

Computer News 80

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INDEX

SMOKIN ON THE NET!	
by Ed Henderson	Page 2
SURGE PROTECTION	
by CN80	Page 3
ARE WE PAYING FOR MORE THAN WE NEED	
by Harlod J. Hendriks	Page 3
ALLWRITE MADE RIGHTER	
by Ronald Garbin	Page 5
BCX REVIEW PART 2	
by Harold J. Hendriks	Page 7
GET ONLINE!	
by Jeffery Scott Bowlen	Page 9
AWARI AN OLD AFRICAN BOARD GAME REVIEVED	
by Henry H. Herrdegen	Page 11
WRITECHK/BAS	
by Robert Knowles	Page 12
MOVING FILES BETWEEN COMPUTERS	
by CN80	Page 12
EMULATOR IMPRESSIONS	
by Charles Harris, M.D.	Page 14
PROGRAM LISTINGS	
PATCH FOR PUP VERSION 1 & 2	
by Henry H. Herrdegen	Page 17
ADDRAVLP/BAS Program Correction	
	Page 18
TRS80 SHOPPERS GUIDE	
	Page 19
CLASSIFIEDS	
	Page 21
CN80 PRODUCT GUIDE	
	Page 27
PRINTER RIBBONS	
	Page 32

EDITORIAL COMMENT

Recently while reading the comp.sys.tandy news group on the Internet we ran across a message by a Tandy computer owner who said "I have just had a chance to see a copy of Computer News 80 and I wish that the Tandy computer people had as much self-reliance as the Radio Shack Computer users have." We are not sure just what was implied in this message except it seemed to say -- those Radio Shack Model I, 3 and 4 owners seem to have come up with their own solutions to the lack of programs, hardware, and other items that [we] Tandy MS-DOS computer users seem to lack.

Certainly those of us who own and use the Radio Shack computers have come to rely on their simplicity and ease of use to provide the things that a computer does best. They do all the productive things that computers do and it is sad to see the current trend of computers for the home and business user become more and more of an entertainment center with tons of memory needed to play arcade type games or listen to compact disks in stereo. Beyond that it is simply overkill. The things that a computer does best that adds to our ease of life, is its ability to do word processing, to crunch numbers, and to keep lists. We have all that for the Model 4 now. We have the top word processor in Scripsit Pro. We have the top spreadsheet program in BCX and a great high resolution program with MagicDraw, plus many other great programs developed by users in the past few years and programs are still being developed for these computers.

We were short on having a good flat file database system that could store names and do all kinds of search and sort routines for the data lists to print lables, lists of items and be able to set up and use almost instantly. We were short because great programs like pfsfile, Profile 4, and other went out of print several years ago and are no longer available except on the used market. And then if a copy could be found it had no support. We were short -- that is until Matthew Reed's release of his

JUNE
1995

DATA-MINDER program.

DATA-MINDER is a flat file data base program which is just as easy to set up and use as any flat file data base can be. Matt Reed is the brother of Mark Reed who you all know for his superb ED-IT program and for his MODEL 4 UTILITY DISK package.

We will have a full announcement and reviews of Matt Reed's DATA-MINDER Program in the July issue of CN80. We have waited this long for a really good flat file data base to be produced, guess we can wait another month.

SMOKIN' ON THE 'NET!

by Ed Henderson

After playing around on the local B.B.S.'s with a 2400 baud Zoom modem for some months now, I got restless - no, bored waiting for things to come down to me on my trusty old Model 4. A call or two to Stan and Ron soon fixed my dilemma. I bought a new 19200 baud Zoom modem and got an early copy of David Goben's patch for XT4 ver. 1.8.7a. Applied the patch, booted-up the new modem, and WONDER OF WONDERS, I was out there just smokin'!

Now, I'm out there in cyberspace sending and receiving at warp speed. I mean WARP SPEED. As many of you know, using capitol letters during transmissions on the Internet is like yelling at someone. Well, that's what you feel like doing when you go from 2400 baud to 19200 baud. It may sound impossible, but this patch works. I found a small bug, but have worked around it very easily.

When my Model 4 tells me I've connected at 19200, I immediately hit one or two capitol Oh's (not zero, the letter "O"). This has kept the computer from switching to the XT4 menu, like when you hit the <BREAK> key from within the program. If the menu does come up, at any time during your session with a B.B.S. or the Internet, just hit <BREAK> and you are back the where you want to be - at 19200 baud on the Information Highway.

Of course, before you can utilize David's patch you must setup your computer and XT4 to recognize the speed of the modem. From the XT4 menu, select "I" to initialize your modem. When the selections for baud rate come up, just hit the number "7", and the new baud rate will be recognized. When you are

in the dialing directory, you must tell the computer to recognize the new baud rate. This is done by hitting the "U" key to update your directory entries, and then hit the number of the B.B.S. or on-line service you wish to update. When it asks you what baud rate, proudly hit the number "7" again. And, when all is done, you will be "out there" at 19200 baud.

One small problem is that many B.B.S.'s and online services do not yet have modems that support the higher baud rates. Some are only 2400, while others may be running at 9600 or 14,400. In any event, you will be able to run up to 19,200 depending on the other end of the line. It is very exciting when you first hook-up at the higher speeds. Things just seem to jump onto the Model 4 screen, instead of slowly scrolling by in front of you.

When downloading files, I have found that they do not run at the highest possible baud rate. For example, a program that took almost 5 minutes on the old 2400 baud modem now takes about 2 minutes. This is probably due to the internal time it takes the Model 4 to get, sort, check and store the information on my hard drive. I have not yet figured out how to make the Model 4, running under the patched XT4, to download in other than "X" modem protocol. "Z-Modem" seemed to work fastest on the old XT I have - running at 2400 baud. It probably saves about 10% of the downloading time as opposed to using the "X" modem protocol. I have downloaded the same stuff just to test the difference between the protocols available on the IBM XT, so I know that under "Z-Modem" it's faster and more reliable than "X-Modem" protocol.

Even though you can't yet get the full speed when downloading with a new 19,200 baud modem, 2 minutes compared to what used to take 5 minutes is still 2 1/2 times faster (250%) at the least. Think of the time savings you can realize with a new modem and a patched XT4 program. It must be XT4 version 1.8.7a, though. It does not work on any other version of XT4. After patching the correct version of XT4, I used REMOVE to rid my hard drive of the original XT4, and then used RENAME to call XT4V187A just plain XT4. The XT4/DAT file still worked fine with the above changes to the dialing directory.

One last note. When you setup the dialing directory, use "*70W" BEFORE the phone numbers in your directory if you have the Call Waiting feature on your phone line. Nothing is worse than getting near the end of a download or upload file and having someone call in on the Call Waiting line. "ALL IS

LOST!" if you don't have the "70W" typed-in before the dialed number.

HAPPY SURFIN' with David Goben's patch for XT4V187A and a new 19,200 Zoom modem from CN 80. Oh, my wife wants the other wifes out there to know that all of this DID NOT cut down on the time that I am "lost" in cyberspace. All it did was make that time much, much more productive for me. Well, you can't have everything, can you?

-Ed Henderson

SURGE PROTECTION FOR YOUR COMPUTER

by CN80

Electronic equipment, not just computers but all electronic equipment such as Television Sets, microwave ovens and equipment that has any kind of little "black-box" of electronic chips that help it run is subject to the destructive power of a voltage spike if the unit is plugged into a wall socket that provides the electrical power that runs the unit.

A power "spike" or "surge" as it is more commonly referred to is a sudden and usually very short lived surge of voltage that exceeds the normal highest voltage that is usually provided by the power circuit. This surge can be caused by a malfunction from the generating equipment of the power company, a sudden jolt of lightning striking the power lines or one of several other causes. The use of a surge protector can protect your computer from receiving a sudden shock wave of power that could damage the delicate computer chips that are the heart of your computers operation.

The other standard protection that should be provided for you computer is protection from RFI (radio frequency interference) which also can be supplied through your power line. Commonly referred to as noise on the line, or dirty power by electrical engineers. The surge protector that provides RFI protection contributes to the safety of the information stored in your computers memory and on the disk drives as you are computing.

Recently we read where a supposedly computer guru advised against purchasing a surge protector for your computer and associated equipment. His comment was "if you are afraid that the power line might get struck by lightning during a rain storm, just pull the plug." But how many of us are home everytime it

rains, or even if we are home when a sever storm hits have time to think about running to the computer and pulling the plug from the wall socket? We consider this guru's advice although sound in many of his other advice is wrong in advising people not to protect their equipment by purchasing a surge protection unit.

There is one more advantage to owning a surge protection unit that has several power outlets on it and a master on and off switch, and that is because you can plug all your equipment into it and then turn it all on, or all off at the same time. By throughing the switch off on the surge protector you don't have to see that little red glow of the printer on light glowing in the middle of the night when you turned your computer off, and in a rush left the printer on.

CN80 can provide you with a quality surge protector - see display ad section - for as little as \$10.95. We have seen this same type of unit on sale in some stores for \$19.95 and as high as \$29.95. However wherever you buy one, do purchase one and use it. It is a very small price to insure your computer against unseen damage.

(Note the following article was printed in Computer News PC but we thought it should also be available to readers of CN80 as well)

ARE WE PAYING FOR MORE THAN WE NEED

**AND GETTING TOO MANY HIGH TECH
PROBLEMS AND FRUSTRATIONS?**
by Harold J. Hendriks

OF COMPUTERS, FERRARI CLONES AND CIGARS

Shopping for a new computer today can be a very frustrating experience. It is somewhat akin to shopping for a new car and finding that no matter what dealer you go to, all you can find are "jazzzzed" up, trouble prone, high tech Ferrari clones powered by super-charged, 16 cylinder, 64 valve engines with dozens of high-powered add-ons, all for a hefty price tag.

