

The Orphan Peanut

THE CHRONICLES OF THE ATLANTA PCjr USERS GROUP

Volume 4, Number 5

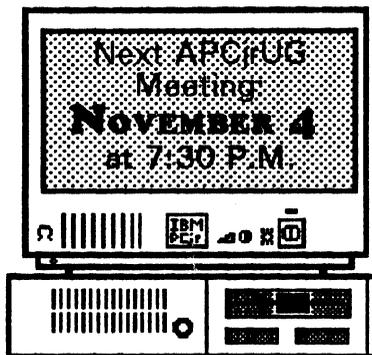
Price: \$1.50

November, 1991

CONTROL YOUR HOME WITH PCjr

by Augusto Figuerola

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



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

How can this be done? You need only your PCjr with at least 128Kb of memory, the Powerhouse X-10 interface unit, a few appliance and wall switch modules and the right software. With less than the cost of a few timers you can equip your Jr. with all the items needed to control your home. You must connect the Powerhouse interface unit to the serial port of your PCjr. For that purpose you have (Go to Page 10)



ATTENTION BBS USERS!

The PCjr WORKSHOP is moving
to a new phone number, effective on

NOVEMBER 1, 1991.

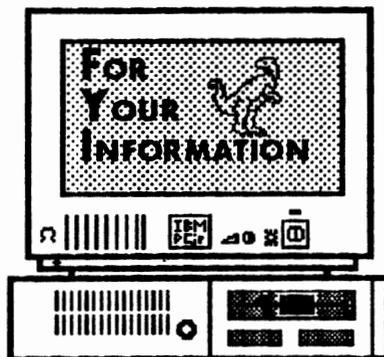
Please make the change in your
dialing directory as follows:

Old Number: (404) 740-1916

CHANGE TO

New Number: (404) 418-9363





The Orphan Peanut

is the official newsletter of the *Atlanta 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 single purpose is as stated in Article 2 of our Constitution:

... 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-megabyte hard disks from RIM via Paul Rau Consulting. There's other stuff as well, but we forget.

Software used includes *TEXTRA* word processing (ver. 6.0) and *QEdit* (2.1) text editor, Power Up! Software's *EXPRESS PUBLISHER* 2.0 desktop publishing, and sundry other programs of varying usefulness.

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~ OFFICERS, 1990-1991 ~

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Purchasing A Second Junior

by Louie Levy
Editor, Eugene, OR PCjr Club Newsletter

As fall approaches many of us feel that winter is just around the corner. It will soon be time to come indoors from the summer heat and think about things to do inside now that the weather is becoming more brisk. The first thing we do in our home is crank up Junior and see how he made it over the inactive summer months. If you belong to the Eugene PCjr Club, your Junior should be in fine shape as he completed his annual check-up back in April at the "Spring Cleaning". But, just as some folks don't prepare their lawn mowers for winter, some didn't take the necessary steps to keep Junior alive and healthy for another year.

If your Junior sounds somewhat noisy when you boot, maybe it's time to clean it and give it a good check-up. You can refer to Chapter 6 in the Guide to Operations that came with with Junior. This self-test goes far in showing you how your Junior is doing. If you need or wish to go a little farther than just a physical, use the instructions found in the IBM Hardware Maintenance and Service Manual several of our members have.

There is much you can do as a user to keep Junior happy and healthy. Cleaning will help prolong the life of your disk drive or drives, and if you look around the little blower fan attached to the back of the disk drive you will see how Junior's environment is interacting with its components. If someone has been smoking while computing you will see the brown nicotine stains on the fan, disk drive, and portions of Junior's motherboard and disk drive controller card. Other substances are sucked

into Junior by this fan as it tries to keep Junior cool: lint, dust, pet hair, etc. These stains and the associated dust and dirt that all homes have help lock in heat, causing Junior to fail sooner than he should.

If you have had to purchase a component locally for your Junior, you already know that very few computer repair shops have anything associated with Junior in stock. While IBM still supports (through February, 1994) our munchkin with parts *[at the original inflated IBM prices - Ed.]* many shops have moved on to more profitable machines... read, ones that break more often than Junior does. This situation leads us to the meat of this article: consider buying a spare Junior CPU. I know this sounds ridiculous to many; you don't buy a spare car or TV to keep around in case the pne you use every day should break, but it may be very profitable to do this just for Junior.

