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EDITORIAL COMMENT

Here we go! Entering our third year of publication and still growing, with many new and exciting things planned for 1990. Many new things are already in the works and many more are in the development stage.

There really is no need that much of the so called "new" technology in the computer world can not be made available to the TRS-80 user. There is certainly no need for the TRS-80 user to sacrifice his equipment and the hours and hours he has spent learning the ins and outs of the software because he thinks that a lot of the new equipment will not run on the TRS-80.

Some of the new software for the MS world is so big, takes up so much memory space that it is slow and offsets the higher clock speed of the MS computers. This is what we see in the ads - how fast the MS computers run. But you do not see how fast will they do a job using such and such software. Some word processing programs are so big, that we could have our letter in the envelope and out the door, using our trusty TRS-80, while the MS program is still looking for page one.

And how about if I want to adjust some of the program to fit my particular need? Modification of a program written in

machine language that takes 500K just to boot up! No way!

Sure there are some business needs that are large enough and standard enough for the application of MS machines and software. But do I need one? I want my computer to be friendly, not just some other machine that I plug in and run, or does it run us?

But I still want to be able to take advantage of the new technology coming out. So why not!

Well first, because Tandy decided that their best route to the market place was to build a computer that was just another clone of the IBM, and then sell someone else's software. That way they could cut out all the software support costs and just have a few people who would give customer support to the hardware they sold. Simple isn't it. High sales - low support cost.

Secondly, the software produced for the IBM MS-DOS computers and their clones has pretty well been taken over by the big producers of software, thus squeezing out the small software author and publisher.

Such a market squeeze has been placed on the small software developer, that most of them - some of the best - have been pushed into the MS-DOS companies and no longer have time or can afford to develop software on their own, much less for the TRS-80. We said some, not all - thankfully there are those who are still willing to develop software and hardware for the TRS-80s.

In coming months you can look for these developments in CN80.

For example many people felt that they could not use a laser printer on the TRS-80, and would have to give up their equipment to take advantage of the new wave in printers. That ain't so either. And in the coming issues of CN80 we will be running a series of articles on "HOW TO USE THE TRS-80 COMPUTERS WITH LASER PRINTERS." Soon you will begin to see the results of our learning efforts in the production of CN80, but not right away.

We do not want to change from our traditional methods of publication until we are sure that we have mastered the technique and have settled on a standard format for the magazine. By the way our philosophy is that we produce CN80 with TRS-80 equipment, with the exceptions of our printers. As long as we are producing a support magazine for TRS-80 users, we feel that the magazine should be created with TRS-80 computers and software. We could produce the magazine with an IBM clone, and a desk top publishing package that only works with MS-DOS, but is that fair to the reader. Besides, as we develop and learn more about our TRS-80 equipment we can pass that learning on to our readers.

How about it folks! Anybody out there want to share their experience along these lines with other users. Get your letters, articles, and how to do it in the mail. On disks in ASCII with a hard copy - Please.

NEWS ITEMS

It took three long distant phone calls to come up with this bit of news.

First we called one of the traditional Tandy support phone numbers. A recorded voice said, "The support service phone numbers for Tandy products has been changed. Contact your local radio shack store for the new numbers."

Boy, I wanted to use last months fun program for changing phone numbers to letters to see what new words I could come up with for the Tandy old numbers, I am sure they wouldn't be nice, so I forgot it.

Call your local Radio Shack store for the new numbers - forget it. Around here that's like calling the moon for the time of day.

So what did we do. We dug up the Tandy information main switch board number, which by the way they don't call it that anymore either. It's just their main switch board. (817)390-3011 and I asked what the new support numbers were. The operator switched me to customer service. Again, "What are the new support phone numbers?", I asked. The lady said, "What model of computer do you have?" I said several kinds, and what difference did it make. I was really afraid to tell her that I had seven model 4s. I would probably have to spend

another long distance phone call to see if she had recovered from the shock. Maybe the silence on the line would come from either her fainting dead away or shear fright at the mention of TRS-80.

Anyway, I got the numbers:

Hardware Support (817)878-6875

She assumed I had a MS computer, and I believe she said the number for MS computers is.

Software Support (817)878-6880

Thankfully, she did not ask me what software I was using, or I am sure she would have had a stroke.

So to continue my quest, I called the software support number. I was looking to ask someone a question about a software product when I placed the first call.

The phone rang, and a recorded voice said "Press one if you are using so and so. Press two if you need help with so and so. And on and on, on my nickle! Luckily I didn't have to wait till the voice said "If you are not calling from a touch tone phone (which everyone should own from the tone of the message) please stay on the line for operator assistance." Ain't modern gadgets fun.

While getting this story out to our readers we might as well tell you why we were calling. As most of you already know we have picked up some software from the Radio Shack stores at close out prices and have made it available to our readers, as well as building our archives. Well we picked up a brand new Cat. #26-5300 Lotus 1-2-3 for the Tandy 2000, which we sold to a subscriber that had a 2000. When he got the package the Lotus System disks were missing, the other three where there.

It was our understanding that if the package was complete with the registration card, and never owned by anyone before that all you had to do was send in the registration card, to establish new ownership and to receive the upgrades.

This our reader did, with a letter telling Tandy about the missing disks. The software registration department told him that was good for updates, if any, but could not send him the missing disks.

I was calling software support to see if we could resolve the problem some way, when I found out about the phone changes.

I finally succeeded in reaching "Tom" in software support. I told him what I was looking for, and his first reply was - "They didn't make Lotus 1-2-3 for the Tandy 2000 computers only MS computers". I pointed out to him that the last catalog they had it listed in was the 1987 software catalog on page 62. That got his attention and from there on he was very cooperative.

His solution was, "Take the package to your nearest Radio Shack store, and tell them they have to order the disk for you from the Software Assembly Division, and if the store does not have that number tell them to call 'TOM' at this number ext. 2, and I will tell them what needs to be done."

This information was relayed to our customer and we hoped that this would solve the problem. Lotus 1-2-3 is too good a program just to scrap, especially when one owns a Model 2000 and would like to get the maximum use out of it.

The latest we heard from our reader is that he went to the RS store and told them what we had informed him to do. The answer was (we assume from Software Assembly Division), "We can't do that, we could replace the disks if you had the original and it didn't work any more, but we can't replace missing disks."

Now for our appeal. Does anyone have a Lotus 1-2-3 for the Model 2000, that you are using or not using and can help this reader complete his system. If so please let us know.

In the meantime our reader is in the hope that he may find a copy of the disks in some Radio Shack store - sometime. And we will just keep on punching our touch tone buttons.

On another note. Rob Stewart of Storage Power tells us that he has an external clock unit available that plugs into the 50 pin I/O bus and then you plug your 50 pin I/O cable into that if you want to use the I/O bus connector for other equipment. At this time he did not furnish us with prices and we understand that using his software you can call up the time of day at any time. If we receive one we will give you more information with a review of the product.

David Dalager has sent us a software package called GRAFDSK, written by William Bowman, which is available from several bulletin boards and is supposed to access a HiRes board if you have one and use it as an additional memory bank adding more memory to your system. We will try to have a review of this package for the next issue.

We still have several copies of the TRSDOS manual complete with TRSDOS 6.2 disks. These are brand new manuals and systems disks from Radio Shack and are available for $20.00 plus $ 4.00 S & H.

This system coupled with David Goben's T62DOSXT date extension and utility program will give you not only dating beyond the Dec 31, 1987, but will also give you utilities such as a one pass backup that works just like DISKCOPY in the LS-DOS 6.3 system package, in that you do not have to pre-format your disks to do a backup. (See the display ad for this package - now published and distributed by CN-80, but still directly supported by the author.)

John Gregg of TRY-O-BYTE Software, 1008 Alton Circle, Florence, SC 29501 has released his public domain TAX ESTIMATOR Program (basic version) for 1989. He has incorporated the last minute tax changes, and makes the disk available to anyone who would like to have it for the cost of shipping and handling. Which according to his ad in the Product Source section would be $ 3.00.

CN80 INDEX ON A DISK

Thru much work on the part of Louis Carson of Boulder Colorado, who did all the data input and David Goben, who modified and enhanced the basic program used to index and search the data files, we finally have CN80 1988 and 1989 listed and cataloged on disks.

Actually a flippy disk, because the files for 1988 and the basic program takes up one side of a single sided 180K disk. 1989 is on the second side and leaves room to add the 1990 index.

We could not print this data because it would take up too many pages in CN80. Lou has listed everything in the issues. There are 555 listings for 1988, and 374 listings for 1989. We wondered at first why so many more for 1988 than for 1989 when the second year was consistently more pages per issue. But the reason is that the articles in 1989 were longer, and Lou listed every topic of information as a separate item, such as each Open Forum question and answer, etc. This really makes for a thorough search facility for the magazine.

You can use the basic program as provided to print out all the data files. Or print them singly. Or just view them on the screen. You can also use the program to build your own personal index of anything that you want to keep track of and then use the search command in the menu to look for it.

You have 24 Classifications of search in our Index, plus a search by model number; a search by "Word" only; a search by book (Vol# and No.); a search by system and you can search out all the articles that have program listings. All in all quite a package and a lot of work on the part of those who built it. We owe them our thanks.

If you would like a copy the CN80 INDEX ON A DISK send $2.00 to cover the postage and disk costs. Tell us if you want the TRSDOS 6.x version for Model 4 or the TRSDOS 1.3 version for Model III.

The CN80 INDEX ON A DISK will also be available on Chicago Syslinks, TRSLINK, and Genie bulletin boards, and may be found on several of your local BBs.