Very few drivers have the driving skills to handle all that horsepower and wouldn't know what to do with it if suddenly all that power was released and came surging out from under that long and low sleek hood. Let a minor glitch in the electrical system

come along that causes the logic that controls the timing of the fuel injectors to drop a logic bit, and that spells "Trouble" with a capital "T"!

The most frustrating part of the experience is that if you try to tell the salesman that you don't need or want and can't use all that power and speed, he does his best to convince you that you can't get along with any thing less and be happy. And he probably ends up making you feel like an idiot because you think you can make do with less.

Very few individuals or home users really need a super fast 486DX or Pentium monster with "umpteen" megabytes of memory, a "hughmongous" hard disk and a quadruple speed CD-ROM. But yet, if you go shopping for a new computer, that is about all you can find now a days. Let a glitch occur in an obscure "*.INI" file when you are trying to install a new applications program and that spells "Trouble" with a capital "T" for all but the most experienced users!

If you try to tell the salesman that all you really need and want is a good, reliable and inexpensive 10 MHz, 286 XT computer with 640K of memory and a 40 Meg hard drive, he looks at you and treats you like you must be NUTS. Just uttering the innocent word, "inexpensive", is enough to make the average computer salesman go ballistic

Computer manufacturers are constantly hyping computers with ever more and more power and speed to out do the cut-throat competition. Computer salesmen sell them to the gullible public, most of whom don't know a megaHertz from a megabyte and don't know that they really don't need, and furthermore don't know that they don't know how to use all that power and speed.

An old vaudeville gag line used to go like so, "What this country needs is a good five cent cigar." What we need today is a good, reliable, sensible computer for \$500.00 or less.

THE INFERNAL MACHINES

"Forbes", the top notch business magazine, is very definitely NOT anti-computer. The magazine frequently features well written articles telling how the intelligent use of powerful computers is a big aid to achieving more efficient, effective and heads up management of business operations. "Forbes" writers are not dummies. They are not anti high tech. They are sharp, competent and up to date.

Knowing full well "Forbes" commitment to the intelligent use of computers in business operations, the "Forbes" cover story for the issue of March 13, 1995, is most interesting and significant. Blazed in big red letters on the front cover of the issue is the title of the featured cover story, "THE INFERNAL

MACHINES", with the subtitle, "Will exasperated consumers stop buying PCs?".

On the bottom half of the front cover of that issue of "Forbes" is a humorous cartoon showing four very frazzled and frustrated computer tech support workers at their desks. Each worker is depicted sitting in front of a computer and talking on a telephone. The "balloons" used by cartoonists to depict dialogue and/or conversation totally fill in all the space above and around the heads of the tech support workers. Every one of the numerous "balloons" contains the words, "Tech Support, Please hold . . ."

At the very top of the first page devoted to the feature story, placed above even the title of the article, is the following question:

"As billions of dollars of powerful multimedia machines go into the mass market, do John and Jane Public really require all that technology?"

The following brief quotes are culled from the article:

"Technology is on a collision course with marketing. The PC market demands faster chips, bigger screens, more memory and fancier software. But these gadgets have far outstripped the technical competence of the typical user."

"You come home from Walmart with a 166-million instructions per second monster, controlled by an operating system with 3 million lines of code, and if something doesn't work, you are expected to fix it yourself."

"A generation ago that kind of computing power would have resided in a multimillion-dollar mainframe, sold by IBM with a markup that amply covered the costs of an army of technicians who made house calls. Don't try to get your discount mail-order vendor to make a house call."

"Maybe the PC has been oversold at its present stage of development. Hey, do you really need that quadruple-speed CD-ROM Pentium PC to educate your kids and to keep yourself from becoming obsolete?"

The article clearly differentiates between the technical competence and the real needs of business, industry and commerce as contrasted to the technical competence and real needs of John and Jane Public. The article concludes, "Novelty aside, are multimedia and Internet really that essential to most people's daily lives? There's still a lot to be said for opening a book or a magazine and staying current the Gutenberg way."

THE TRIED AND TRUE TANDY 1000'S [or Model I, III, or 4.]

The Tandy 1000 line of computers, from the original 1000 up through the 1000RSX-HD, was and is an excellent line of computers. Many of them are still in operation and are still giving reliable, dependable, hassle-free service to their owners.

If you're still using a Tandy 1000 series computer, be it an original 1000, an EX, or an SX or a TL or an RSX version, and it is still in good working condition, and still doing the job you bought it to do, then the sensible thing to do is to keep it and to keep it in good running condition. If you do so, you can save lots of money and avoid the hassles and frustrations that the "Forbes" article, the "Infernal Machines", so clearly and succinctly describe.

If you know where to look, if you know what you are looking for, and if you know a good bargain, it is not difficult at all to pick up a used Tandy 1000HX, SL, TL, etc. in good condition for a bargain basement price. Often times you can get a lot of good used software thrown in with the deal. Check with "Computer News PC".

From writing letters to manuscripts, from effectively using any number of good database programs to using any number of good spreadsheet programs, a good Tandy 1000SL or 1000TL is all you really need. And you can buy such a computer for a fraction of the cost of a new, super fast 486DX monster with "umpteen" megabytes of memory and a "hughmongous" hard disk and, as a bonus, experience far fewer maddening frustrations and problems.

If you start your kids out with a good used DOS based computer, they will learn a lot more basic computer savvy than if you start them out navigating windows. There is plenty of time for them to pick up windows know how later on.

THE TECH NOTES & JUMPER MANUALS FOR THE 1000's

"Computer News PC" is now publishing the two "Tech Notes & Jumper Manuals" for the 1000's which were initially written and published by Micro Systems. If you own and use a Tandy 1000 series computer, these two manuals are a "gold mine" of information for you. The Tech Support supplied by these two manuals is more reliable and accessible, and much more hassle-free than the so-called tech support depicted in the "Forbes" article.

The manuals are clearly written and are relatively easy to read. Even if you are a relative novice, you can learn a lot about computers in general and a lot about your particular Tandy 1000 model.

A few evenings spent reading and studying the manuals instead of watching the boob tube can be very rewarding. When you first start reading the manuals, you may think you're not learning much, but little by little, you will find that you can learn a lot.

I wholeheartedly recommend the two "Tech Notes & Jumper Manuals" to all readers of "Computer News PC". Even if your PC is not a Tandy 1000 series computer, the manuals contain a lot of good, general information that is applicable to most PC's. An upcoming article in a future issue of "Computer News PC" will review some of the outstanding features and contents of the two "Tech Notes & Jumper Manuals".

GOODBYE AND GOOD LUCK

Enough for now! I'm out of time and out of space. It's time to get down from my "soap box".

May you experience happy, productive and economical computing, free of the hassles and frustrations of trying to get through to Tech Support to find out why your new, glitzy, expensive, high speed, high-powered Pentium computer keeps hanging up on you when you try to access the quadruple speed CD-ROM. Just keep using your tried and true and reliable Tandy 1000 series computer. Best wishes until we meet again.

-Harold J. Hendriks

ALLWRITE MADE RIGHTER

by Ronald Garbin

In the July 1993 issue of Computer News 80 appeared a letter by John Mercer. It described puzzling behavior by the Allwrite word processor. Mr. Mercer found that a pitch specification (pi), used with the line skip command (sk) or the line break command (br), often leads to the printing of an additional, unexpected blank line. In a later issue of Computer News 80, I listed all the Allwrite quirks known to me, including the one reported by Mr. Mercer. About two of those quirks I now have something more to say. The present article deals with them, plus an interesting, newly-noticed undocumented feature of the program.

THE UNEXPECTED BLANK LINES

The printing (mis)behavior cited by Mr. Mercer arises, I now believe, under specifiable circumstances; namely, it results when you are printing in columns (e.g., ;cb2) and in your text occurs a pitch command sandwiched between two

other format instructions, each of which, in itself, will also break a print line. For instance, I find that the combination ;br;pi16;tb\10 causes an unexpected blank line to print. This seems to happen because the ;br and the ;tb are separated by ;pi. If you change the order to ;pi16;br;tb\10 so that ;br and ;tb are juxtaposed, then printing occurs as it should, and no blank line occurs.

The same thing happens with other combinations such as ;sk;pi16;ll25 or ;ls2;pi16;juon or ;ce;pi16;hy^. All these cause the extra blank line, until you rearrange the commands so that ;pi no longer splits the other two commands. If for some reason, or by accident, you employ TWO pitch commands to separate three other format instructions, each of which by itself breaks text, then TWO extra blank lines will print. All this suggests a simple rule; and if the rule holds, you have a work-around to the formatting anomaly. To avoid printing extraneous blank lines, just never let ;pi separate any two other format commands of the type which break text. If you cannot always avoid this, you now can at least always know what will print.

UNEXPECTED BLANK SPACES

Allwrite has the further formatting quirk of printing an unwanted blank space right after a format combination like ;pi16;im FILE or ;pi16;ar1 or ;pi16;se1=x. To illustrate, suppose we here break our ;pi16 text by inserting ;sk;pi16;cm=same pitch

Notice that this next line is shifted rightward to accommodate an initial blank character that should not occur. Any combination that starts with a pitch change, even one like ;pi16;cm, produces that extra blank, as long as you follow ;pi with another formatting command which does NOT break a text line. The only exceptions involve the commands ;sy or ;tr or ;da. The combination ;pi10;da3, for instance, causes the ensuing text to print without the spurious initial blank.

The extra space does not print at all, of course, if the ;pi is followed by a format command that DOES break text (e.g. ;pi16;lm15).

To avoid the extra space, you could just avoid using any of the now-identifiable format combinations that cause it. But a better solution results from the following patch.

PATCH ALF/CMD (D25,22=1A:F25,22=20)

Instead of a space, the Allwrite Text Formatter will now "print" the low-code character 1AH. This has no width and never reaches the printer. I believe this solves the problem completely.

COMMENTING FORMAT COMMANDS

Lastly, Gary Shanafelt has pointed out to me that Allwrite lets you comment your format lines by using the single quote mark ('), just as in a BASIC program. For instance, you can change your font with this instruction:

;pi16 ' Letter Gothic, 9 pt, regular

And the single quote sets off a comment reminding you of which font the pitch invokes.