Consider the following: you bend or break a pin on the rear of the CPU when a family member moves Junior to another room. Cost of repair, \$50 to \$100, depending on whether you remove your motherboard or the repair shop does it for you. Or your power supply gets zapped during a thunderstorm: \$35 to \$65 - if the repair shop can find another one to exchange, or if they can do circuit board troubleshooting. Due to low voltage your transformer (brick) dies; where do you go in town to find another? Radio Shack? Think again. If the mother of all boards needs replacing in your Junior, look at the prices from suppliers who advertise in the magazines and newsletters. You have to exchange your old board in some cases, but in all cases you must do without Junior's familiar hum while you wait for the new or repaired board to arrive in the



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by David Blagg, President, APCjrUG

DO NOT skip this month's little column. The issue presented herein is too important.

At our November meeting we will have one major item on the agenda: the future of our group.

There is no need for alarm, for our future is assured. But as a group we have arrived at a stage of maturity when decisions must be made.

Our lovable little orphan machine continues to diminish in importance in the world of personal computing. Yet there are those who have become new owners of PCjrs (for whatever reasons) and need help with getting started. And many of us who have owned one for a while continue to get pleasure from it, even if we have also acquired another computer.

There are others who own one of the "abandoned" computers no longer supported by the original manufacturer or otherwise declared "obsolete."

Still other users know little if anything about computers-- including the PCjr--and want to know how to "break into" the world of personal computers.

In short, we will discuss these and other issues about the general direction for our group as we move into 1992 and beyond. We will also discuss the particulars regarding The Orphan Peanut newsletter and the JrWorkshop BBS.

Think of it as the difference between <Ctl> <Alt> <Ins> and <Ctl> <Alt> . I hope to see you at Stancom on November 4th at 7:30 p.m.

PAY ATTENTION!

Those who know me are aware that I've been the PCjr's champion from the time I discovered that you could do more than just make the little guy in the demo jump around on the keyboard. It fascinates me to extract more from it than was ever dreamed possible by its designers or the marketing types at Big Blue, as this newsletter will attest.

But the fact is that Junior - and the User Groups that support it - are slowly bleeding to death as a result of the continuous little cuts made as the "old guard" drift away to bigger and better computers and are not being replaced by new leadership. That's what the above is all about, and I urge you to come or at least call to express your opinion before it's too late. If we don't hear from you and get your help, you're going to be the loser, because I assure you the APCjrUG will not last in its present form for another year without new blood to replace the old. It truly pains me to say so, but that's a fact, and the time is past when we could dodge it. This is a pivotal meeting. Be there if you care about your PCjr or the APCjrUG, or at least call an Officer and make your feelings known. Otherwise, you'll get what others think you deserve.

David Wilson, Editor



PRINTER CONTROL

by John M. King, Designated Guru

If you use your computer to print letters, reports, labels, or lists, the appearance of final product depends upon how your printer is set. Sometimes a rough, "draft mode" printout is adequate. On other occasions, you will want the best quality possible. In this article, we'll look at how to set your printer so the output suits the job.

Some printers have a control panel on the front for setting options. If what you want is on the panel, that may be the best method. For options that are not available via the control panel, the only way to select them is to send control codes to the printer. It may even be easier to send control codes than use the panel since there are ways to set these codes up in advance. We'll cover ways to do this in this article.

We'll start at ground zero, so if you've never heard of "printer control codes", you won't be lost. On the other hand, if these codes are old hat to you, perhaps you'll find some new ideas on how to use them.

Why would you need to know anything about printer codes? Many word processors provide essentially automatic installation procedures for dozens of printers. You select your printer from a list, and the word processing software provides access to the full range of output that your printer can produce. There are keystrokes to set margins, line spacing, bolding, fonts, etc. If this is the only way you use your printer, you don't need to know any more about printer control. Unfortunately, not all programs are so obliging.

QUICKEN, a very popular check book managing program, provides rather primitive automatic printer installation. If you want to use any of the advanced features of your printer, you have to enter the control codes manually on a printer set up screen.