LeSCRIPT ver 2.0 REVIEW

by Danny C. Mullen

I've been using this latest version of LeScript for about four months now and I have to say it's a welcome update over the older versions. It really is a pleasure to have this 55k program load as quickly as it does. In fact, prior to this update, I had often used my old version 1.65 copy to do minor jobs that required no spell checking just to elude the long wait. My version 2.0 loaded in just 45 seconds - including the dictionary files in my extended memory board. This is the Alpha Products SuperMem Board also sold by Anitek.

One feature added is the dynamic line and word count feature, and a page indicator. No more guessing as to what page/line number you're on or approximate word count. I say this because the word count, according to the author of LeScript, says that header/footer, footnote, and printer commands may affect the count slightly, but only within a few percentage points. The word count will change as you move the cursor through the document. That is, if you're on line one, it counts the words in line one. When you move to line two, it will add that count to line one's and show the total. So if you want the total for the document, move the cursor to the end of the document and it's displayed instantly.

Another appreciated feature is the exit warning given if you haven't saved any recently added text to a document. This is very helpful if you've made slight changes, worked on a new document in another window, or had to interrupt your work for some reason and then decided to quit for the evening. A message will flash stating that text in window 'x' has not been saved. The 'x' means one of four windows allowed on the new version - previously only 2 screens were allowed .

The four windows feature is one I normally don't use, but if I were to use LeScript for writing source code for assembly language and desired to compare an old version of code with newer, I'd certainly like to have this. You may work on up to four documents, and transfer blocks across them as in the older versions. Also, each has its own line, word, page count, and memory count displayed independently as before.

Pop-up help screens are one of the best improvements made. Now you get a small window on screen and can go to a particular area of help (i.e. print, disk, block, and others) with one keypress, or you can scroll through them if desired. It's almost instantaneous even though the data is read from disk. In addition, full instructions are given in the manual showing how to customize the help to suit your own desires.

There are a few key-press changes to become familiar with. The old <CTRL ><W> combination to delete a word controls which window you're in. A <CTRL><8> gets the justification feature locked on or off with a message. This is important when editing Visacalc files or doing any type where you don't want LeScript to delete extra spaces. Turn justification off prior to loading these type files. The <CTRL><U> associated with the old Visacalc load function now is used in displaying characters 176 through 207 or used in a new line draw feature.

There are several more changes: customization patch area, <CTRL><Z> doesn't abort in the middle of loads/saves, wild card search uses '?' instead of blank character, blank and end of sentence character are combined, LeScript text files format is changed - it can read old text file versions, but old versions can only read the new if saved in ASCII, KSM files must be updated to ver 2.0 format, default left margin is 0 now, maximum line length is 254 versus 252 in older versions, directory displays are pageable using <CTRL> and up/down arrows, cursor forward/back by tab stops, pop-up macro display, print-to-disk command.

Finally, I've saved the best for last; the line draw mode. Though not used much by me, when desired, I love it. You first must have a printer that can duplicate the IBM-PC character set to get the output. Then, you have two options on how to get this on your screen: have the Graphyx Solution Hi-Res board by Micro Labs or a 'PC-set' ROM installed (sold by Anitek - Note that without these, you could still do line drawing with your printer, you just wouldn't be able to see what it looked like on screen). The <CTRL><Y> combination puts you in line- draw mode and the <F3> toggles you in/out of displaying the actual

lines if using the Graphyx Solution board (which I do). The drawing and cropping of lines takes a little practice, and I suggest you draw any boxes first then fill with data since you can't move the data inside the box. Using the Graphyx Solution method with it's display activated slows down typing speed, and sometimes you get cursor over-run due to the delay. You can get normal speed by deactivating the board once you're used to it, and reactivating it when needed.

Since I received my original version 2.0, I reported a few minor bugs to Anitek, and Mr. Ray fixed them quickly and correctly. Due to it being so enhanced compared to the old versions, I expected to have a few. The responsiveness in fixing them outweighs the negative here. In the manual, I noted that the external spell activation sequence was different than in the quick reference card/online help.

As stated in some advertisements, most of LeScript works much faster than in previous versions, especially in spite of its code size. About the only feature I still want (and keep bothering Mr Ray about) is an online thesaurus. He says there are no plans at present for one. One item that makes LeScript a pleasure to work with is the extended memory board also sold by Anitek. I highly recommend its purchase if you are using the spell checking feature of LeScript or working on larger documents. Fine products, fine support - especially in the dwindling TRS-80 market.
-Danny C. Mullen

About the author: Mr. Mullen has been an infantry soldier for 14 plus years in the US ARMY. He is presently serving in Panama as an Equal Opportunity Advisor.

His main hobbies are computer programming and fishing, and expects to be back in the USA around Feb '90.

He started computing with a Sinclair ZX81 kit until it burned up in '84 and have been banging this Model 4 around since - from Virginia to California to Georgia and Panama. He says, "I love to program in assembly now that I've figured it out."

ASSEMBLY LANGUAGE TUTOR Part 12

by Christopher Fara (Microdex Corporation)

Happy New Year. We continue our essays on assembly programming under a simplified title. These essays are still for "beginners", but we assume that the reader is familiar with the ideas discussed in the "TRS-80 Assembly Language for Beginners" series of 11 articles in CN-80 January through December 1989.

B A S I C i n t e r f a c e

There are many ways to store and load machine routines for interfacing with BASIC. For a graduate assembly programmer the following procedure is often the simplest.

1. PROTECT MEMORY: From DOS enter BASIC and specify the highest address BASIC will be allowed to use. Our examples load at 64000, so we can let BASIC use memory up to 63999. In Mod-3 under TRSDOS 1.3 enter

```
BASIC -M:63999
```

In Mod-3 under LDOS 5.3 and in Mod-4 enter

```
BASIC (M=63999)
```

2. LOAD ROUTINE: Once in BASIC, we can any time load any /CMD-type program into protected memory. For example:

```
Mod-3: CMD "L","DEXHEX/CMD"
Mod-4: SYSTEM "LOAD DEXHEX/CMD"
```

The /CMD extension is not assumed and must be typed.

3. CALL ROUTINE: The traditional method which works in Mod-3 and Mod-4 is the USR call. Before calling the routine, its entry address must be defined. That's why putting executable instructions up front (as we did last month in DEXHEX) helps when dealing with BASIC: the entry address is the same as the load address. The following command would define our usual address:

```
DEF USR = 64000 - 65536
```

Why not just 64000? Since BASIC integers can't be greater than 32767, higher addresses must be expressed as their "signed" equivalents. The theory of signed integers is a bit involved, so let's just say for now that the highest "absolute" integer 65535 is internally encoded by the same bit pattern as "signed" -1 and the count goes backwards: 65534 is -2, and so on. Thus the

signed equivalent of an absolute integer 32768 to 65535 can be always obtained by subtracting 65536. Actually in Mod-4

```
DEF USR = 64000
```

is okey because Mod-4 BASIC converts it internally to signed integer, but Mod-III doesn't. If we know the hex form of the address, then we can also write on both computers

```
DEF USR = &HFA00
```

This is one of the reasons we have picked 64000 for our examples: its hex equivalent FA00 is also an easy to remember "round" number. Either way the address is now defined and the actual call can be made like this:

```
X = USR (0)
```

The value in brackets in this case is a "dummy" required for syntax only. In other cases it may be a variable to be "passed" to the routine for some processing.

Model 4 BASIC has also a new command for calling machine routines. Instead of DEF USR, we assign the entry address value to some variable, then "call that variable" so to speak. In our case we could write

```
X = &HFA00
CALL X
```

In any case, after return from the routine control returns to BASIC. All the above commands can be executed directly from BASIC "immediate mode" or within a running program. We'll try it later today.

Case conversions

In BASIC and in assembly programs we often want to have all alfa characters in upper case, even if typed in lower case. For example, our conversion routines in the last few essays in CN-80 were looking for "hex digits" A-F. If these characters were typed in lower case then the routine would not accept them. Conveniently in the ASCII code the only difference between upper and lower case is bit #5 (sixth from the right) which is 0 in upper case and 1 in lower case. For example

```
0100 0110 = 70 = ASCII 'F'
0110 0110 = 102 = ASCII 'f'
```

Recall how the AND instruction was used for "masking" (CN-80 Nov'89 page 10). Suppose we have 'f' in register A and want to make it upper case. The instruction

```
AND 0DFH
```

leaves all bits in register A intact except bit #5 which is ANDed with 0, and will therefere become 0 regardless of its original status, like this

```
0110 0110 = 'f' original
1101 1111 = hex DF = mask
0100 0110 = 'F' result
```

Thus, for example, in our HEXBIN subroutine (CN-80 Nov'89 page 11) before CP 'A' we could insert

```
AND 0DFH
CP 'A' ;else is it < A?
```

to make sure that lower case "hex digits" 'a-f' will be recognized. Similarly in DEXHEX last month

```
AND 0DFH
CP 'H' ;is it 'H'?
```

would accept lower case 'h'.