I've since realized that you don't need even the quote mark: in processing a format line, Allwrite ignores everything else until it finds the control word (; is default). Then Allwrite checks the characters that follow it, to see if they correspond to a syntactically correct, acceptable format command. If so, the program processes it. Then Allwrite searches further until it finds another control word starting another possible format instruction--or else reaches the end of the line. Between format statements on a single line, therefore, you can insert comments, and the Text Formatter will just skip them. For example, Allwrite will correctly process the following:

;ll55 [5.5" LINE] ;pi20 [TIMES ROMAN] ;sy198 [DEGREE SYMBOL]

as just ;ll55;pi20;sy198. Only if what follows a control word makes no sense as a format statement, will Allwrite display an error message and stop. Of course at the very start of a format line must occur the control word; otherwise Allwrite will treat that line as text. Also, you should take care not to insert comments in an ambiguous way. If you want to use ;pi1 and remind yourself that "1=prestige elite," don't run the strings together:

;pi11=prestige elite

Leave a space between ;pi1 and the comment.

Allwrite has so many formatting features and handles the laserjet so well that I continually find new things possible. It is hard to resist experimenting, but sometimes page layouts do become complicated. I hope my comments simplify some of those for other Allwrite users. Good luck.

-Ron Garbin

(Editor's Note: Legal copies of Allwrite are not available except on the used market as it is no longer being produced. We are happy to publish articles that contribute to the use of a program by its users even though it is no longer available.)

BCX2 REVIEW, PART 2

by Harold J. Hendriks

BCX2, AN IMPRESSIVE SPREADSHEET PROGRAM

This article adds to and supplements my previous article, "BCX2 - AN INTRODUCTORY REVIEW", which was published in the May 1995 issue of "COMPUTER NEWS 80".

I have now had a bit more than three weeks to work and to play with BCX2 on my 128K Model 4P computer. Due to my dear wife's critical and serious illness, I haven't been able to spend as much time with BCX2 as I would liked to have done. Consequently, there are still some features of BCX2 that I haven't had the time to fully explore.

However, the more I use BCX2, the more impressed I am with it. I really like it. BCX2 is, without doubt, the most powerful, the most comprehensive, the fastest and the most user-friendly spreadsheet program ever developed for the Models 4, 4P and 4D computers. BCX2 requires extended memory with a minimum of 128K of memory.

I did not have enough time or space for my "Introductory Review" of BCX2 to deal adequately with anywhere near all the great features of this powerful and useful program. Two of the powerful "Replication Commands", the "Printer Options Command" and the powerful @LOOKUP() function deserve more consideration than I was able to devote to them in the previous "Review" article.

BCX2's fast, powerful and easy to use Replication Commands are very convenient and helpful when it comes to creating a new spreadsheet or expanding an existing one. A formula contained in a cell can be replicated to another cell or to a linear range of cells, either horizontal or vertical. The formula can be replicated with no change or replicated with the relative references updated for each cell in the destination range of cells.

The Replicate Format Command is especially useful and convenient. This Command replicates the formatting of a cell or a range of cells to another cell or range of cells.

The Printer Options Command, which is a subcommand under the Options Command, provides a convenient and easy to use means to initialize and/or to configure the printer. The submenu under the Printer Options Command also provides, amongst several other options, for setting the carriage width or print width, sending a Carriage Return only (CR-Only) or a Carriage Return plus

Line Feed (CR+LF) to the printer. These are very useful options.

The @LOOKUP() function is a powerful and very useful function which can extract a numerical value from a table and insert the looked up number into the cell containing the @LOOKUP() function. The table can be anything from a discount table to a tax table, etc. More about the powerful @LOOKUP() function and other powerful BCX2 functions in future articles in "CN 80".

SWATTING A FEW "BUGS"

It is unrealistic and unreasonable to expect that a new program as large and as complex as BCX2 would be totally "bug" free when it is first released. Finding "bugs" in a large and complex program is somewhat like looking for small needles in a large haystack or looking for minor typo errors in a large and complex document.

Although a few minor "bugs" have cropped up, you can rest assured that David Goben, the programming genius behind BCX2, will promptly correct all reported "bugs" in a short time. Corrected updates of the program will be made available to all who purchase BCX2.

So far, the very few minor bugs that I have encountered, or have been informed of, have not prevented me from making full and effective use of BCX2. I have been able to work around them quite easily. Since I have been assured that the reported bugs are either fixed or are being fixed, I will not take the time or space to discuss them here. They will all be fixed by the time you read this article.

One new BCX2 user has reported a problem with VisiCalc spreadsheet files that have been converted to the BCX2 format using the conversion utility supplied with BCX2. I have used the conversion utility to successfully convert several large VisiCalc Spreadsheet files, each of which included extensive use of rather complex formulas. I have encountered no problems or "bugs" with converting VisiCalc files and loading the converted files into BCX2.

The first time I loaded a converted VisiCalc file into BCX2, many of the value cells contained only zeros. The first thing I did was to recalculate the converted and newly loaded spreadsheet. Upon recalculation, all cells displayed the correct values which I checked against the printout of the original VisiCalc spreadsheet. I have encountered no problems whatsoever with converting VisiCalc files and loading the converted files into BCX2.

Continued on the next page.

BCX2 DOCUMENTATION

Good, concise, clearly written and well-organized documentation is a very important part of any good computer program. If the documentation is poorly done or inadequate, it is difficult to make full and effective use of a new program with many powerful features, that is, unless the user is an expert programmer and/or a computer expert.

A good, but somewhat feature-poor program with good, clear documentation is generally more useful for most users than is a very powerful, feature-rich program with poor and inadequate documentation.

Since good documentation is so important to the successful use of a good program, the main purpose of this article is to discuss the documentation for BCX2. The documentation is in two parts:

The "BCX2 USER'S GUIDE" consists of 150, 8-1/2 x 11 inch pages bound in a three-ring, loose-leaf binder. The loose-leaf, three-ring binder format makes the manual very convenient and easy to use.

The supplemental spiral-bound "QUICK REFERENCE GUIDE" contains 14 pages. Once you get fairly well acquainted with BCX2, the small and convenient "QUICK REFERENCE GUIDE" will be more than adequate for most of your reference needs.

The BCX2 documentation covers every feature and aspect of the BCX2 program in a very complete and well-organized manner. The documentation is concise, to the point and clearly written.

The nine-page "TABLE OF CONTENTS" for the "BCX2 USER'S GUIDE" is in the form of a detailed, outline. The "TABLE OF CONTENTS" is well-organized and very complete.

THE "BCX2 USER'S GUIDE"

The BCX2 User's Guide of 150 pages contains four Chapters and five Appendices.

CHAPTER 1: INTRODUCTION. This chapter contains a brief introduction to spreadsheets and to BCX2, plus detailed instructions on preparing a working BCX2 diskette for use on your Model 4, 4P or 4D computer, and instructions for loading the program.

CHAPTER 2: TUTORIAL. This chapter contains three "LESSONS" which "holds the hands" of the new user and guides him or her through the fundamentals and the use of BCX2. If the new or inexperienced spreadsheet user will diligently work through the three lessons step by step, BCX2 will

come to be an easy to use, user-friendly program. Don't jump to conclusions. Working through the three lessons will require some discipline, some thinking and some detailed work and effort.

CHAPTER 3: COMMANDS. This chapter describes and outlines the use of the Cursor Motion Commands, the BCX2 Commands and the supported Arithmetic Functions of Addition, Subtraction, Multiplication, Division, Exponentiation, Roots and the Modulo function. The chapter also discusses the concepts and uses of "Coordinates", "Ranges", "Named Ranges" and the use of "Coordinates" and "Ranges" in formulas.

The main purpose of Chapter 3 is to describe and outline the use of nearly twenty basic BCX2 Commands such as "Blank", "Clear", "Delete", "Edit", "Format", "Insert", "Move", "Print", "Replicate", "Storage", etc. Many of the basic BCX2 Commands such as "Format", "Insert", "Print", "Replicate", "Storage", etc. involve the use of two or more subcommands. The descriptions of the basic commands and associated subcommands and instructions regarding their use are complete, clear and concise.

CHAPTER 4: FUNCTIONS. This chapter describes and outlines the use of 75 powerful functions such as Trigonometric Functions, Logic Functions, Date and Time Functions, and functions that count entries or items in a list, sum portions of columns or rows, return average values, etc. BCX2 is a "Function Rich" program. The large collection of a wide array of powerful functions contribute greatly to the power of BCX2.

APPENDIX A: Differences between VisiCalc and BCX2. This appendix lists, describes and outlines the Command differences between the two spreadsheet programs.

APPENDIX B: Differences between Busy-Calc and BCX2. Describes and outlines the Command differences.

APPENDIX C: Differences between BCX and BCX2. Describes and outlines the Command differences.

APPENDIX D: Disk File Formats. Describes and outlines the file formats for BCX2, BCX, Busy-Calc, and VisiCalc, etc. Unless you are a programmer, this is pretty deep stuff for the average spreadsheet user. However, reading through this appendix can be very instructive.

Continued on the next page.

APPENDIX E: Decimal to Hexadecimal to ASCII Conversions. Useful information.

THAT'S ALL FOR THIS TIME

In conclusion: BCX2 is a superb spreadsheet program for the Models 4, 4P and 4D computers. Although BCX2 is very user friendly and easy to use, it is loaded with powerful and useful features and functions.

To top it all off, BCX2 comes with a much better than average documentation package. On the scale of one star for a poorly written or mediocre documentation package to five stars for a superb, top-notch package, I would rate the BCX2 documentation package at four and a half stars.

The documentation aside, the BCX2 program, rated on its own merits, is a five star program. If you are currently using either VisiCalc or Multiplan on your Model 4, 4P or 4D computer, give BCX2 a try. I'm sure you will find it to be a super spreadsheet program.