If you need to print from DOS, rather than from an application, printer control is even more primitive. All DOS provides is *MODE.COM* which can only change line spacing from six to eight lines per inch and the number of characters per line from 80 to 132. These settings won't help when you are printing the documentation from a shareware disk and don't want the print to run all the way down the page and over the perforations between sheets. What you need is a way to send the "skip perforation" codes. In this article, we'll cover several ways to send codes to your printer.

PRINTER CONTROL CODES

What are printer control codes, and where do you find them? They are special characters you send to your printer to change its output temporarily. The change remains in effect until a new code is sent or until the printer is turned off. The codes are listed in the manual which came with your printer, usually in a way which defies understanding by those who need them most. We'll step through several examples to clarify how to use the codes.

The examples I have chosen will work with Epson compatible dot matrix printers as well as many others. If you have a different printer, and for features not covered here, you will have to consult your printer manual. After this

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introduction, the manual should make a lot more sense and be easy to use.

Let's review some basics. First, how does a computer keep track of all the letters, digits, punctuation, and other characters which it displays on the monitor or sends to the printer? Computers only use numbers internally, so a number is assigned to each character. A number between 0 and 255, called the ASCII value, represents each character. Why 0 to 255? Because the computer uses one byte (eight bits) of memory or disk space for each character, and the highest number you can count to with one byte is 255 decimal (FF in hexadecimal). Printer manuals usually have a table of all the ASCII characters. Don't worry if you can't count in hex, all you'll need to do is copy the codes from your manual.

Now, let's send a couple of characters to the printer. If I want to send my initials, JK, here's what happens. The upper case letter J is ASCII 74 decimal (4A hex) and the upper case K is 75 decimal (4B hex). When I type JK at the keyboard, the computer stores 74 75. When a print command is received, the computer sends the two bytes, 74 and 75 decimal, out the printer port to the printer. The Read Only Memory, ROM, chip in the printer converts the ASCII values into groups of pin pushes for the print head which forms the letters J and K on the paper. Now, let's look at how this works with printer codes.

Let's examine what happens when the printer receives a single character code, for example, the code to shift into compressed mode (17 characters per inch instead of the normal 10).

When the computer sends ASCII 15 decimal (0F hex), the ROM chip in the printer recognizes that it is the code for compressed mode and switches the printer. Nothing is printed because ASCII 15 is a control code and not a printable letter, digit, or symbol. Other single digit control codes are linefeed, 10 decimal (0A hex) and formfeed, 12 decimal (0C hex).

Another type of control code consists of two or more characters starting with the Escape character, ASCII 27 decimal (1B hex). These longer printer codes are sometimes referred to as "Escape codes". The characters which follow the Escape character are often ordinary printable characters. However, when the ROM chip in the printer recognizes the Escape character, it doesn't print the characters which follow that are part of an Escape code sequence.

The code to shift to emphasized, or bold, printing is Escape E, ASCII 27 69 decimal (1B 45 hex). Because the E follows the Escape character, it will not be printed, but the printer will shift to bold printing for all subsequent printable characters. Escape F will return the printer to normal printing. Note that the upper case E or F must be sent. A lower case e is ASCII 101 decimal, and Escape e means nothing to the printer.

If you are using a program like Quicken you are now all set. Look up the codes for the features you want and enter them on the program's set up screen. The program will send the control codes at the appropriate times. However, for printing from DOS, we still need a way to send codes to the printer.

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SENDING PRINTER CODES

We will discuss five ways to send printer codes. We'll cover three in this article: Printer Utilities, ECHO, and COPY. Next month we'll discuss two more: BASIC, and ASIC. (ASIC is the shareware BASIC compiler reviewed in last month's *PEANUT*.) There are advantages and disadvantages for each method, so you will have to pick the ones that are best for you.

Small programs, or utilities, to set your printer are available from computer BBSs and shareware dealers. There are lots of these ranging from very simple to quite elegant for almost every printer ever made. Many allow you to select from a menu of features for your printer. You can have fun trying these, and you may find one that is just what you want. If you don't, you can use one of the other methods to set your printer.

You can use the ECHO command in a batch file to send printer codes. The only "trick" is that you must write the batch file with an editor or word processor that allows you to enter the Escape character and other ASCII characters with values less than 32. Check the documentation with your word processor to find out if you can do this.

