listed on Page 2 a call if you have any opinion on the subject... or any other subject ... or maybe just because you want to talk Juniors. Most of us like to do that, or we wouldn't be in the APCjrUG in the first place We'll listen.





STANČOM in latige fetters on the front of it.

If you're inside the Perimeter (1-285):

Get on I-85 heading North/from the city. Watch for the Shallowford Road exit, Number 33, and leave the Interstate highway there. Turn right on Shallowford Road, get in the left lane and prepare to immediately turn left into the STANCOM parking lot.



The Chronicle of The Atlanta PCjr Users Group 6575AmbergladesLane Atlanta, GA 30328