It is great new programs such as BCX2 that can add years of useful and productive work that we can accomplish using our reliable, easy to use and capable Models 4, 4P and 4D computers. Long may they live and keep working faithfully for us, and long may programming geniuses such as David Goben continue to develop new programs for our very useful Model 4's.

-Harold J. Hendriks

SUBMITTING ARTICLES AND PROGRAMS

Contributions to CN80 are valued from anyone. We want to be as varied and as helpful as possible.

Programs and articles must be on a disk saved in ASCII and have a hard copy enclosed.

Programs submitted for publication in CN80 must be released into the Public Domain.

Shareware and Public Domain Programs for the File Cabinet Library are welcome and will be reviewed in future issues.

Material submitted cannot be returned. It is understood that all material received is submitted for publication for free for the education and assistance of fellow Model I/III and 4 users.

GET ONLINE!

by Jeffrey Scott Bowlen

With all of the many applications a TRS-80 Model 4 can still effectuate well in this age of Pentium and PowerPC processors, one practice seemingly remains undervalued -- that of using the Z80 machine to access the Internet. Understandably, the Model 4's inherent limitations to display boldfaced, underlined or blinking characters impedes it from emulating more fully a VT100 data terminal. (The VT100 emulation, which originates from the Digital Equipment Corporation, is the code which most remote systems apparently use today. For your home computer to communicate with a remote system it must understand the signals it receives through the telephone line. When it doesn't understand, this miscommunication often results in illogical or unrecognizable characters appearing on your screen.) However, I contend this need not stop us Mod 4 users from still enjoying much, if not all, of what the Internet offers. Through what I hope will be a series of articles, I wish to delineate the obstacles, wonders and exigencies involved in getting on the 'net with the Model 4.

THE FIRST STEP: FINDING THE RIGHT TERMINAL PROGRAM

To have your computer communicate with another computer through the telephone line it is necessary to have a modem and a communication program. Many articles have appeared here before explaining the procedure of communicating with bulletin board systems and other remote computers so I shall not explore it in this writing. More important to this discussion is the kind of communication software needed to access the various applications found on the Internet. Such software should be able, among other attributes, to emulate a DEC VT100 data terminal. And this, unfortunately, is where much of the difficulty arises for the modest Model 4: very few TRS-80 communication programs available today are endowed with VT100 emulation capability.

There is of course ANSITERM4, a product distributed through Computer News 80 which adequately provides VT100 emulation. ANSITERM4's strength lies in rendering ANSI graphics with the help of either a MicroLabs or a Tandy high resolution board. But limitations in the hardware make this program less than desirable for using on the Internet. With the MicroLabs product the display slows down immensely when it reaches the bottom of the screen; the user must periodically clear the screen or risk losing incoming data after awhile. This practice, I can reliably relate, is cumbersome and frustrating. Although VT100

emulation does include screen clearing codes (which the Model 4 can accommodate), not every application on the Internet always employs them. Utilizing ANSITERM4 to read newsgroup postings of more than one screen's length necessitates my erasing the display before viewing the remaining information, lest I wish to wait painfully for it finally to come into view. By contrast, having a Tandy board in place of the MicroLabs counterpart somewhat eliminates the difficulty of slow scrolling. Other problems, however, persist with this alternative. The most compelling one is that, unlike with the MicroLabs board which is still available through CN80, the Tandy peripheral is gone from the marketplace. Even should one be found as a second-hand item, when used with ANSITERM4 the board produces video snow as it echoes, or displays, characters to the screen. Moreover, slow scrolling still occurs when one's modem speed approaches 9600 baud.

Exacerbating these technical restrictions is the obvious problem of cost. While adding a high resolution board to one's Model 4 is perhaps the least expensive, easiest and most gratifying of all upgrades, a user shouldn't be required to purchase one simply to enjoy VT100 emulation. Clearly, an alternative plan would seem in order.

Shareware programs suggest a possible solution. In fact in its October, 1994, article on the Internet CN80 mentions one such piece of software, a program called VT100/CMD. (The application is available in the File Cabinet Communications Library, on disk M4COM04.) Regrettably though, VT100/CMD leaves much room for improvement. For example there doesn't seem to be a way to change the modem speed from 300 baud. More importantly, the upload and download routines do not function properly. This is indeed unfortunate because part of the beauty of a terminal emulation program is that it permits a computer to behave beyond the capacity of a mere data terminal; it can also enable a computer to send and receive information from the host machine. Full-text novels, research citations, fantastic GIF images, memorable newsgroup postings -- the Internet holds these treasures and so much more. But what good is finding such a trove of information if you cannot get it into your Model 4? A good terminal emulation program always should include the capability to log ASCII files (that is, as text scrolls onto the screen the program stores it first in the computer's memory and then transfers it to disk) and to send and receive files at least via the X-Modem protocol. Actually, given that some remote systems may no longer support this form of data transmission it would be wonderful to have

available a program which supported the Y-Modem Batch, Kermit and (if possible) Z-Modem protocols in addition to the various permutations of X-Modem. (To its credit ANSITERM4 does allow for ASCII file logs, and offers X-Modem Checksum, X-Modem CRC, X-Modem 1-K as well as Y-Modem Batch protocols. However, ASCII file logs become virtually unreadable when either LISTing them from the TRSDOS Ready prompt or using a text editor (or David Goben's wonderful DSPTXT utility). Undeciphered emulation code litters the screen while a multitude of additional, unexplained line feeds greatly diminishes the amount of actual text available on the display at one time.)

Though other VT100 emulation shareware/freeware for the TRS-80 may exist I cannot say with certainty where one may find any. And if such software is available I am dubious of these programs' ability to permit modem operation above 1200 baud or to perform adequate file transmissions. What course, then, is left for the Model 4 user to follow?

One less than satisfactory answer is the used market. Among all of the proprietary (and now commercially unavailable) software made for the TRS-80 in the 1980s at least two programs provided the Model 4 with VT100 emulation. These were Teleterm by Telexpress, Incorporated, and Omniterm Plus by Lindbergh Systems, Incorporated. Both support X-Modem and ASCII file logging, and both will accommodate modem speeds up to 9600 baud. And since neither requires a high resolution board there is no problem with slow scrolling. On the other hand, the Model 4's aforementioned character display limitations can compromise either program's performance. (I've noticed the most trouble in the World Wide Web text browser lynx, where Omniterm Plus cannot display the links properly and Teleterm struggles to emulate Web screens on certain systems.) While some of these obstacles perhaps would be endemic with any TRS-80 VT100 software, both Omniterm Plus and Teleterm at least permit the user to edit their communication tables for potentially better performance. (A helpful companion in this endeavor is Appendix C / Character Codes, found in the back of the Disk Operating System and BASIC Interpreter manual for TRSDOS Version 6.). Even without the tweaking, however, both software packages perform quite adequately for nearly all Internet applications.

Still, unless you are fortunate enough to acquire a copy of either program or something similar in the used marketplace you are faced then with a difficult decision. You may either purchase ANSITERM4 along with a high resolution board and tolerate scrolling and ASCII downloading inconveniences; or

you may decide upon less expensive shareware/free-ware, realizing these applications may afford limited amenities with uncertain results; or you may ultimately deem, as I very nearly did, this online challenge to be too difficult for the TRS-80 to overcome, and instead look longingly towards the Mac or PC realms to satisfy your Internetting needs. The choices, regrettably, are not expansive. But perhaps the situation is not as despairing as it appears. This past week I read a newsgroup post stating that Richard VanHouten, author of ANSITERM4, is at work preparing a TRS-80 software package titled VTTERM. This program, the post related, will provide VT100 emulation for the Model 4. No other details about it were mentioned but one can only hope Richard will make his program at least as versatile as Omniterm Plus and Teleterm are. Ideally, all of the file transmission protocols mentioned above would also inhabit VTTERM.

Assuming one possesses an adequate VT100 emulation program the next step for getting onto the Internet is having a service provider. In my next article I shall discuss how to access these providers, how much they may cost and how you may already have such access without even realizing it.

-Jeffrey Scott Bowlen

Editor's Note: We welcome Mr. Bowlen's input of experience and article, and we look forward to his future contributions. It is true that one of the most overlooked values of the Radio Shack Model 4 computers is its inexpensive way to open the door to the rest of the world through the use of a modem, a phone line, E-mail and as a connecting tool to the internet.

AWARI

AN OLD AFRICAN BOARD GAME REVIVED

By Henry H. Herrdegen.

I found this game, you against your computer, on File Cabinet disk MD4GAM04, and, by analyzing it, got the impression that it likely originated with CodeWorks. The short text lines as well as the screen displays being crowded onto the left margin to suit a 64 column screen, and the multiple "PRINT" statements with semi-colons, seem typical for their programs, written for several different machines and BASICs. Now it is customized for our LS-DOS BASIC.

Blanking out and/or spacing of prompts and displays was done with spaces between quotes, but who wants to count them, especially if the program printout is in proportional font? Besides, there was a Syntax Error, 3 dead (no function) lines at the end and a dead variable (some leftovers?), and it did not update the game board if the winning move was the computers, and the score board only at a new game. So, I decided to re-write it a bit. Introduced the CHR\$ variables in lines 10 and 12 to shorten some lines and to get rid of the blank spaces, took out the superfluous PRINT statements, fixed the board updates, combined a few lines, changed the instruction text lines, centered the display on the screen, and renumbered it.

The original was also lightning fast to change the display after a computer move, so you sure missed seeing and comprehending what it was. There is now a delay loop (L 550), or even a pause (to analyze or write down the moves and results) until you hit <ENTER> (L 552). To activate the pause function, move the remark symbol (*) to L 550, the time delay, the default as printed.

It is an interesting game, the Computer is pretty smart, but by no means unbeatable. My best game so far was a 3 point win in 18 moves, the computer beat me in 17 moves with 10 points. The math the computer uses to evaluate and plot its moves is not easy to follow (I have not touched it), and is in the subroutine block 500.