You can't use the "COPY CON filename.bat" method because DOS won't let you enter Escape the Escape character, either with the Escape key or by Alt-27. Also, quite a few other keystrokes, such as ASCII 10, linefeed, and ASCII 9, TAB, will be acted on rather than included in the file. It's interesting to try COPY CON to see what the results are.

I use the Tiny Editor, TED.COM, from PC Magazine to write batch files because it will accept all the ASCII characters using the Alt-number method. For example, to enter ASCII 15 for compressed mode, hold the Alt key down, type 15 on the number pad, and release the Alt key. (If you are using the PCjr keyboard, you must first shift into NumLock mode with Alt-Fn N. This allows the number keys at the top of the keyboard to be used with the Alt key.)

Here is the line for a batch file to put the printer into compressed mode. Of course, you must hold the Alt key and enter 15 when writing the file. The greater than sign redirects the code to the printer.

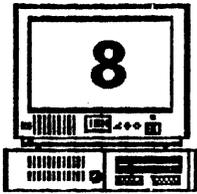
ECHO Alt-15 > PRN

In TED and many other editors, the Escape key character can be entered either by hitting the Escape key, or by Alt-27. Just to show that the Alt-number method is not something special for printer codes, try Alt-74. The letter J will appear on the monitor because ASCII 74 is the letter J.

One disadvantage of the ECHO method for sending printer codes is that every line is followed by a carriage return and linefeed. Although the printer code will not be printed, the paper will advance one line. Often that throws off all the rest of the printing.

You can eliminate the unwanted linefeed problem by using the COPY command with a file which contains only the printer codes.

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Create the file in TED or another editor the same way you created the batch file. Enter only the printer codes, without hitting the Enter key, then copy the file to the printer. If you named the file with the Alt-15 character COMPRESS, this command will send it to the printer.

COPY COMPRESS PRN

Note that you do not need a greater than sign with the COPY command.

Now let's send the more complicated printer code which makes the printer skip over the perforations between sheets of paper. The command is Escape N number where number is the number of lines to skip at the bottom of the page. For a one inch margin at the top and bottom of each page, you must start printing 6 lines down on the first page and skip 12 lines at the bottom. The first 6 lines skipped are the bottom margin on the first page and the second 6 are the top margin of the second page.

In practice, you must advance the paper until there is a one inch top margin on the first page and turn the printer off and back on to make that the top of form. You can also send Escape @ to initialize the printer and reset the top of form. Finally, send the Escape N number command, and begin printing.

We already know how to enter the Escape character in TED. The letter N is simple, type the upper case N. That leaves only the number of lines to skip, 12, to be entered. You can't just type 12 because that's two characters, ASCII 49 and 50. If you did, you'd skip 49 lines and print a 2 on the first page. You must

enter the ASCII character 12 by holding the Alt key and typing 12. Only one character will be displayed, and you will skip 12 lines at the bottom of each page.

Here's a rule that I haven't seen written down anywhere else. For all printer control codes which accept a number that can be greater than 9, you must enter the ASCII character of the value desired. Use the Alt-number method with these codes. Examples are setting margins, page length, etc.

Other codes accept only numbers up to 9, many accept only 0 or 1. The code to turn on double wide printing, Escape W 1, is an example. The only other value which can be used with Escape W is 0 to turn off double width printing. You can use the Alt-number method or just type the number 1 or 0 for this code. This may seem peculiar, but it works. The ASCII values for the characters 0 to 9 are 30 to 39 in hexadecimal (48 to 57 decimal). The printer looks at only the left digit (lowest four bits) in these codes. Therefore, ASCII 0 to 9 and ASCII 30 to 39 have the same effect.

WRITING PRINTER CODES IN DEBUG

If you don't have an editor or word processor that will let you enter the necessary ASCII characters, you can do it in DEBUG.COM which is part of DOS. The easiest way to use DEBUG is to enter all the codes in hexadecimal.

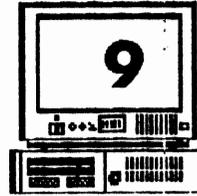
Since most printer manuals list the codes in hexadecimal as well as decimal, that usually won't require any extra effort.