Conversion of upper to lower case means setting bit #5, of course. This can be done with another "logical instruction", similar to AND.

```
OR byte
```

Bit-wise comparison of register A with a single 'byte'. If matching bits are both 0 then the corresponding bit in register A is "reset" 0, otherwise it is "set" 1. Carry flag is always "reset" NC (No Carry). The 'byte' can be a number, a single register, or a value in memory addressed by (HL).

```
OR 32
OR B
OR (HL)
```

For example suppose we have the value 70 in register A (ASCII code for upper case F). The instruction

```
OR 20H
```

does this

```
0100 0110 = 'F' original
0010 0000 = hex 20 = mask
0110 0110 = 'f' result
```

CAP, DECAP routines

The CAP routine takes a string of up to 255 alfanumeric characters and "capitalizes" it (converts letters to upper case). Suppose the length of string is in register B and the register pair DE points to the first character in string text.

```
;-----------------------------------------------
        XOR     A           ;make A=0
        CP      B           ;is B also 0?
        RET     Z           ;yes, quit, else
CAP:    LD      A,(DE)      ;get character
        CP      'A'         ;is it alfa?
        JR      C,NEXT      ;no, else
        AND     0DFH        ;make caps
        LD      (DE),A      ;put it back
NEXT:   INC     DE          ;next character
        DJNZ    CAP         ;if any left
        RET                 ;else done
;-----------------------------------------------
```

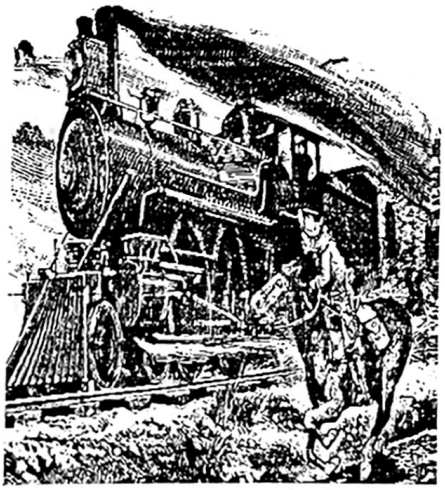
Before doing the actual CAP routine, we test the length of string and quit at once if it's zero. Otherwise on the first go-around DJNZ would decrement register B to 255 (binary byte 0 minus 1 makes binary 255, we'll talk about it some other time). As a result the DJNZ loop would execute 256 times and would most likely crash our poor TRS-80 (which of course rhymes with "crash" anyway).

The CP 'A' prevents unwanted conversion of numeric and punctuation characters in the string (ASCII codes lower than 'A'). As an exercise, the reader may want to add a trap to prevent conversion of characters with codes higher than 'z'.

From the CAP routine we can easily make DECAP to "de-capitalize" letters in a string (ie. convert to lower case). Simply replace

AND 0DFH ... by ... OR 20H

The routines could be combined. Suppose we have a list of names in an array, some in lower case, some upper, and want to make the first letter in each name upper case, the rest lower.



```
-----------------------------------------------
        XOR     A           ;make A=0
        CP      B           ;is B also 0?
        RET     Z           ;yes, quit, else
CAP:    LD      A,(DE)      ;first char
        CP      'A'         ;is it alfa?
        JR      C,NEXT      ;no, else
        AND     0DFH        ;make caps
        LD      (DE),A      ;put it back
        JR      NEXT        ;next character
DECAP:  LD      A,(DE)
        CP      'A'
        JR      C,NEXT
        OR      20H         ;do lower case
        LD      (DE),A
NEXT:   INC     DE
        DJNZ    DECAP
        RET
;-----------------------------------------------
```

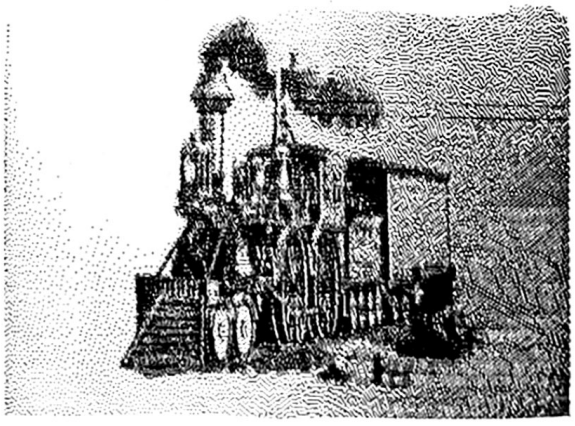
Similar schemes could be used for all kinds of character conversions.

Calling CAP, etc.

In a USR call we can pass a string to the CAP routine and have it instantly converted to upper case. Suppose we have some string in variable A$. The call sequence could be

```
DEF USR = 64000 - 65536
X$ = USR ( A$ )
```

Notice that the type of the "calling" variable X$ must be the same as the type of the value in the brackets (integer to integer, string to string, etc). When the variable in USR brackets is a string then on entry to the routine the register pair DE points to the memory location where the "string descriptor" is stored: 1-byte length of string followed by 2-byte address of the actual string text. In other words DE contains the "variable pointer", the same value as would be returned by the BASIC command VARPTR(A$). We want to put the length of string into register B and address of text in DE for the CAP loop. So we need to arrange the registers.



```
;-----------------------------------------
;ALFA   case conversion subroutine
;-----------------------------------------
        ORG   64000
        EX    DE,HL        ;now HL=varptr
ALFA:   LD    B,(HL)       ;string length
        INC   HL           ;next get...
        LD    E,(HL)       ;address of...
        INC   HL           ;string text
        LD    D,(HL)       ;DE=> text
;.... here type the CAP routine
        END
;-----------------------------------------
```

There is an interesting thing to notice here: the END instruction does not have our usual "transfer address" (like END RUN in all our previous examples). It's because ALFA will be never used as a stand alone program executable from DOS. It will be only loaded into memory and accessed from BASIC.

To get the length of string into register B we can't simply LD B,(DE). It's not a legal instruction. LD A,(DE) in CAP above was fine because any register pair can be used as address for LD A, but only (HL) can be used with other registers (see CN-80 Aug'89 page 8). The registers A and HL are just special, and we must learn to live with those exceptions. To copy DE to HL we could

```
PUSH DE
POP HL
```

but there is a fast 1-byte instruction to swap registers DE and HL.

```
EX DE,HL
```

EXchange contents of register pairs. Works only with DE,HL and is always written this way (EX HL,DE is illegal).

Now we can use HL as a pointer to string information. At the label ALFA the lengthand then the address of the actual string text are loaded into B and DE.

Let's try it out. Assemble the whole thing as usual, enter BASIC (protect high memory) and load ALFA/CMD as described in steps 1 and 2 at the beginning of today's essay. Now in BASIC enter, for example

```
A$ = "Computer News 80"
DEF USR = &HFA00
X$ = USR ( A$ )
PRINT A$
```

The above BASIC command sequence could be also lines in a running program. If all went well the display shows

```
COMPUTER NEWS 80
```

instantly converted to upper case. Or the other way around with the CAP+DECAP combination, etc.

M o d - 4 C A L L

The USR scheme works in Mod-3 or Mod-4, but Model 4 BASIC command CALL is more flexible and is the preferred method for accessing machine routines. In our assembly routine we don't need EX DE,HL because CALL puts the "variable pointer" directly in HL. Edit our ALFA routine (delete EX DE,HL), assemble, load, and in BASIC enter

```
A$ = "Computer News 80"
ALFA = 64000
CALL ALFA ( A$ )
```

and PRINT A$ should show again

```
COMPUTER NEWS 80
```

or whatever string we had in A$. Once the entry address is defined (ALFA=64000) we could repeatedly

```
CALL ALFA ( B$ )
CALL ALFA ( C$(1) )
```

etc, to convert any simple or array variable to upper case. Or to lower case, and so on.

W h y n o t j u s t B A S I C ?

The case conversion can be done in BASIC without machine subroutines. Suppose we have an array A$() with 1000 strings. A procedure equivalent to CAP conversion could be:

```
120 FOR Y=1 TO 1000
130 FOR X=1 TO LEN(A$(Y))
140 K$=MID$(A$(Y),X,1)
150 IF K$<"A" THEN 180
160 K$=CHR$(ASC(K$) AND &HDF)
170 MID$(A$(Y),X) = K$
180 NEXT X
190 NEXT Y
```

Then why bother with assembly? The thing is mainly speed in this case (and some 80 bytes memory saving). The BASIC scheme would take several minutes to convert the array, depending on the length of individual strings. On the other hand we could write:

```
110 DEF USR = 64000-65536
120 FOR Y=1 TO 1000
130 X$ = USR ( A$(Y) )
190 NEXT Y
```

In Mod-4 we could also use the CALL scheme. Simplify ALFA subroutine (delete EX DE,HL) and change lines 110 and 130:

```
110 ALFA = 64000
130 CALL ALFA ( A$(Y) )
```

With either of the machine subroutines the job would be done in a couple of seconds.

S e l f - s e r v i n g p l u g . . .

If you like these essays on assembly, you'll also like "Mod-III by Chris" and "Mod-4 by Chris" recently pulished by CN-80. These books are complete Owner's manuals, much better than the originals and updated for the latest versions of TRSDOS, LDOS, LS-DOS and BASIC. The chapters on Z-80 have all the info needed for general purpose assembly programming and interfacing with ROM, DOS and BASIC.

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MORE ABOUT COMPUTERS
by David Dalager

How About a HiRes?

No, I don't mean the root beer, I mean a high resolution graphics board. The kind that draws very pretty pictures on the screen of my model 4/4P. Even lets me draw pretty high resolution pictures, even though I'm not a very good artist!

Back in early 1986, I bought a Micro-Labs Grafyx Solution Hi Res board for $199.95. Loved it! Still do! Later on I bought a Radio Shack Hi Res board very inexpensively at a tent sale, I say that because they were still selling for around $299.95 at that time. Installed one of each in my two 4Ps. I love them both! Wouldn't do without them! They expanded my computers' capabilities tremendously! The only program that won't run on both of them so far is TRSDRAW/BAS, which runs only on the RS board no matter what I do.

EASY INSTALLATION?
YES! This is true in both cases! No soldering at all!

On the gate array 4 you remove only one jumper, press into place, for the RS board. Installing the GRAFYX Solution board involves the same action plus clipping on a micro-clip onto only one pin of a chip.

With the non-gate array 4 and both types of 4P, there is only a jumper to remove (and the clip for the GS board) Nothing at all complicated and is true of both board installations. I repeat, no soldering at all! You now have a beautiful computer screen when using the HiRes capability.