Yeah, I know. The text should be at the end and the subroutines at the beginning of the program to speed it up. But, it is short and fast anyway, so I did not feel it worth going into it that deep. Forgive me.

I was also toying with the idea to take the computer out and make it a game for two players, but shied away from it. Maybe someone else will tackle that. I was not successful in my library search for the origin of this game, and its rules. A Model III program book printed another version, with different rules, board and number of beans, calling it only "WARI". If someone knows more about this game, please let us know.

-Henry H. Herrdegen

REMINDER

If the last four digits on your mailing label are 95/06, then this is your last issue. Time to get your renewal in the mail.

MOVING?

Remember to send us your new address.

WRITECHK/BAS

A CHECK WRITING PROGRAM IN BASIC

by Robert Knowles

(See Program Listing Number Two.)

Necessity is indeed the mother of invention, I was having trouble writing a program to write checks, as everyone knows its a very simple program to write but I couldn't get the idea until both my typewriters went down at once, I don't mind paying my bills but I don't like to write checks and with both my typewriters down at once what can I do? The bills must be paid, maybe I can use my computer, the printers still work just fine so I ordered some fanfold checks and the minute I saw them I knew how to write the program. It took about half a day to write. It takes time to write even short programs. Its just like the checks you get from the bank, you must get a record book from the paper store to record who you sent the check to, the program is a very simple program and will only write the check. When you get a record book, get a good one, don't just grab one off the shelf thinking that any one will do, they are not all the same, open it up and think about it, what will go where, then when you get it home you won't find out that it is no good for checks.

Line 5 is to set the margin, the left margin should be set, the print head can catch on the side of the check and print in one place if you don't set the margin. Line 10 is to clear the screen, just in case there is something on the screen, its much easier to see what your doing if writechk/bas is the only thing on the screen. Line 30 is an input line. Let's look at an input line. Input is just what it looks like, it stops the program and waits for you to input something. Then we have something in double quotes to tell us what to input. In this case it's the name of who the check is going to, then we have a semicolon, the semicolon must be there or you will get syntax error in 30. All that means is something is not spelled right in line 30. And you must have a variable to store your input in and a dollar sign that must be there or the program won't work right. Unless your sending the check to an account number, because a variable without a dollar sign is only good for numbers. To do characters you need a dollar sign. That is very strange. You can put only numbers on a variable and no characters, but a variable with a dollar sign you can put numbers and characters. Line 40 is your escape. If you are done: type DONE for name. But if you enter a name then decide you're done, it won't work. Then you must push break. I put the escape line in because I think it makes a much neater program. Lines 50-70 are just input lines. Line 80 is lprint string\$ again.

You must have the dollar sign. I use the word *must* a lot, and its very true. If you don't do it the way the computer wants it done then the computer won't do it. So you must follow the rules if you want to do anything with a computer. Lprint string\$ is telling the computer to give us 4, 10, four is the count and ten is line feed so we will get four line feeds to move us down to the line that has the date on it. It takes practice to see just where to start your checks at but once you figure it out you should have no trouble. Then there are lprints to move us down to the line for the name. Line 110 to lprint the name at tab(20) then at tab(72) we print the amount. Then lprint to move us down to the next line to print out the amount. Then lprint string\$ to move us down to the memo line. Some companies like you to put your account number on your check. Then lprint string\$ to move us down to the top of the next check. Then goto 30 to go back for the next check, and end.

Everybody has checks they write every month and they never change, every month its always the same so why not put them in a direct access file. Then all you would have to do is enter the record number and the computer would do all the work. With this program and the direct access program for mailing envelopes and a little thinking you should be able to write a program like that. I did it and it works well, but if I tell you how then you don't get a chance to try it yourself. If you do try it and run into trouble send me a copy of what you did and I will try to help you.

-Robert Knowles

MOVING FILES BETWEEN COMPUTERS

by CN80

In earlier years it was more difficult to move files from one computer to another than it is today with the many utility programs that make the process so easy, but even then it was not totally impossible.

SAVING IN ASCII CODE.

In most cases the files you want to move between a Model I and a Model 4 computer, or from a IBM/clone operating with MS-DOS to a Model 4 computer, should be in pure ASCII code before transferring the files. Therefore before moving data files or text files between two computers that have different operating systems you will want to first store your data files in ASCII code. ASCII Code stands for "American Standard Code for Information

Interchange."

What this means is that; if your text file, written with the word processor of your choice, does not store the text in ASCII files as some do, then look through the program's manual to find out how to save the files in ASCII. Many programs already have this option which you can call up from their menu. When this option is used it will save your data file to a disk in pure ASCII code rather than a compressed file format of its own choosing.

Other programs which do not have a routine in their menu for storing files in ASCII require you to PRINT the file to a disk file, just as if you were sending the text to a printer. Except that you would reroute the output going to a printer and send the output to a disk. The program's manual should give you instructions for doing this re-routing.

HOW CAN I TELL IF MY PROGRAM SAVES IN ASCII?

There is one simple test that you can use to tell if your data or text file has been stored in ASCII. If your source files are on a disk and you are using a TRS80 computer go to DOS Ready and type:

LIST *name of the file* <ENTER>

If you see the text flow onto the screen without any funny characters or other hangups, then your file is stored in ASCII.

If on the other hand your file was created on a IBM/PC computer using MS-DOS then go to the PC drive and directory where your file is stored and at DOS Prompt type:

TYPE *name of the file* <ENTER>

If the text scrolls across the screen in a readable form then just as above it is ASCII format.

HOW ABOUT PROGRAMS?

Yes, you can transfer program files from one computer to another, but you must remember that a program written to run under one DOS (Disk Operating System) will not run on a computer using a different DOS. Just as a program written to run on a Model III using TRSDOS 1.3 will not operate properly on a Model 4 booted up with TRSDOS 6.x, a program written to operate using TRSDOS will not operate when tried on a PC computer using MS-DOS. There are some exceptions to this rule. All computer rules do have some exceptions, but exceptions only apply in very limited situations. For example some programs written using a BASIC program, may run on a computer of a different

type, provided that the Basic Interpreter system files are the same. Most of the time the program written in Basic must be massaged to run under different Basic Interpreter system files supplied with different DOSs.

It is really a safe bet to assume that a commercial program written specifically to operate on one machine using its original DOS will not operate properly on another computer using a different DOS.

DIRECT TRANSFERRING FILES

One of the simplest ways to transfer files from one computer to another is to simply connect the RS232 serial ports of one computer to the RS232 serial port of the second computer with a cable using a null modem adapter, or a null modem cable. Or to have a modem connected to your source computer and use the phone companies lines to transfer a file from the source computer to the destination computer which also has a modem and a communication package.

Either method requires that each computer be equipped with a communication program, one to send the files and one to receive the files. When using the null modem cable direct transfer connection no modem is required between the two computers. (You will find null modem cables listed in the CN80 Product Guide for \$9.95 +(Z) S&H).

If you are using the direct transfer method via the phone line then of course you would need to have a modem connected to both the source computer and the destination computer.

COMMUNICATION PROGRAMS

There are several communications packages available for the Model III and Model 4, plus hundreds available for the PC/clone if that is the other computer that you want to connect to.

Our favorite for the Model 4 computer is XT4, it is a public domain program and comes on the File Cabinet Disk M4COM04 (\$3.50 for the disk, plus shipping) complete with a documentation file so that you can print out the manual. It also has an online help file. However there is little need for the manual because XT4 has such a user friendly menu to guide you through the operation of the program. Also on this disk are several other programs such as XTERM4/CMD and XTRANS4 which are file transfer programs.

NOW FOR THE REST OF THE STORY

Aside from all this cable connection, modem, and communication talk there is an easier way.

To copy files stored on a disk that has been formatted with TRSDOS6.x, LS-DOS 6.X.X or LDOS 5.x to a disk that can be read by a MS-DOS PC computer all you need is a copy of David P. Millers MS-UTILITY program. With this program you can copy files to or from a MS-DOS formatted disk to or from a disk formatted with TRSDOS or LS-DOS, quickly and easily using your Model 4 computer.

If you have data files that you created with TRSDOS 1.3, you would have to use the CONV command that is provided in either LDOS 5 or TRSDOS 6, or LS-DOS 6 to copy the files from a TRSDOS 1.3 formatted disk to a disk formatted with the higher DOS versions to be able to transfer the files with MS-Utility.

USING THE MODEL III/4 EMULATOR PROGRAM.

The second easy way to move files between the Model 3 and the Model 4 computers and a MS-DOS based computer is by using Jeff Vavasour's Model III/4 Emulator program. This program not only allows you to run all of your TRS80 programs on a PC computer, but you can also transfer data files to and from TRS80 formatted disks to MS-DOS formatted disks. The advantage here is that you can continue to use your TRS80 programs on your PC just as you would on your Model III or Model 4.

Supposing for example you have a Model III or 4 at home and a MS-DOS PC computer at work. Using the Emulator you can do the same work on both computers using the same program. Or in the event that you do not want to learn a new program such as a word processor or a spreadsheet, you don't have to, and still be able to use the PC computer to do your work.

AFTER THE TRANSFER - THEN WHAT?

Supposing you had a mailing list that you created with your Model III or Model 4 using a flat file data base program and you want to transfer the list into a program that works under MS-DOS on a PC. Once your ASCII version of your data file is transferred to the PC, then you would load it into a word processing program and massage it until you had it in the document layout that you want. Or in the case of spreadsheet data or maillist data files you would add commas between the fields of data for importing into your MS-DOS program.

-CN80

EMULATOR IMPRESSIONS

by Charles Harris, M.D.

This is about the TRS80 Emulator. There's something about the Model 4's that is like old shoes, particularly those that wear out and you can't find a last that fits.

I do mostly word processing, and as you know have become addicted to Lazy Writer for its utilitarian qualities and ease of use. But with TRS Emulator by Jeff Vavasour, the TRS80 is resurrected and provides me with tremendous computer flexibility.