Here are the DEBUG commands to enter the

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Control Your Home With PCjr

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adapter cable (which is inexpensive) for your PCjr. Then you plug the interface into a 120 volt outlet. Also you must plug the appliance modules into the electrical outlets of your house and replace the wall light switches with wall switch modules. You can then control everything electrical using the Powerhouse interface with your PCjr and the supplied software.

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

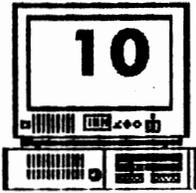
I bought the Powerhouse interface a few months ago after a relatively long back order wait. I found that the manuals that come with it are thorough in the explanation of the set-up and use of the interface. There is a manual specifically for writing your own software if you are adept at BASIC programming.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

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

up for use with the IBM PC. So, I had some trouble trying to set it up to use COM2 instead of COM1 as it was originally configured. As you may know, when using the RS-232 port of PCjr you must specify in the software that you'll be using COM2. I contacted X-10, Inc. at 1-800-526-0027 about this and they sent me a diskette with a set-up file at no extra cost. With this set-up file I was able to not only change COM1 to COM2 but also to use different screen color combinations for the program. The original software which is included with the interface allows only black and white. The other problem, which was not really specified in the Troubleshooting appendix, developed after I installed the modules and programmed the computer. Sometimes, the computer would not respond to the preprogrammed tasks, in particular the off and dim tasks. I found out that the problem originated from the electrical wiring of my home.

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

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



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PURCHASING A SECOND PCjr

mail. And take a look at the cost! If you use Thin-Font or a V-20 chip, just pray that the new board doesn't have soldered-in chips.

Juniors have never been cheaper. It is a good time to consider that second machine for many reasons than just to "part out". When that neighbor kid comes over, or the grandkids, let them play with the spare so none of your favorite games get zonked with sticky fingers or spilled pop. Let them bang on the old chiclet keyboard all they want; they won't hurt the one you use for word processing and they won't spill popcorn on it.

So, here are some guidelines to use when buying a used Junior. Of course, price is important.

[Ed. Note - these prices are from the Eugene area, and may vary somewhat in Metro Atlanta.] The CPU and brick can be had at garage sales and through word of mouth advertising for around \$75-\$100 if they are working. While at this price they may not be in topnotch shape, you should make sure they are at least in working order. Boot up and if you get the logo and then "Disk Boot Failure" on the screen, it may be caused by only a faulty disk in the drive, dirt, or even a bad or dirty disk drive.

Your club will have someone who will help you determine the problem and advise you on how to proceed. Just remember that a nonworking Junior holds about as much value to someone as one bookend. Still, even a "dead" Junior has some good working parts and has value to someone with a working Junior. Read on.

A nonworking Junior can be very valuable if you "part it out". Seldom will everything on a Junior break all at once. You may only have to insert a good copy of DOS (one without peanut

butter on it), or replace the fuse in the "brick" or the power supply card to have a good spare CPU. Be sure to look at the connectors on the back of the Junior. If the pins are broken in the K(eyboard) connector socket, consider using the Synectics internal keyboard adaptor...or just put batteries in the PCjr keyboard and sell the keyboard connector cable at the next Swap Meet. If the pins on the display connector are broken, you can use a monitor that plugs into the S(erial) port or one that utilizes the V terminal on the junior.

The IBM PCjr Color Display is a hot item. They can be purchased for anywhere from \$75 to \$125 in good working order. Most any TV repair technician can refocus them and adjust the horizontal and vertical controls for you if you can't find someone in your club to do it for you. DO NOT open your monitor and go probing inside. There megavolts present in there, even though the monitor may be disconnected, just waiting to make Junior a two-time Orphan. STAY OUT of your monitor unless you are a qualified repair technician.

All of this is good reason to become a member of a computer club. In nearly every one of them there is someone who actually enjoys making dying Juniors well or giving CPR to dead CPUs.

If you can find a used CPU that works, you will have a spare power supply card (\$50-\$75), 64K card (\$50), disk drive Controller Card (\$50) disk drive (\$60), diskette drive fan (\$10), external power supply or "brick" (\$45), infrared keyboard receiver (\$40), a second keyboard (\$25), the CPU case (\$30), and a motherboard (\$98). (Prices taken from the recent catalog of a well-known PCjr supplier.) You may also get a

File-Name Extensions John King

DOS files are identified by a filename which can be up to eight characters and an optional extension of up to three characters: filename.ext.