EASY TO USE?
There are MANY Public Domain programs, utilities, and picture available from The File Cabinet. While RS is not supporting the models 4/4P, Micro-Labs has a number of programs and utilities for supporting both the Grafyx Solution and the RS hi-res boards. Microdex Corp. has XTCAD and other programs available at very reasonable prices. As a matter of fact, both of them have items at a VERY reasonable price! See their ads this issue.

THE MODEL 4/4P IS DEAD!
Don't you believe it! The number of model 4/4P programs are growing in numbers all the time! I'm continually amazed at the growth! Let me give you just one example: GRAFDISK, updated and completely rewritten by William R. Bowman, a MCTRUG member, is capable of providing you with an increased but VERY fast loading memdisk, 32K for the RS board; 20K for the GS board which will load in about 15 seconds! Not the 1 to 3 minute like MEMDISK! It has all the systems and BASIC needed to operate as a system drive. So if you only have 2 floppies, you can now have effectively 3! This is because you are now operating a very fast system drive which is in the upper 64K plus either 20 or 32K additional memory depending on which hi-res board you choose. What amazed me was typing in BASIC and hitting ENTER that basic was operational almost before I could get my eyes open again! Certainly saves the wear and tear on a floppy drive! Remember: Each time you run a program, the floppy drive must return to the directory, find the appropriate LIBRARY

command and/or any "overlays" needed, read it into memory (temporarily) and do whatever else that may require its attention. That is a lot of work! GRAFDISK (available from The File Cabinet) increases the computer's efficiency tremendously! The docs contain patches to run in the slightly smaller memory of the GS board.

WHICH ONE IS BEST?
Well, that is a very difficult question to answer! So, let's do a comparison. Both boards offer hardware resolutions of 640 x 240 or 512 x 192. That is to say 640 pixels horizontally by 240 pixels vertically. A pixel is: Picture (PIX) ELement (or dot), whether turned on or off. This is the same resolution as EGA (expanded graphics) in the MiSery DOS world, which is the middle between the poorest and the very best (CGA, EGA, and VGA)

From the GS installation manual: "When in the 640 x 240 mode the GS board works exactly like the RS board. Therefore any software which writes directly to the graphics boards should run on either board. The hi-res screen dump files made by Radio Shack and Micro-Labs are identical and interchangable. However, the graphics BASIC does differ in capabilities and syntax. Therefore, programs written in the respective graphics BASIC must be modified." Even then, there are no problems because if you want to run the Micro-Labs programs on the RS board, all you have to do is get the GBASIC 3.0 for the RS board from Micro-Labs. The major reason that a RS board owner might want this is because it works on more DOSs and adds many advantages.

The only program that I've found that can't run on the GS board is TRSDRAW/BAS and is due to the slightly smaller memory on the GS board. Both boards allow you to do text overlay while in the hi-res mode although the info regarding the RS is undocumented according to Ted Carter (Mr. Micro-Labs), although with the GS board this is standard. Programs and info for these features are in The File Cabinet! The model 4/4P technical reference manual contains information on the undocumented port assignments to do even more as well (on either board).

WHAT PROGRAMS AVAILABLE?
Well, as a start you get several with the graphics boards you buy. There are many out there as I said above. I like PRO-DRAW, XTCAD, TRSDRAW for the commercial programs, though Micro-Labs has others as well. For the PD programs, I like Rembrant (the hi-res version) which has an icon menu along the left side with a "fill" icon along the bottom, GrafPack by Mel Patrick that has many excellent utilities, TRSDRAW/BAS which I gave to a fellow whose 9-year old promptly learned how to draw an F-16 in less than 30 minutes!

There are many, many more to enjoy! See The File Cabinet's Hi-Res catalog! Also read "GIF Graphics" in the November '89 issue of CN80, Frank did a wonderful job!

PRINT PICTURES?
Certainly! Provided your printer is capable of a "graphics" mode. Such pictures and picture/calenders you wouldn't believe!

MORE INFO
More comparisons are given in TRSLINK-20 from The File Cabinet. Incidentally, TRSLINK has a reader, which if you have a hi-res board, will now "read" the hi-res file and put it up on you screen! You'll Love it! This started with TRSLINK-25.

Installing HiRes Graphics Board
Installing a graphics board in a model 4 or a model 4P whether a gate array or non-gate array, can be a very simple operation, depending only on how complex the operation is made.

Removal of the case, cover shields has been thoroughly covered elsewhere and will not be attempted here.

The model 4P is presented first as the location of the hi-res board is the same. The jumper designations are the same as well.

Looking at the mother (CPU) board from the rear (card-edge connector side), locate the HEADER CONNECTOR (34 pin) on the right side; make certain that all the pins are straight, as this is a "male" type of connector.

Although the following is for the Tandy HiRes board, the installation for the MicoLabs board are equally simple and

comes with good instructions.

Remove the wrappings from the graphics board being very careful of the possibility of static electricity which can damage the board. Taking the board in hand,look at the IC (component) side of the board, rotate until the large IC is at the upper-left corner which places the female header connector on the right, on the opposite side of the board. Carefully match the male and female header connectors, making certain that all pins are inserted into female connector. Before pushing the board all of the way onto the male connector. Notice the 3/16 inch holes along the left side of the Hi-Res board, these holes must match up with identical holes on the motherboard, if they do, push the HiRes board on all the way. Installation of the board is now complete.

Now to activate the board:

Remove the jumper between E4 and E5 on both the gate array and non-gate array boards. On the non-gate array board the jumper is located adjacent to U125, on the gate array board it is adjacent to U102 (a 40 pin IC). You might like to save the jumper by pulling it off the pins and rotating the jumper, replacing the jumper on only one of the pins.

Model 4 gate array and non gate array installation of the HiRes board.

After the case and shields are removed:

The gate array version is addressed next.

The hi-res board is looked at and held in the same manner as for the 4P, look for the header connector as done in the above, noting that there is a jumper located between pins 16 and 18, remove, install hi-res board as above saving jumper for any future possibilities. Note that this both installs and activates the hi-res board. In the cases where a Smartwatch is installed several solutions are possible, the simplest is by filing a small portion of the hi-res board, being careful not to remove any part of the traces (conductor) from the board.

Non-gate array model 4:

Remove jumper between E14 and E15, saving the jumper as for the 4P, this activates the hi-res board.

Above J1 (the printer card edge connector) about 3 inches, locate the 34 pin header connector, note pin designations ie pins 1 and 2 to the left, match up the connectors (male and female), insert (press).

The installation is complete. Please re-assemble your computer!

WHERE CAN I GET ONE?
One what? Oh! Thought you'd never ask! HiRes Boards are available from:

MicroLabs, Inc.
See their ad this issue.
And myself, see my ad this issue.

MicroLabs also has some very good graphics

-David Dalager

DESKMATE FILER AND ME!
by Helen Hillmann

After nearly four years with my Model IV and only SuperScripsit I finally coaxed my husband into buying me Deskmate Cat #26-1608 as a birthday gift. And I have been able to put it to some good use for volunteer work for a local elementary school's PTA.

I was not impressed with the Text portion for word processing for it did not give me the options that SuperScripsit does. The Worksheet portion was intriguing for it was fun changing numbers and watching the calculations automatically change down the rows although its potential does not equal Visicalc by quite a bit. I had no interest in Telecom, Calendar nor the Mail sections. But FILER made it worth the price of the program!.....The one I have is version 1.0.0 and has to be run under TrsDos without use of the current dating of LsDos. I was overconfident with my hoped for expertise at doing computer work and as a result I had to have both disks of Deskmate reformatted by Tandy/Radio Shack in Texas. This cost extra and had I been more

knowledgeable I might not have needed the Program disk redone. But additional expense teaches many things so now I use a public domain to back up my Data disks that I save for a later day!

It takes time to learn the various aspects of this application program, but I do not make my living by computer work so I have plenty of time to spare.

To run Deskmate you need two drives. The Program disk goes in Drive Zero and the Data disk is placed in Drive One. At the ready prompt you type "DM" and ENTER and from there on you must answer queries as displayed either by highlights or on the status line. There are functions listed on the main menu as well as access to subfunctions gained by using the F-2 key.

The Filer portion allows you plenty of space for labels/fields of information and automatically places things in alphabetical or numerical order depending upon how you set up your personalized system. By using some subfunctions it is possible to change the order of the information displayed.. What I consider as the control to this program is the CLEAR key. The arrow keys play a prominent part in gaining the information needed. When it is time to Print your material you must set/reset the printer defaults but you can have only certain fields of information displayed on the hardcopy; yet the information storage is still available for retrieval as desired.

Prices for this program seem to be reduced now so if you have the time, buy Deskmate for the filer unless you are a good programmer. I can keep a telephone directory with addresses and comments as individualized as I desire. With little effort I can call up all sorts of things using the Find function of Deskmate.
-Helen Hillmann

Ed. Note: you can use DISKCOPY :1 :0 in LSDOS 6.3 at DOS ready for quick backup of data disks.

A VISIT WITH DAVID GOBEN
by David Goben

BUG REPORTS FOR DEA

I have yet to see ANY complex program without a bug in it that is less than 1 year old. I doubt that my DEA Disk Editor/Assembler will be any different. My testers and I have tested it to death, but it always comes out that the simplest bugs are the ones that testers overlook, but most certainly will be the ones that YOU will find first. Therefore, if you find a bug in the DEA program (and be sure it IS a bug and not simply a feature that does not operate as you want it, but DOES operate as documented in the DEA manual), you can speed fixing it up by sending a DETAILED bug report directly to either me or to CN80. The ABSOLUTE FASTEST way to get it fixed is to do the following: Send TO ME your ORIGINAL DEA disk in a disk mailer (or home-made, but LIGHT), and detail ON PAPER what is wrong, what operating system you are using it under, any patches you might have applied, provide a sample program that it will not work correctly on (if needed) and lastly, include return postage (65 cents in most cases, but I prefer stamps, since I can just slap those onto the mailer and get them back into the mail right away). Although the normal procedure is to send your reports to the distributor (CN80 in this case), by instead sending it directly to me I can usually find the bug the same day I receive your report, fix it, and put it back in the next morning's mail. This way you should only have to wait a week instead of longer for return receipt. Although you can still send your report to CN80, you will find that by following the above procedure will result in faster results.