For example, I own a Power MAC with a DOS card which permits exchange of files between the two, and text files in particular are easily transferred. Thus I can write a file on a Model 100, transfer it to Lazy Writer in Multidos in the TRS EMULATOR via a null modem, then transfer the file to MAC for graphics and gussying up with fonts and designs. By the same token since the files can be exported to a dos floppy as a *.txt file, I can bring it up on an MSDOS word processor.

Of parenthetical interest there is a program that transfers files from the Model 100 to the MAC (cables included) made by Cabuchon, a company that I can't currently trace, but perhaps still exists.

At any rate, this fluent portability should be a boon to TRS80 fans who have switched to bigger but not necessarily better operating systems.

To digress, one of the great fringe benefits of the early computing days was the camaraderie that existed between the user and producer. I can still call Vern Hester, Adie, Goben and be courteously received by these and many other gurus responsible for the development of programs and thus the popularity of the personal computer. They are knowledgeable and generous teachers. Friends we have never met. And you two fall into that same category. Try calling Microsoft or Claris for some information on the gut code of one of their products.

Well, there is no purpose in describing here how the TRS80 EMULATOR works. Suffice it to say that Vavasour has thought of everything, and that on the 486 it flies as rapidly as MSDOS programs, or as fast as on the Model 4 with Megamem. But the screens are large, easy to read, and the program makes it a pleasure to be reintroduced to old friends.

-Charles Harris, M.D.

AWARI FOR THE MODEL 4, PROGRAM LISTING NUMBER ONE by Henry H. Herrdegen

```
1 'AWARI/BAS: rewritten text, centered display, a bit condensed (XX$'s L10, 12), delay for Comp move, etc., renumbered. Henry H. Herrdegen, 95 04 20
10 CLEAR: CL$=CHR$(30): CS$=CHR$(31): CN$=CHR$(14): CF$=CHR$(15)
12 RN$=CHR$(16): RF$=CHR$(17)
20 CLS: PRINT: PRINT TAB(33) "*** AWARI ***": PRINT: PRINT: POKE 2964,3
30 PRINT "Awari is an ancient african game played with seven sticks and ";
32 PRINT "thirty-six stones": PRINT "or beans. The board is divided into six ";
34 PRINT "compartments, or pits, on each side.": PRINT "In addition, there ";
36 PRINT "are two special Home pits at the ends.": PRINT: PRINT "A move is ";
38 PRINT "made by taking all of the beans from any pit on your side (bottom)"
40 PRINT "and, starting from the pit to the right of this one, place a bean ";
42 PRINT "in each pit,": PRINT "working around the board anti-clockwise.":PRINT
44 PRINT "A turn consists of one or two moves. If the last bean of your move ";
46 PRINT "is sown in ";: PRINT "your own Home, you may make a second move."
48 PRINT: PRINT "If the last bean sown in a move lands in an empty pit, ";
50 PRINT "provided that the pit";: PRINT "opposite it is not empty, all the ";
52 PRINT "beans in this opposite pit are captured and,": PRINT "together ";
54 PRINT "with the last bean sown, moved to that player's Home.": PRINT
56 PRINT "When either side is empty, the game is finished. The player with ";
58 PRINT "the most beans ";: PRINT "in his Home has won.": PRINT
60 PRINT " More to come, press any key: ";
62 A$=INKEY$: IF A$= "" THEN 62 ELSE PRINT @240, CS$
64 PRINT "To make a move, type in the pit's number. If the last bean lands in";
66 PRINT " your Home,": PRINT "the computer responds with 'Move again', and ";
68 PRINT "you then type in your second move.": PRINT: PRINT "The computer ";
70 PRINT "calculates its own move and displays it briefly. If its last bean ";
72 PRINT "would land in its Home, it indicates a second move.": PRINT: PRINT
74 PRINT "The computer always gives you the first move.": PRINT: PRINT
76 PRINT " Press any key to begin the game: ";
78 A$=INKEY$: IF A$= "" THEN 78 ELSE PRINT @240, CS$
100 DATA 0: PRINT CF$
102 DIM B(13),G(13),F(50): READ N
104 E=0
106 FOR I=0 TO 12: B(I)=3: NEXT
108 C=0: F(N)=0: B(13)=0: B(6)=0
110 PRINT @(21,28), "*** SCORE BOARD ***"
112 PRINT TAB(26) "MY SIDE " MS" YOUR SIDE " YS;
114 PRINT @(23,31), "TIE GAMES " TS;
116 GOSUB 350
118 PRINT @(14,0), CL$: PRINT @(14,23), CN$ "Your move: ";: GOSUB 250
120 IF E=0 THEN 134
122 IF M=H THEN GOSUB 200
124 IF E=0 THEN 134
126 PRINT @(14,0), CL$: PRINT @(14,23), CN$ "My move is: ";: GOSUB 500
128 IF E=0 THEN GOSUB 350: GOTO 134
130 IF M=H THEN PRINT ",": GOSUB 500
132 IF E THEN 116
134 PRINT @(16,23), "End of game.": D=B(6)-B(13)
136 IF D<0 THEN MS=MS+1: PRINT TAB(24) "I win by";-D "points.": GOTO 142
138 N=N+1: IF D=0 THEN PRINT TAB(24) "Tie game.": TS=TS+1: GOTO 142
140 PRINT TAB(24) "You win by" D "points.": YS=YS+1
142 PRINT @(22,33), MS: PRINT @(22,47), YS: PRINT @(23,41), TS:
144 PRINT @(19,23), CN$ "Play again ? (Y/N): ";
146 A$=INKEY$: IF A$= "" THEN 146
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Cont'd on the next page.

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148 IF A$="N" OR A$="n" THEN CLS: END
150 IF A$="Y" OR A$="y" THEN PRINT @(14,0), CS$: GOTO 104 ELSE 146
200 PRINT @(14,23), CN$ "Move again: ";
250 INPUT "", M: PRINT CF$: IF M<7 AND M>0 THEN M=M-1: GOTO 256
252 SOUND 0,0: PRINT TAB(23) "Illegal move!!!"
254 FOR T=0 TO 1000: NEXT: PRINT @(15,22), CL$: GOTO 200
256 IF B(M)=0 THEN 252
258 H=6: GOSUB 300
260 GOTO 350
300 K=M: GOSUB 450
302 E=0: IF K>6 THEN K=K-7
304 C=C+1: IF C<9 THEN F(N)=F(N)*6+K
306 FOR I=0 TO 5: IF B(I)=0 THEN 312
308 FOR J=7 TO 12: IF B(J)<>0 THEN E=1
310 NEXT
312 NEXT: RETURN
350 PRINT @(6,32), CF$ "MY SIDE"
352 PRINT @(7,23), RN$ "HOME 6 5 4 3 2 1" RF$ TAB(27);
354 FOR I=12 TO 7 STEP -1: GOSUB 400: NEXT
356 PRINT TAB(24): I=13: GOSUB 400
358 PRINT TAB(51) B(6) TAB(27);
360 FOR I=0 TO 5: GOSUB 400: NEXT
362 PRINT TAB(29) RN$ "1 2 3 4 5 6 HOME" RF$
364 PRINT TAB(37) "YOUR SIDE": RETURN
400 IF B(I)<10 THEN PRINT " ";
402 PRINT B(I);: RETURN
450 P=B(M): B(M)=0
452 FOR P=P TO 1 STEP -1: M=M+1: IF M>13 THEN M=M-14
454 B(M)=B(M)+1: NEXT
456 IF B(M)=1 THEN IF M<>6 THEN IF M<>13 THEN IF B(12-M)<>0 THEN 460
458 RETURN
460 B(H)=B(H)+B(12-M)+1: B(M)=0: B(12-M)=0: RETURN
500 D=-99:H=13
502 FOR I=0 TO 13: G(I)=B(I): NEXT
504 FOR J=7 TO 12: IF B(J)=0 THEN 532
506 M=J: GOSUB 450
508 FOR I=0 TO 5: IF B(I)=0 THEN 518
510 L=B(I)+I: R=0
512 IF L>13 THEN L=L-14: R=1: GOTO 512
514 IF B(L)=0 AND L<>6 AND L<>13 THEN R=B(12-L)+R
516 IF R>Q THEN Q=R
518 NEXT
520 Q=B(13)-B(6)-Q: IF C>8 THEN 528
522 K=J: IF K>6 THEN K=K-7
524 FOR I=0 TO N-1: IF F(N)*6+K=INT(F(I)/6^(7-C)+.1) THEN Q=Q-2
526 NEXT
528 FOR I=0 TO 13: B(I)=G(I): NEXT
530 IF Q>=D THEN A=J: D=Q
532 NEXT J
534 M=A: PRINT CF$ CHR$(42+M);: GOSUB 550: GOTO 300
550 FOR T=0 TO 2000: NEXT
552 'A$=INKEY$: IF A$="" THEN 552
554 RETURN
600 'Change the '2000' delay for the computer move in line 550 to suit yourself, or, if you want the computer
to stop after its move to study or record it, change the remark sign (') from line 552 to line 550. ***
Have Fun! ***

```

PATCH FOR PUP VERSION 1 & 2 by Henry H. Herrdegen

In my review of Richard Snow's "LIST/CMD" patch in the January 95 issue of CN80, I mentioned another possible patch coming for the PUP disks themselves. It would eliminate the "TRSDOS Ready" prompt after each patch line is shown on the screen.