Extensions are often used to identify classes of files, although for your own files you can use them as you please. Here are some common extensions.

Executable Programs

You can run these by typing their name at the DOS prompt.

.BAT - DOS batch file, see your DOS manual under Batch Files

.COM - Normal program, binary file

.EXE - Normal program, binary file

Special Program Files

.BAS - BASIC language program, requires BASIC to run

.SYS - Device driver installed in the CONFIG.SYS file by DEVICE = line

ASCII Text Files

You can read these using the DOS command "TYPE filename.ext" to send them to the monitor.

.ASC - BASIC file stored in ASCII

.ASM - Assembly language source code

.DOC - Documentation file

.HLP - Help file for a program

.LST - Assembly language listing

.TXT - Text file

Special Files

.ZIP, .ARC, .LZH - Compressed file created with a file compression utility, used on many BBS

.BAK - Backup file created by an editor

.CHK - Lost clusters found by CHKDSK.COM

.ARC - Older file compression technique

.OVL - Program overlay file, also .OVR

\$\$\$ - DOS temporary files created when command piping is used

A Second PCjr?

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spare parallel printer attachment (\$90) or BASIC cartridge (\$20-\$25), and even another copy of DOS. There's often a lot of software with a used Junior.

So read the ads in the newspaper and stop at garage sales; there are many Juniors out there and there is much life left in the old "orphan".

PRINTER CONTROL

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codes for the skip perforation example. Start DEBUG and then give the commands shown at the hyphen prompt. Press the Enter key at the end of every line. The letter N is ASCII 4E hex.

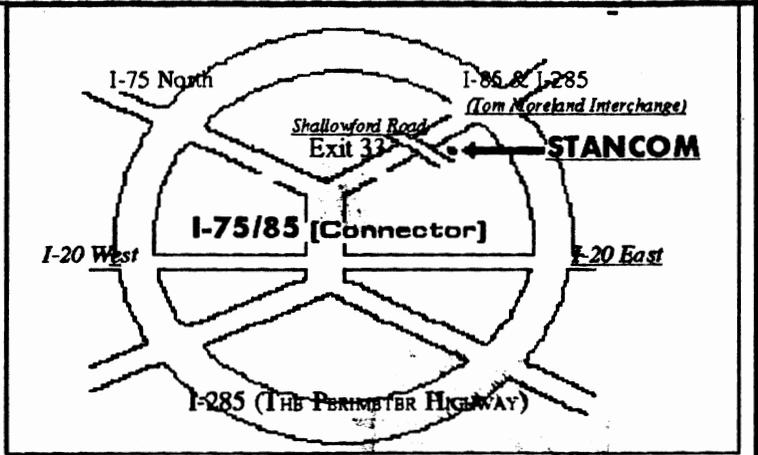
```
DEBUG (Enter)
A100 (Enter)
DB 27 4E 12 (Enter)
(Enter)
RCX (Enter)
3 (Enter)
N SKIP12 (Enter)
W (Enter)
Q (Enter)
```

The 3 following the RCX command is the number of bytes which you entered. If you enter more or fewer bytes for other codes, adjust the number to match. After you have quit DEBUG with the Q command, you will find a file with the name SKIP12 on the default disk. Use the COPY command to send SKIP12 to the printer.

That's enough for this month. Look at your printer manual again and see if it doesn't make a bit more sense. You may find lines like LPRINT CHR\$(27). These are BASIC code. We'll cover how to use BASIC and ASIC to set your printer in the next article. We'll even write a small printer utility which can be the start of your own personalized printer control program.

GETTING THERE

If you're outside the Perimeter (I-285): Just follow I-285 around Atlanta until you reach the *Tom Moreland Interchange (I-285 and I-85 North)*. Go South on I-85 toward Atlanta until you reach *Exit 33, Shallowford Road*. Exit onto Shallowford Road and turn left to cross over I-85. Immediately past the traffic signal on the *East* side of



the overpass you will see a building on the left with *STANCOM* in large letters on the front of it. If you're inside the Perimeter (I-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 Orphan Peanut

6575 Amberglades Lane
Atlanta, GA 30328



ATLANTA
BRAVES



1991 NATIONAL LEAGUE CHAMPIONS