NEWS FOR BASIC PROGRAMMERS

Some of you are aware of my original PACK4/CMD program that was released on the 80 MICRO December '87 LOAD 80 disk as a bonus. It was a program that would pack, unpack or compress a Model 4 BASIC program. What packing means is that it will take a program, remove extra spaces, comments, unneeded tokens (such as LET, GOTOs after THEN and ELSE, etc), and combine as many statements onto a line while maintaining complete program logic. Unpacking essentially re-inserts spaces as needed, expands tokens and places each

statement on its own line, yet still maintain proper program logic.

Well, PACK is now back and full of new and more powerful punch! I have attacked it with full steam, totally re-writing it and at the same time fixing a few minor bugs from the old version, and added some new features. I also completely rewrote my MS-DOS version. Finally, to round things out, I have also written a Model I/III version. Please note that this is NOT an "upgrade" of that Dec 87 LOAD 80 program (like the one I offered in '88), but is rather a totally NEW program.

One of PACK's neat new features is SUPER PACK, which can make all lines have UNLIMITED length. Thus a line could be several kilobytes in length, rather than having the 255-byte limit. This adds security to your program because no-one can edit one of these long lines unless they first unpack it using the PACK program. But best of all, it will make your program run their absolute FASTEST. The only way to make them run faster would be to compile them with a BASIC compiler. So stay tuned to CN80 to check for its availability!

SCROLL PROTECT FOR I/III

Now we get to the meat and potatoes. In a previous article (CN80 Vol 2, No 5, pages 15 and 16), I showed Model 4 users how to safely scroll protect up to 23 lines using simple pokes. But what about the Model III, which is still stuck with just 7 lines protectable, or the Model I, with NONE? Never fear, David's here! While riding the crest of a fresh batch of brain storms, I wondered how hard it would be to provide extended scroll protect to not only the Model III, but to the Model I as well. It was so difficult that it took me all of 3 hours to write. But then ol' Dave's brain starts whirring, and he said "Gosh, on the Model 4 I can send code zero to the video, and then any zero-31 or 192-255 code after it, and it will display a special character code. Hm, currently on the III we have to poke them on the screen to get them. What if I added this feature?" But that wasn't enough. I next thought, "Gee, in using a Model 4 in the III mode, by sending certain control codes to the display I can invoke and turn off reverse video." So I added that as well. So what started out as just a simple scroll-protect program ended up being a major work (of art). I sure hope you folks think enough of it to USE it and take full advantage of it (and since I'm releasing it into the PUBLIC DOMAIN, you can include copies of it with a program you are yourself distributing or selling, as long as you do not ALTER it or CHARGE for it), and give proper credit.

Program Listing One is a BASIC program that, when run on a Model I or III from BASIC (PLEASE note that in the listing's DATA statements that there are NO ohs, ONLY zeros -- in case some of them don't get slashed), will create on disk a program called VIDX/CMD, which is the video extension program that will add all these neat features mentioned above. To use VIDX/CMD, return to DOS (After running the program), and enter VIDX. VIDX/CMD will load, relocate itself to high memory, protect itself and report that all went well. You are now set for great screen control!

One the Model I, the only advanced feature is scroll protect, since it does not feature special and alternate characters, or reverse video like on the Model 4 in the III mode. But even with just that, you can do a lot with it.

USING VIDX

You can enter VIDX from one of two ways. You can enter it using the command VIDX as demonstrated above, or you can enter VIDX X. The extra "X" indicates EXTEND, in that the scroll-protect will emulate the Model 4 type rather than the Model III type. What I mean by this is that on the Model 4, when you enter a CLS command the ENTIRE screen is cleared. On the Model III, entering CLS (or simply homing the cursor) with screen lines protected will only clear the UNPROTECTED screen lines. This latter format is the default. This unique feature of the Model III is UNDOCUMENTED. Some of you may have already figured this out when you first started playing with scroll protect on the III.

How do you scroll protect? Well, on the Model III you do as you always did: you poked a value into address 16916 (4214H). However, this will not work on the Model I. Therefore, on the Model I the scroll protect address has been changed to 16428 (402CH).

Go into BASIC and try poking a value into 16916 on the Model III, or 16428 on the Model I. Notice that it will accept ANY value, but will truncate it so that zero to 15 are accepted OK, but 16 would be truncated to zero, 17 to 1, 18 to 2, and so on. Notice that if you did not enter VIDX with the "X" parameter, that doing a CLS will clear ONLY the lower screen. Neat. However, you can still PRINT@ in the upper, protected area. Think of all the nifty things you can do with this: split screen displays, non-eraseable messages that will not scroll off the screen, banners for programs, scoreboards for scrolling games, etc.

If for some reason you want to set the Model III so that it will ALSO use address 16428 instead of 16916, you can patch VIDX/CMD to do so by changing a single byte in the program. This might be handy in a program you write that you want to run on the Model I and III without modification. Using your PATCH program, change the 01 (zero-one) value at hex address 5200 to 00 (zero-zero). Refer to your DOS manual or "MOD III BY CHRIS" for details on patching addresses. After the patch, poking to 16916 will do nothing after you load VIDX again. You will have to use 16428 (409FH).

I must point out at this time of another unique feature of the Model III that is ALSO undocumented. That is that when you enter RUN (without a line number) or NEW, that the scroll-protect value stored at 16916 (if there was something there) will be made ZERO (I'm starting to wonder how many OTHER features are undocumented on the III). If you choose to patch VIDX to use 16428 as outlined above, this unique feature will NOT occur.

Program listing 2 is a BASIC program that, when RUN, will create a program called PROTECT/CMD. It, like VIDX, is used from the DOS level. With this program you can scroll protect lines right from the DOS READY prompt. All you have to do is enter PROTECT number, where number is a value from zero to 15. If you enter zero or no number at all, then scroll protect is turned off. Also, you can use this program on the Model III even without VIDX loaded. It will set both 16428 and 16916 to your selected value. We're having fun now.

MODEL III VIDX ENHANCEMENTS

On the Model III, either from BASIC or from another program, you can send a zero (null) byte to the display driver (XOR A and then CALL 33H in machine language), and then send a byte with a value of zero through 255 (LD A,value and then CALL 33H from machine language), and the code will be placed right at the cursor position. For example, on the Model III with VIDX loaded, enter and run the following program from BASIC:

```
10 CLS
20 FOR X=0 TO 255
30 PRINT CHR$(0);CHR$(X);
40 NEXT X
```

You will notice that it will print codes 32 through 191 normally (these are the usual displayable characters), but special characters listed in the appendix of your DOS manual for codes zero to 31 and 192 to 255 will be displayed right there on your screen, all without having to poke them at all (even if the alternate character set is not switched on and you have tabs enabled). Now you can print these special characters using simple print statements and not have to calculate poke addresses to properly position them. For example, PRINT "COPYRIGHT " CHR$(0); CHR$(239) " 1989 BY JOE SMOE" will place the circled copyright symbol after the word COPYRIGHT and before 1989. Best of all, if you decide to move such a line to a different position, you never have to worry about recalculating a new poke position for your symbol. A breath of fresh air.

REVERSE VIDEO WITH VIDX

If you are running on a Model 4 in the III mode, you can ALSO take advantage of REVERSE VIDEO. To use it, you will find that 2 more control codes have been added to your list of video controls. Code 16 will turn reverse video on. Code 17 will turn it off. For example, PRINT"TEST-" CHR$(16)"REVERSE" CHR$(17)"-VIDEO", will print the word REVERSE in reverse video. Code 16 actually does two things; it enables reverse video and turns the high-bit routine on. This is actually simple and only sounds complex. You see, reverse video is actually a HARDWARE command telling the video controller chips to change codes 128 through 255 to represent REVERSE images of codes zero through 127. The high bit

routine, on the other hand, is a SOFTWARE command, controlled by the video output routines (VIDX in our case). When the high-bit routine is turned on, you can poke codes zero through 127 on the screen and display them in normal video, but any characters send through the display routine (either through VIDX or the LS-DOS 6 display driver) will have their high bits set (bit 7, a value of 128, which is unused for codes zero to 127). This effectively sets their values 128 higher. Thus zero becomes 128, 1 becomes 129, etc. Of course this is only internal to the VIDX display routine. If you sent a code in register "A" to the display driver from machine code, on return from the display driver register "A" will still contain the original value.

As expected, code 17 turns the high-bit routine off. Thus codes will NOT have 128 added to them internally. However, the reverse video is STILL in effect. Just try printing codes 128 and up and see what happens. To turn the whole "smeal" off and reset codes 128 through 255 to normal, you print CHR$(28), the HOME CURSOR code to the display. Be aware that printing codes 192 through 255, if tabs are enabled, will still do tabbing, because this is a software-controlled feature.

Well, I've run out of room. So fire up the imaginations and submit programs that use these new features to CN80. Meanwhile, I'm going to get busy preparing more exciting capabilities for you to flex on your I/III/4's! HAPPY COMPUTING!!!!