Richard came thru with this patch, and it does save a bit of time when applying patches. The new version 3 of my PUP disk, announced in the March issue, has it already applied. For those of you who want to update your old versions (mind you, there are other improvements on PUP/3), put your PUP disk into d:0, any other formatted disk into d:1, and with the DOS command "BUILD PUPATCH:1" type the "PUPATCH/BLD" file as shown below onto the disk in d:1, then enter "DO PUPATCH", and your old PUP disk will be updated with this patch:

.PUPATCH: Bypass "TRSDOS Ready" Prompt after EACH COMMAND line
.in Patch files. For PUP disk v/1 & v/2. By R. Snow.
(with this file in :1 and your PUP disk in :0, type DO PUPATCH)
PATCH *1:0(ADD=4E55,FIND=CD1B023AB442FE55,CHG=3AFD4CB7CC1B023A)
PATCH *1:0(ADD=4E5D,FIND=20162A1144110052,CHG=B442FE55201B2A11)
PATCH *1:0(ADD=4E65,FIND=B7ED522B444D2100,CHG=44110052B7ED522B)
PATCH *1:0(ADD=4E6D,FIND=521101523600EDB0,CHG=444D210052133600)
PATCH *1:0(ADD=4E75,FIND=C37E4E2E,CHG=EDB01805)

Be careful with the typing, the only space is between PATCH and the *, end every line with a carriage return after the closing parenthesis, and don't neglect the periods starting the remark lines, but you know that anyway, just a reminder.

Enjoy the TRSDOS 1.3.3

-Henry H. Herrdegen

WRITECHK/BAS PROGRAM LISITNG NUMBER TWO by Robert Knowles

```
5 LPRINT CHR$(27);CHR$(81);CHR$(2)
10 CLS
20 PRINT"IF DONE TYPE DONE FOR NAME"
30 INPUT"NAME";B$
40 IF B$="DONE" OR B$="done" GOTO 180
50 INPUT"AMOUNT";C$
60 INPUT"WRITE OUT AMOUNT";D$
70 INPUT"MEMO";E$
80 LPRINT STRING$(4,10)
90 LPRINT TAB(70) DATE$
100 LPRINT:LPRINT
110 LPRINT TAB(20) B$; TAB(72) C$
120 LPRINT
130 LPRINT TAB(12)D$ :
140 LPRINT STRING$(5,10)
150 LPRINT TAB(6)E$
160 LPRINT STRING$(2,10)
170 GOTO 30
180 END
```

ADDRAVLP/BAS PROGRAM LISTINGS NUMBER THREE by Robert M. Knowles

This program was printed previously in the April 1995 issue. (Page 16, Vol. 8 No. 4) But it had line 120 missing which prevented it from working properly. The error has been corrected in this listing and the author has also rewritten some of the code so that the program will ask if you want to print another envelope, then prints the return address. We apologize for the error.

```
10 CLS
20 PRINT TAB(24) STRING$(23,42)
30 PRINT TAB(24)** PRINT ADDRESS (1) **
40 PRINT TAB(24)** WRITE ADDRESS (2) **
50 PRINT TAB(24)** CLOSE,END (3) **
60 PRINT TAB(24) STRING$(23,42)
70 INPUT A
80 ON A GOTO 100,270,410
90 'PRINT ADDRESS
100 OPEN "D",1,"ADDRESS/FIL:1",128
110 FIELD 1, 40 AS A$, 40 AS B$, 40 AS C$
120 LPRINT TAB(2)"ROBERT M. KNOWLES"
130 LPRINT TAB(2)"37 STEVENS ST.
140 LPRINT TAB(2)"CENTREDALE, R.I. 02911-1618"
150 LPRINT STRING$(7,10)
160 INPUT"RECORD NUMBER, 0 TO END";CODE
170 IF CODE=0 THEN 240
180 GET #1, CODE
190 LPRINT TAB(30);A$
200 LPRINT TAB(30);B$
210 LPRINT TAB(30);C$
220 LPRINT STRING$(27,10)
230 GOTO 120
240 CLOSE 1
250 GOTO 20
260 'WRITE ADDRESS
270 OPEN "D",1,"ADDRESS/FIL:1",128
280 FIELD 1, 40 AS A$, 40 AS B$, 40 AS C$
290 INPUT"RECORD NUMBER, 0 TO END"; CODE
300 IF CODE=0 THEN 390
310 INPUT"NAME:";N$
320 INPUT"ADDRESS:";F$
330 INPUT"CITY,STATE,ZIP";D$
340 LSET A$=N$
350 LSET B$=F$
360 LSET C$=D$
370 PUT 1, CODE
380 GOTO 290
390 CLOSE 1
400 GOTO 20
410 CLOSE:END
```

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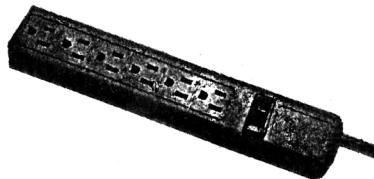
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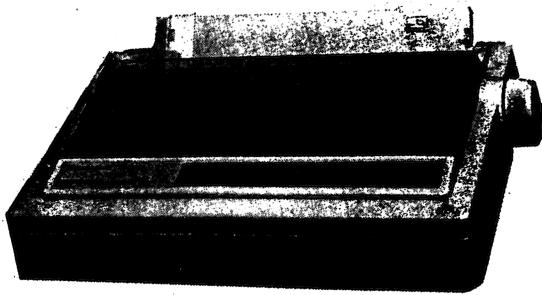
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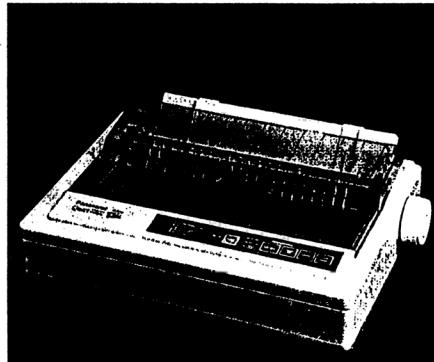
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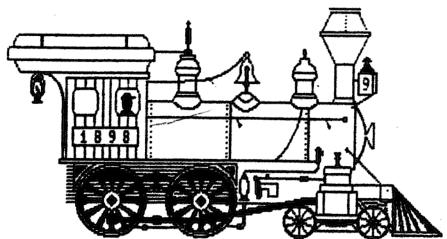
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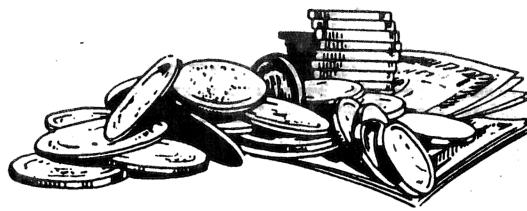
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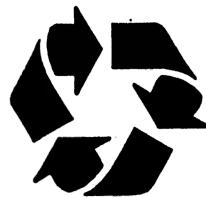
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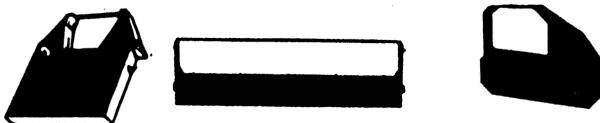
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NUMBER 29 programs printed in Vol 8 No. 4, 5 and 6.	
NUMBER 30 programs printed in Vol 8 No. 7, 8 and 9.	
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\$ 5.00 PER DISK S&H Included

For your convenience advance orders for the Disk Series are accepted. Disks are shipped to you automatically as soon as they are ready. Write or call for free CN80 Disk Series Catalog.

PLEASE NOTE: All CN80 DISK SERIES are on FLIPPY 5-1/4"disks; TRS/LS-DOS 6.3 format on Side 1 and TRSDOS 1.3 format on Side 2. Also available on 3-1/2" disks @ \$5.50 each (LSDOS 6.3.1 or LDOS 5.3.1 format only). Each Disk Series has Bonus programs.

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Amertype	10 point
Legal	10 point
Helvetica	10 point
Optimas	10 point
Palitine	10 point
Times Roman	10 point
Palitine	12 point
Centrum	12 point
Optimas	12 point
Helvetica	2 point
Palitine	8 point

Each Font Package supports normal, bold and italics printing of letters. Thirty-six soft font packages in all. Twelve soft fonts for each word processor supported.

Prices are \$10 for each soft font package.	plus (Z)
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MODEL 4 TRS-80 PUBLIC DOMAIN	\$ 2.00 (X)
MODEL 4 HIGH RESOLUTION	\$ 2.00 (X)
MODEL 4 MACPAINT HIGH RESOLUTION	\$ 2.00 (X)
MODEL 1/3 PUBLIC DOMAIN CATALOG	\$ 2.00 (X)
SYMPHONY 90 MUSIC CATALOG	\$ 3.00 (X)

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TRSDOS 1.3 R/S Cat # 26-0312	\$ 7.00 (X)
Model 3, Disk Operating System and BASIC	
TRSDOS 6.2.1	\$ 45.00 (Z)
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Use as Double or Single Sided Disks. 100% Error Free Lifetime Guarantee with Paper Sleeves, Labels & Tabs. These disks are manufactured in South Dakota by Syncrom and are equal in quality to 3M brand disks, with a 3 mil heavy duty jacket.	

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Single Sided DD on both sides. Premium Quality with two notches by factory. Made in South Dakota by Syncrom. 100% Error Free. Paper Sleeves, Labels & tabs.	
3-1/2" DISKS	\$.59 (Z)
Premium Quality DS/DD 100% Error Free. Lifetime Warranty. Made in South Dakota by Syncrom - Bulk Platinum Brand by Syncrom.	
All our disks are manufactured in the US. Equal to 3M or Verbatim, Sony and other famous brands - no Chinese or other cheap imports.	
5-1/4" TYVEK SLEEVES (25 per pk)	\$ 1.25 (X)
COLOR CODED DISK LABELS	
Five Color 5.25 Write-On Disk Labels 10 labels w/10 read-write tabs per sheet 100 per package	\$.50 (X)
FLOPPY DISK MAILERS	
Self-Sealing Mailer package of 10 Holds one or two 5-1/4 floppy disks.	\$ 3.35 (Z)

SELECTOR SWITCHES

A-B SWITCH, PARALLEL	\$ 14.75 (Z)
With three female 36 conductor centronics connectors.	
A-B SWITCH, SERIAL, RS232	\$ 12.75 (Z)
With three DB25 Female connectors.	
THREE POSITION SERIAL SWITCH	\$ 16.95 (Z)
w/4 DB25 Female connectors	

CABLES REQUIRED BETWEEN AB SWITCH and PRINTER

Printer to Selector Switch 6'	\$ 13.49 (Z)
Printer to Selector Switch 10'	\$ 15.95 (Z)
Printer to Selector Switch 15'	\$ 18.95 (Z)

RS232 SERIAL CABLES

RS232 Serial Cable 6 ft.	\$ 8.95 (Z)
Equal to Radio Shack #26-240, Male - Female	
RS232 Serial Cable 6 ft.	\$ 8.95 (Z)
Equal to Radio Shack #26-249, Male - Male	
RS232 NULL MODEM Cable 6 ft	\$ 9.95 (Z)
Connect two computers together.	
RS-232 EXTENDER CABLE	\$ 8.00 (Z)
For computers w/RS-232 connector pointing down on the bottom of the computer.	