David Goben
417 Prospect St, 1st Floor
Willimantic, CT 06226
(if you write, send a SASE for a reply)

A REVIEW OF PROGRAMS ON GAME DISK 12 AND 10 from The File Cabinet Library.
By Hugh Abrey

The following programs are found on game disk number 12:

ELECTRO/BAS
This program is a game of run and chase. The playing field is enclosed by an electric fence and also has electronic barrier. You run and try to avoid being hit by lightning. It is possible to teleport to a safety zone. This program might amuse young children.

LOTTERY/BAS 1989-88 By C. W. Smith
Prints out a series of random lottery numbers, after you input the highest number allowed in your state.

MIKE/BAS
Makes a pin-up calendar for any year you choose. The figure is that of a well-built young man.

MSQUARE/BAS
Prints Magic Squares of the size you specify, from 3x3 to 19x19 numbers. Each row, column and diagonal all total the same.

PASART1/BAS
Creates designs based on PASCAL'S Triangle. It gives a list of options for you to choose from and prints the pattern plus a Calendar for the year you choose between 1600 & 2300.

POKER7/BAS
Is a Jackpot Poker program. You may watch seven players or be one of them. You can even choose which position you will play.

There are no Wild Cards and a three card draw limit. You must have Jacks or better to open. Chips are $5.00, $10.00 & $25.00. It shows the individual hands as dealt, each player's action and the cards again after the draw, plus what each player elects to do.

It keeps a total of the amount in the pot and gives the standings after each hand is played out.

This program has over 500 lines of source code.

ROCKET/BAS
Offers two choices. #1 is for designing a Rocket. You specify the weight, body diameter, drag and type of motor; there are eleven motors to choose from.

It shows the time, in tenths of seconds, and the altitude, velocity, acceleration and weight for each time interval and then adds the max. altitude and time to get to the peak.

#2 Gives the stability calculations. It will draw the rocket and ask you to furnish the dimensions and information necessary for the program to calculate the rockets stability and displays it on the screen.

START/BAS
Is called STAR TREK 2500 AD. It is very complicated and different from most of this type game. You can save a game for replay, or to continue, or play a new game.

It has twenty eight screens of instructions and hints, listing the goals of the game. They printed out on fourteen pages. It has ten levels of difficulty and twelve different commands with most of these having several options.

The program uses over six-hundred lines of source code and takes a great deal of strategy and knowledge about the game to become proficient.

The following are on The File Cabinet Game disk number 10:

ESCAPE/BAS
Escape from a jail cell. FIRST ADVENTURE by DAVID MENY. May 15th, 1985. The program has over 350 lines of source code but there are no instructions on how to play the game. Anyone familiar with this?

FORTUNE/BAS
This is a wheel of fortune game for one to five people. It has instructions that say when your name is blinking, reverse video, it's your turn. It shows the categories and players names. At the bottom of the screen it shows the options, F1 Spin the wheel, F2 Buy a vowel, F3 Guess the puzzle. At this time pressing the keys, any of the keys, has no effect. It does nothing.

There is a program on the disk called FORTUNE/DAT. But I don't know how to use this. Perhaps it must be used in conjunction with FORTUNE/BAS. Can Someone help?

GUNNER/BAS .. WELCOME TO BUNKER 7.
This is a gunnery angle of trajectory at which the artillery is to be fired, to hit the target,, at specified distances. You are limited to ten shells per target. With some practice it is not too difficult to come close on the first or second try.

LANDER4/BAS
As the commander you are to land a space ship. The distance you are above the landing spot is given along with the rate of descent and the amount of fuel left.

It takes quite a lot of calculation and skill to make it all come out right for a safe landing.

LIFE/BAS
LIFE ON A 4P by L Vancil.
This one also has no directions and I didn't figure out what to do with it. Can someone help please?

PARTYGM/BAS
This is a game for adults, A kind of strip poker and added features. OK for a married couple, if your wife is willing.

PICKS/BAS
This one is a Football program to pick the point spread of any given football game between the twenty-eight teams of the N.F.L.

POKER/BAS
This a good poker game. There are no instructions on how to play the game. You can state which cards you want to hold, cancel or enter for a new hand. It keeps track of the coins won or lost.

POLYNADV/BAS
You are at a Polynesian Treasure house. There are no instructions to go with this; you are on your own unless someone offers help. HELP!!

SEABATL4/BAS
You are in a Submarine set out to destroy the enemy ships in your area, without letting them destroy you. The ships have depth charges and there are monsters.

Torpedoes don't affect them but a missile will kill them.

You may issue any one of ten orders to help you out of your dilemma.

SIXTYMIN/BAS
A satire of the Sixty Minutes TV program with Dan Rather and Morley Safer, having to do with a teenager and his computer. It also involves Senator Proxmire.

SQUARE/BAS
A game for one or two players. Play an opponent or the computer. It lays out a grid of dots. The object is to place a marker at four corners to form a square before your challenger can complete his, or keep him from making a square. Each player has twelve markers and a choice of who starts.

It sounds and looks easy but the computer is a real challenger. GOOD LUCK!!

AWARI/BAS
There are no instructions with this game and a list of the program didn't help me know what it was to do or how to get started. Help!

BLACKJAC/BAS
This is a good game of Blackjack played by Casino rules. You have the option of having a running card count and may automatically stand on seventeen or nineteen card count. The minimum bet is $2.00 and the maximum is $500.00 but not to exceed your bankroll which starts with $200.00. You can choose to play with one, two or four decks.

CRESTORY/BAS
This program creates a story, part of which is already programmed in the computer. You enter your name, eleven adjectives, five adverbs, ten nouns, two first names for a man, a women's first and last name, plus a geographical location, a kind of liquid, and on or two exclamatory words. The Computer then uses these to write stories or a newspaper ad. It can be quite amusing, depending on the words entered.

CRAM/BAS
A rapid moving line starts across the screen. you change the direction, or make turns, with the arrow keys. The object is to make as many turns as possible without hitting any of the lines already drawn, which ends the game.

This is a fast moving game requiring practice and skill.

DOGDO4/BAS
This is an upgrade of an older game. It was written by Colin Dunn. It is an exercise in trying to cross the street without stepping in dog poop. There are cripples to help, for extra points, and manhole covers for those that know what to do with them. It becomes more difficult as you go along. There are least eight levels of play. Interesting and challenging.
-Hugh Abrey

Editors Note: We thank Hugh for taking the time to review these game disks and write a short description of what the games are all about. We will print more outline descriptions of the programs in The File Cabinet Library as time goes on.

For those who like the mental challenge that most computer games provide, you will certainly find one that suits your taste among the 25 disks in this collection. Just think with 15 to 20 games per disk for $4.00, when one game selling in the stores goes for $9.95 and up.

We would welcome your input on The File Cabinet disk that you have purchased, and not just the game files, but the utilities, the business and other files as well.

TRANSFERRING FILES VIA THE RS-232 PORT
by John Gregg

One of the problems we encounter when moving from the usage of one computer to another is the transfer of that favorite basic program which cost so many hours of our time. Or perhaps you have a large data base you would prefer not to retype. The movement of these can be accomplished without too much pain.

The easiest way is probably by means of a conversion program if available. Otherwise the use of the RS-232 port is fairly simple

and inexpensive. It is, however, much slower.

The pin assignment of the RS-232 standard are as follows:

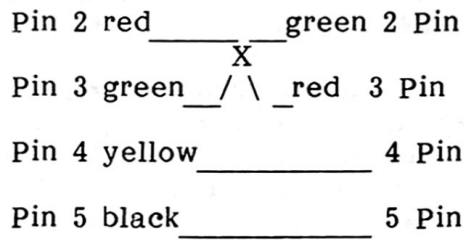
1 Ground
2 Transmit data
3 Receive data
4 Request to send
5 Clear to send
6 Data set ready
7 Signal Ground
8 Carrier detect
20 Data terminal ready
22 Ring indicator

Since the usual connector used as the serial port is a 25 pin "D" it is apparent that all are not used. Some are reserved for future use and some are not required for all applications. For example, Tandy's Color Computer only uses four. Some AT class machines uses a nine pin connector.

While data can be transferred with a direct modem to modem connection, it seems to work better with a direct port to port connection. For this you need a null modem. These can be purchased for less than $10.00 from various sources. If you already have the cable this is probably the best solution. Rather than purchase both the cable and null modem you might prefer to construct a "null cable". If the connectors are non-standard, you may have no choice but to construct it.

Purchase the proper connector for each serial port and the proper length of four strand wire. Telephone cable works well.

Begin by soldering one wire to pins 2,3,4, and 5 on one connector. For example, the red wire to pin 2, the green to pin 3, etc. Only these pins will be used. On the other connector, reverse the wires from pins 2 and 3, that is the red will be soldered to pin 3 and the green to pin 2.



Connect the cable to the serial ports, load your favorite communication program on each machine, and you are ready to transfer. The task goes rather slowly with large files at 300 baud. Try 1200 or even 9600. Some machines will, some won't. Parity and bits is not likely to be critical but should be the same in each communications program. Try the defaults. No parity, 8 data and one stop bit should work fine.

Your BASIC programs will have to have been saved in ASCII format (SAVE"NAME/EXT",A). Also your data files or you are likely to get garbage. This does not assure that your BASIC program will run on the other machine. Some will, others will require some modification due to differences in key words and syntax.
-John Gregg

FILE MANIPULATION FOR BEGINNERS
Part V

We have many readers who have just started to expand their horizons in the use of their computer. Several have had their computers for years, working from within commercial canned programs, who are now just getting acquainted with their DOS systems.

To get the full benefit from your computer, it is a must that you study and use the capabilities that your systems disk operating system provides. You really don't need to know all the commands, but it is mandatory to know how to use such things as BACKUP, DIRectory, COPY, REMOVE, and LIST commands from the DOS command level.