HARD DRIVE CABLES

HARD DRIVE CABLE 4 ft	\$ 16.00 (Z)
w/50 pin Edge Card connector & H D pin connector.	
50 Pin Y CABLE	\$ 18.00 (Z)
Enables hard two units to be connected to the I/O-Bus at the same time.	

RS232 EXTENDER CABLE

RS232 Extender	\$ 8.00 (Z)
FOR Non-gate array computers which have the RS232 cable pointing down out of the bottom of the computer.	

PRINTER CABLES for TRS-80 & 1000 COMPUTERS

Flat Ribbon 6', Mod III/4/4D&P	\$ 12.95 (Z)
Flat Ribbon 12', Mod III/4/4D&P	\$ 15.00 (Z)

DISK CLEANING, DUST COVERS

5-1/4" DISK DRIVE CLEANING KIT	\$ 4.90 (Z)
3-1/2" DISK DRIVE CLEANING KIT	\$ 5.25 (Z)
UNIVERSAL PRINTER DUST COVERS	\$ 9.75 (Z)

For printers up to 16" wide, anti-static vinyl.

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Half Height 5-1/4 360K	\$ 60.00 (Z)
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Internal 2 Drive Cable	\$ 10.00 (X)
Specify: Model 4 Gate Array or Non-Gate Array. Model 4D or 4P. S&H included when ordered with drives.	

EXTERNAL DISK DRIVES

One Disk Drive Unit	\$143.00 (S)
One 5-1/4 360K or One 3-1/2 720K Unit.	
Two Disk Drive Unit	\$193.00 (S)
Two 5-1/4 360K drives, or two 3-1/2 720K drives. Or one 5-1/4 360K and one 3-1/2 720K drive.	

MEMORY CHIPS for MODEL 4

64K UPGRADE KIT	\$ 12.95 (Z)
Includes 8 150ns 128 refresh cycle dynamic ram chips, plus instructions and Memory Test Disk.	

PAL CHIP	\$ 8.00 (X)
Required to upgrade Non-Gate Array Model 4s.	

MICRO-LABS HIGH RESOLUTION BOARDS

GRAFYX SOLUTION for Model 3/4/4P/4D	\$ 66.00 (Z)
Specify Model 4 Non-gate array, Model 4 Gate-array or Model 4P (portable) when ordering because the boards and instructions are different for each Model.	

MOUSE - PADS - HOLDERS - ADAPTERS

THREE BUTTON MOUSE	\$ 16.95 (Z)
MOUSE HOUSE HOLDER	\$ 1.75 (X)
MOUSE PAD	\$ 2.45 (Z)
MOUSE CABLE ADAPTERS 9 PIN TO 25 PIN	\$ 2.95 (X)
Mouse pad, holder and adapter are free when ordered with the three button mouse.	

CLOCKS - ENTER TIME AND DATE AUTOMATICALLY

ROMCLOCK4 - INTERNAL CLOCK CHIP \$ 35.95 (Z)
 Clock chip with ROMCLOCK4 or ROMCLOCK3 Utility
 program package and installation instructions. Keep time
 and date current. 10 year lithium battery.

I/O-BUS CLOCK EXTERNAL \$ 59.00 (Z)
 Realtime clock uses exterior I/O Bus, no internal
 connections or wiring.

EXTERNAL MODEL 4 OR 4P HARDWARE ADD-ONS

I/O-BUS LD INTERFACE \$180.00 (Z)
 Connect an exterior disk drive unit to your 4P or Model
 4/4D, not required for the first two drives on your Model
 4/4D.

POWER SUPPLIES FOR MODEL 4/4P/4D OR MODEL III

ASTEC 65 WATT POWER SUPPLY \$ 62.00 (Z)
 For units that have only one supply.

ASTEC 38 WATT POWER SUPPLY \$ 22.95 (Z)
 For units that have two small supplies.

MODEL 4 HARDWARE

Non-gate array Motherboards 64K memory	\$ 49.95 (Z)
Non-gate array Motherboards 128K memory	\$ 70.90 (Z)
Sound Board Kits	\$ 10.00 (Y)

MODEL 4P HARDWARE

Cooling Fans 12 vdc used.	\$ 6.00 (Z)
Internal 300 Baud Modems used.	\$ 20.00 (Z)

All hardware is new and has never been installed unless
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25 Conductor	\$.38 ft.(Z)
34 Conductor	\$.51 ft.(Z)
50 Conductor	\$.75 ft.(Z)

EXTENSION BLOCKS

70-015 34 Pin 17x2 Socket 3/16" high	\$ 5.50 (X)
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70-005 50 Pin 25x2 Header Male/Plug no/mtg	\$ 8.50 (X)

70-006 36 Contact Centronics for Printers	\$ 4.00 (X)
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70-007 34 Pin 17x2 Header Female Socket	\$ 1.95 (X)
70-008 34 Pin 17x2 Edge Card Connector	\$ 1.35 (X)
70-009 34 Pin 17x2 Header Male no/mtg	\$ 7.50 (X)
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Call for prices and availability for CRT screens
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Keyboard Contact Blocks	\$ 1.00 (X)
Key Caps	\$.50 (X)

Specify computer and type when ordering.

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MEDIA MATE Holds 50 5-1/4" disks	\$ 5.90 (Z)
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IDE HARD DRIVES

42.8 MEG for Models 4/4P/4D Allow 4 weeks for delivery.	\$350.00 (S)
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85 MEG and 125 MEG Hard Drives Call for price and delivery.	
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Printer	Radio Shack Cat. Number	CN80 Number	Type	Price Each	6 or More
LP I, II, IV	26-1413	CN1001	FABRIC REFILL	5.55	5.05
LP III, V	26-1414	CN1002	FABRIC CART.	6.38	5.88
LP III, V	26-1414	CN1003	FABRIC REFILL	4.79	4.29
LP VI/VIII,DMP 400/420	26-1418	CN1004	FABRIC CART.	5.60	5.10
LP VII, DMP 100	26-1424	CN1038	FABRIC CART.	6.00	4.50
DMP 110	26-1283	CN1005	FABRIC CART.	6.58	6.08
DMP130/130A/132/133/107	26-1236	CN1006	FABRIC CART.	6.40	5.90
DMP130/130A /132/133/107	26-1238	CN1007	FABRIC REFILL	5.00	4.50
DMP 500	26-1482	CN1008	FABRIC CART.	13.40	12.90
DMP 500	26-1482	CN1043	FABRIC REFILL	5.30	4.80
DMP 120, 200	26-1483	CN1009	FABRIC CART.	7.00	6.50
DMP 120, 200	26-1489	CN1010	FABRIC REFILL	4.85	4.35
DMP 430	26-1296	CN1013	FABRIC CART.	12.20	11.75
DMP 430	26-1296	CN1044	FABRIC REFILL	5.60	5.10
DMP 440	26-2809	CN1014	FABRIC CART.	19.30	18.80
DMP 2100, 2100P, 2110	26-1442	CN1015	FABRIC CART.	6.10	5.60
DMP 2100, 2100P, 2110	26-1442	CN1016	FABRIC REFILL	4.85	4.35
DMP 2120	26-2834	CN1017	FABRIC CART.	13.05	13.05
DMP 2120	26-2836	CN1018	FABRIC REFILL	7.90	7.40
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DWP II, DWP 410/510	26-1419	CN1021	M-S REFILL	4.50	4.00
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DWP II, DWP 410/510	26-1449	CN1023	FABRIC REFILL	5.45	4.95
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DWP 520, 230, 210	26-1445	CN1025	M-S REFILL	4.50	4.00
DWP 520, 230, 210	26-1458	CN1026	FABRIC CART.	5.60	5.10
DWP 520, 230, 210	26-1458	CN1027	FABRIC REFILL	4.80	4.30
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EPSON LX/80/90		CN1034	FABRIC CART.	5.00	4.50
PANASONIC KXP1090/2023/1150		CN1036	FABRIC CART.	7.35	6.85
PANASONIC KXP1180/1190/1191		CN1039	FABRIC CART.	6.90	6.40
SEIKOSHA SP-2000, SP-2400		CN1041	FABRIC CART.	6.40	5.90
SEIKOSHA SL-90, SL-70		CN1046	FABRIC CART.	7.25	6.75
SEIKOSHA SL-270		CN1047	FABRIC CART.	15.40	13.86

ALL RIBBONS ARE BLACK, CART.= Plastic Cartridge, REFILL= Refills Only/No Cartridge.

Add for Shipping and Handling

1 to five items add (Y) ... 6 or more items add (Z)

Please refer to the CN80 Product Guide Shipping and Handling Schedule.

Some ribbons for the older Radio Shack printers are not stocked, but are still available by special order, please allow an additional week shipping time. All stock ribbons are shipped within 24 hours from the time the order is received. C.O.D. orders accepted, C.O.D. charges additional. Government and educational institution purchase orders are accepted. We do not accept credit card orders.

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