Let's not leave out BASIC. You don't have to learn any more BASIC than a few of the standard BASIC commands to be able to use some of the great public domain BASIC programs that are available. Such as those you can find in the File Cabinet Collection.

To be able to enter BASIC, to load programs, run the programs, and to exit the BASIC mode back to DOS ready, are about all you need, along with List and LList

which are used to call up the program's text or data disk text to the screen (LIST) or to send it to the printer (LLIST).

Most DOSs use very similar commands to do the same thing, and the following is not meant to be a tutor for every DOS now in use, it is intended to make you aware of how few commands you need to know to break out of depending on canned programs.

For example to remove a file from a disk using TRS-1.3 the command is KILL and in TRSDOS 6.x and LSDOS 6.3 it is REMOVE. But the concept, the spaces needed in the command line, the colon for disk drive number and several other syntax layouts are the same, or very similar.

If you have just received a disk full of programs and you don't know what is on that disk, then reading the directory is the second thing to do. The first thing you should have done was to have made a WORKING COPY of the original disk. Then, if the working disk copy becomes damaged in the future you will have your original disk to restore it with.

The first step in any file manipulation always starts with the use of the BACKUP command.

The next question that comes up is - "I can't get the xxxxxx/DOC program to run."

That is because the file is not a program, it is most likely a data text file.

Another question commonly asked is "I can't get the xxxxx/CMD program to come up on the screen."

That is because the file may be a machine language program that does not have a banner and a menu. It is a computer command program that tells the computer to do something and does not need to talk to you via the screen or give you a menu of selections to use. Many times the /CMD files will do such things as put the computer into the BASIC mode, so it can run a basic program without you having to enter all the key strokes to do the same thing.

The next common question is, "How do I get the printer to print a program?"

To print any file with the extension of /DOC or /TXT which are not programs that run on their own. Usually they are text files that provide the documentation for the program that they were written for.

For example:

KONAN/BAS - normally would be a basic program that you would have to load into basic to run.

KONAN/CMD - normally would be a machine language program that would run all by itself by typing

KONAN <ENTER> at dos ready prompt

it also might be a command that would enter basic, load the program and run it, as is the case with our README/CMD on the disk, which installs basic, runs the program and reads the README/TXT file.

KONAN/TXT - /DOC, etc. are text files that can be brought up to the screen by typing

LIST KONAN/TXT <ENTER>

or type

LIST README/TXT <ENTER> and you will see the difference between reading the text under dos and using our README/CMD program command.

/DAT - files with this extension are normally given the /DAT extension to reflect that they are data files. One common use is to identify the file that a program sets up to store certain information for access by the program as it runs. Normally this type of /DAT file can not be used for much else, other than by the program it stores data for and then feeds back to.

However any three letters can be used as file extensions to mean whatever the author wants to indicate.

For example I use /LTR to indicate it is a letter in my correspondence files, and /SCR for documents in SuperScripsit, VisiCalc automatically adds the extension of /VC, if you don't indicate anything else. You can use anything you want, but some form of

standardization really helps the other person who might be using your data disks.

So, the commands to view a file are the same regardless of what the extension is. Generally if you view a /CMD file the computer screen will show you all kinds of weird things, and you may have to hit reset to restore the screen. But it is a good way to see what the file is.

An ascii text file will look just like that - a text.

A machine language program will look just like that - something only the computer could love.

A complied basic program would be a bunch of jumbled lines on the screen. But a basic program stored in the ascii mode would look just like the basic program, just the same as if you had loaded the program into BASIC and then asked to see what it looked like by typing LIST <ENTER> while in basic with the program loaded into basic.
-CN80

SPEAKING LOUDLY
by Dale Hill

"Thanks, Dale! Wow, this is neat!"

We had taken a girl for the Thanksgiving Holiday who couldn't be with her parents. Her name was Patricia, and we have had her before and expect to have her again. I had asked her if she had any computers at her school or if she got to work with any. Her reply was negative, so I quickly sat down at my Model 4P with my trusty 120 DMP printer and pulled out "Long and Loud".

Did she like the results? You bet. Within a few minutes, she had a two-page banner that said,"Patricia is number one!" with a happy face before and after her name which was printed above the rest of the quotation.

"I can put this above my bed," she said admiringly.

Is a banner with Long and Loud that easy? Well, ... with all honesty yes, if you have the documentation. I had looked at a copy of the CPM version of Long and Loud in the past with the idea of purchasing it. Without documentation, it was difficult, but not only that, I do believe getting a good installation with my setup would have been difficult. With TRSDOS version and the manual, it is a piece of cake.

Much has been said about Long, but little has been said about Loud. Funny, the name "Long and Loud" is a bit confusing. Even though banners are long, one has to use "Loud" to print them. "Long" is for printing spreadsheets out sideways. Maybe a better name for it would have been "Sideways and Long"!

At any rate both come on the supplied data disk from Spectre Technologies, Inc., which can be purchased from good ol' CN-80. Moving them onto their own system diskette takes up about 120k and can be done easily and efficiently.

The installation process is as easy as rolling over in bed. Simply type "Install" and the rest is elementary - after a short wait. When choosing a printer, the installation process gives you 4 screens of 16 printer choices and one more screen of only 4 choices: 69 printer choices in all. Okidata printers have 4 files with 12 printers listed so the actually number of printers supported is probably closer to 200 - not bad for a $34.95 jewel from CN-80. Incidentally, Radio Shack printers are well supported, though the Line Printers are not listed nor is the DMP 105.

After installing LOUD, either type "Loud" as a command file or press enter over the LOUD/CMD on your DOS shell, and your first screen is up in little more than a flash. Documentation is needed here and should be read carefully. Once, though, you get the hang of it, bannering is easy.

Three "Output formats" are supported: Graphic Mode, Quick Mode and Quick Mode Auto. Lets face it, the Graphic Mode leaves a lot to be desired and, with 4 available print lines, text must be put on the first and fourth line or the banner will be jumbled. The print out using the Graphic Mode is simply not that "aesthetically

pleasing". But wait 'til you try the other two.

Using the Quick modes, the program will not allow you to jumble up text as easily and produces well defined fonts: Times Roman, Sans Serif, Olde English and Script. Each of these "Typefaces" take up about 12k of space on your diskette. The banners produced are "Dot Matrixy", using either the asterisk or the letter of your choice to print out the words. The fifth choice is a neat addition to the banner program.

Typeface 5 is actually 13 choices of pictures that can be printed out on the banner with the alphabet A-M assigned to each one. Our visitor sure loved the happy face, but the heart is neat as is the musical note and the floppy disk. A typographical error in the book leaves space for a little laugh.

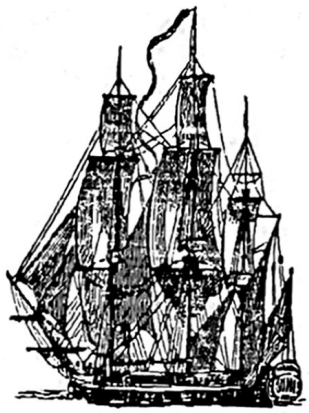
I printed one banner out for my daughter and the letter F is assigned to the symbol "space". Now, I had never seen a space printed out and so I tried it. My daughter saw the banner with hearts on it and a couple of out-of-place symbols.

"What are those, Dad?" she asked.

"Those were supposed to be spaces but they ended up being 'SPADES', dear!" I laughed.

I eat a lot of crow around our house and living near Fort Cobb Reservoir, the crow capitol of the world, there is a lot of crow to eat. I must admit, "Loud" is an excellent banner program, easy to use and quite flexible. With a price as advertised in Computer News 80 of $34.95 for both Long and Loud, why not jump in head first and try it - your kids will love it. You never know who may have a budding PRESIDENT in their household.

-Dale Hill



ZAPPING THE MODEL 4 PRINTER DRIVER
by Bob Martin

It all started about a year ago after I had purchased all the back issues of CN80, read them all about two times, and decided to use some of the Utility programs I have been collecting. My pet peeve at the time was the way the printer would kick completely out of its operation if for any reason it went off line during a printing session - and I print a lot of /doc/txt files, as well as basic programs, to see what they are all about. I tried David Goben's patch in CN80's Vol. 1 No. 1, which was supposed to force the computer to wait until the printer goes back on-line, but it didn't work (I found out later that it was never installed like the computer said it was).

So I called on "Big Will" at nearby Ferris State University and asked him if he had the fix. Now, "Big Will" is who I look up to in the TRS-80 world. He tore apart and rebuilt a Model 4, dis-assembled the code and re-assembled it the way he liked it, forgot more than I'll ever know, and he's always got at least three answers to all my questions. Well, he told me all about the printer driver, sent me down a printout of the code and told me to change 0E2C from 20 to 18, and why, but when I hung up the phone, all I could think of was "what the bleep did he mean by that...". I did however catch the challenge he put to me, so I opened up my copy of "Model 4 by Jack" and dug in. Now that CN80 has been giving us articles on Assembly Language, the code Will sent me makes a little sense, but back then I was lost. He told me he'd be right proud if I could do it in two weeks, but that he would call me in a month if he didn't hear from me first, so I dug right in.

The first thing I did was invoke the DEVICE (B=YES) command, which listed *PR => X'0E01', the start of the driver code in memory. I used Mel Patrick's OVERVIEW//CMD and dis-assembled 0E01 to 0E3D, and duplicated the program that Will had sent to me, both listing 0E2C as having a value of 20, my target. I then used both Brian McKay/Bruce Travers' TSK/CMD, and David Goben's UTILITY4/CMD to find, display, and then zap the value of 0E2C from 20 to 18 and then try out the printer - and after turning it off-line in the middle of a session, everything waited patiently

(while I ate supper) until I put it back on-line and it resumed where it left off. Now all I had to do was change it on the disk, wherever the bleep that is.

Since David Goben's original patch was in BOOT/SYS, that's where I started. So, using my trusty SHELL20/CMD (a bonus shareware program in CN80's Disk #1 and also found in the FILE CABINET), I effortlessly <L>isted out all the sectors of Cylinder/Track 0 to the printer, using the password LSIDOS, and went looking for a match of the ".....z...>." ascii line that contained the 0E2C byte 20 in the line of hex/ascii in the memory sector (I didn't then, and don't now, know how to do it any other way - but I'm learning). And I found that sucker in sector 000C hex, the 13th sector, with the byte "20" in the third row (row 20 hex), under column 0C hex, therefore, it was the 45th byte (2C hex) in this 256-byte sector. I promptly inserted a BACKUP COPIES of my system disk and zapped them to "18" (one with TSK and one with UTILITY4, learning the mechanics of both). I re-booted each one and smiled inwardly as both passed the "printer off-line" smoke test.

Then, upon closer inspection of the same line, I found David Goben's patch, that is, the lack thereof - my computer had lied to me and had never made the patch of the seven "F"ind bytes in record 0C hex, starting with byte 21 hex....which made me think PATCH THE SUCKER! So I re-read Henry Herrdergen's dissertation on Patches for Model III, dug into Model 4 by Jack, insert another BACKUP System Disk and typed in PATCH BOOT/SYS.LISDOS (D0C,2C=18:F0C,2C=20) and BWALLAH! It worked! Now this is no great feat for you heavyweights, but its a landmark for me.....I can fight my way through this stuff if I think it out, read a lot, and exercise a little caution.

Well, I called up Will and gave him the good news and he said he had confidence in me - then he gave me some "bad" news.....that he had acquired a loaded 286/12, 1Meg of RAM, 60 Meg, Dual Floppies, math co-processor, modem, EGA, yaadi-yaadi etc, and that he had boxed up his Model 4 and he "won't be back" - but he'll be around. Well, that's not all that bad, because I also have a MS-DOS machine and we both measure our software in feet (TRS-80 and MS-DOS). But before he hung up, he told me to get off my duff and put the two 360K double sided drives I got for a right price, either into or external to my 4P, in a challenging sort of way, "and have some fun" (on a lesser scale than what he did to his Model 4), and I knew just what he meant. All I lack is the guts, but its winter, and its time, so here's to the next time.
-Bob Martin

RETURN ADDRESS BASIC PROGRAM
by Henry A. Blumenthal

I decided to send this program to CN80, for whatever it's worth. It is a BASIC listing, for the Model 4, (see program listing number three) of my program for a DMP130A printer that gives a return address complete with a graphics representation of the printer. The graphics part comes from the printer manual. Line 170 is an optional form feed if you want only one return address on a printer page.
-Henry A. Blumenthal

OPEN FORUM

LTR: This open letter is to express my appreciation to an "OUTSTANDING" person in the Tandy computer community. This person is none other than David Dalager of Arlington, Texas. I heard of David via the TRSLINK newsletter and called him when I started having trouble with my Tandy 5 Meg hard drive. I was having trouble getting the computer to recognize the hard drive and the hard drive was acting erractic and giving me numerous Error 11H's. In talking to David he instructed me to try several things before suggesting to send the HD to him.

I sent him my 5 Meg with instructions to completely check the HD and call me with the results. I also inquired about replacing bubble with a larger one. He called a few days later with good news, bubble was ok, but power supply and several other small

items were bad and needed adjusted. He also came up with a 20 meg bubble (Mini Scribe) for quite a reasonable price. Needless to say I didn't expect to get a hard drive with double + speed over the 5meg and the hard drive formatted into 5 drives. He also installed a new power supply and line filter. What I now have is a spectacular Tandy with all the storage I need and a great working machine. All I have to say is; if you're having problems with your Tandy, wanting some information, or looking for some equipment, the one call to make is to David Dalager in Texas at P/N 817-640-6204.

David also suggested that I check out "Computer News 80" for some excellent information and reading on Tandy TRSDOS/LS-DOS equipment. I now have a subscription and look forward to each issue. It's great to finally find some help on these great machines!
-R. J. G. Youngstown, OH

LTR: I do not claim to be an expert on keyboard repairs, yet I frequently have to repair various keyboards from many different manufacturers. The TRS-80 users are lucky in the fact that the keyboards use common keyboard switches. Other computer users are not so lucky (Commodore users to be specific).

My recommended procedures for keyboard maintenance start simply: keep your keyboard covered when not in use, and wash your hands before using. When you do start to find a key acting "sticky" or not functioning correctly, then you need to take appropriate action.

Some keys stick because the switch shafts have to much dirt on them. Remove the key caps, wipe the exposed part of the shaft with a dry cloth or paper towel to remove as much dirt as possible. Then I recommend using a light oil that will not harm the plastic. I have found that WD-40 has worked on most of the TRS-80 keyboards I have tried. Spray a little of the oil into a container. Insert a cotton swab (Q-tip) into the oil. Apply it sparingly to the shaft of the switch. This usually solves the problem. You may need to repeat the "wiping, oiling" processes a few times on very sticky key switches. If that does not work, you should replace the switch.

When the contacts get bad, I find that they usually just need a good cleaning of the dirt. Most contacts inside switches either have dirt breaking the contact or the contacts have actually been worn away (the action of the switches have a tendency to keep the contacts clean - they are a bit abrasive). I find that giving the switch a good soaking with isopropyl alcohol will usually help remove the dirt. The comment about putting the keyboard in a baking tray is a good idea. I do not use non-residue cleaners on key switches, unless I know exactly what is inside the switch (which on many occasions I do). The switches should be operated to make sure the alcohol does get inside. The keyboard should then be set on a cloth or paper towel, with key side down. The switches should again be pressed to allow the alcohol to drain out. Let the keyboard dry in this position for some time.

If you have one or two bad keys, you can usually fill the switches with cotton swabs soaked in alcohol. To remove the alcohol, take the cloth or paper towel and operate the switch a number of times. This is a pumping like action which helps remove the alcohol. The cloth or paper towel will help soak out the alcohol. Again let the keyboard sit for a good while to dry. The alcohol may "dry out" the shafts of the keys and cause the sticking key problem. Again, putting a little light oil on the shaft should decrease the friction.

My best recommendation is to replace the switches. Frequently, the computer has had a lot of use (otherwise, you know the key is dirty from non-use). This usually means that key action has worn the contacts, and thus cleaning is only a delay of the inevitable - key replacement. The switches for most TRS-80 keyboards are available, but may require you to look. I found a local supplier for my switches that could supply them for $2.00 each. There are two types of switches (typically) for the TRS-80 keyboards - two pin and four pin switches. Check your keyboard before purchasing.

If you have a number of switches that are bad, I recommend a keyboard replacement. This is relatively easily done, but you may

ask for help from someone experienced with such devices. The cost of continually replacing switches as they go, will be more than the keyboard replacement. Additionally, the replacement will typically last longer than a repaired keyboard. There are other ways of maintaining and repairing your keyboards, but these have given me the greatest success and the longest lasting repairs. Be sure to determine how the keyboard is used, and you will be able to determine the best type of repair or cleaning to do.
-Bret Bensley

A WORD ABOUT PRINTER RIBBONS

As you will see when you check out the TRS-80 Product Source section, we have stocked an almost complete line of printer ribbons for the Radio Shack printers.

We have tried to answer the needs of those who have told us they could not find the correct ribbon for their Radio Shack printer. Or if they did find them, the price was very high. Or they had to buy a minimum of six ribbons to place a mail order for them. For many users six ribbons at a time is too many. We believe that our service which allows you to buy just one ribbon or as many as you want, at a reasonable price, provides just another service our readers can use.

If you have a DMP 105 printer - don't throw the cartridge away. These cartridges are no longer available except from Tandy, but they can be easily refilled using the ribbon refill pack that we stock.
-CN80

A: J. M. of Madison Heights, MI, Open Forum (Vol 2 No. 11, p. 26) is having a problem with the Alpha Technology memory board. I don't have any experience with a Model 4P, so this may not help.

My instructions for a gate array Model 4 require that the break key be held down on power up and answer the memory prompt with 32000.

Within the past two weeks I installed a board I've had since July 1987, (RAM prices finally came down). The 74LS32N chip had been inserted backward. When I attached the final 3 wires in the instructions and powered-up the result was a blown chip and garbage on the screen. No other damage apparently, but it was a nuisance to trouble shoot. Luckily I had a spare chip on hand for another project.

If J. M. or anyone else is installing this design board I would certainly suggest a close visual inspection to make certain all the components match the socket orientation notches. It's an easy mistake to make, especially if non-technical labor is used to stuff the boards.

The board works great now (evidence this letter) SuperScripsit is so much faster from RAM disk 1024, and quite too, except for the cooling fan.

Please keep up the good work.
-P. D. Coos Bay, OR

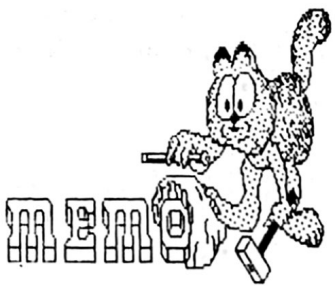
A: P. E. H. Long Beach MS (Open Forum Vol 2 No. 9 pg. 24) wrote that in using Multiplan for calculations for successive months, he did not want it to re-calculate past months. Suggest he try making a DIF file of the area on the spreedsheet where he wants to remove the formulas and then re-boot the DIF file back into the same area to keep the caculated data intact.

Don't forget to copy the formulas to column for the next month before locking the past month.
R. L. M. Fairmont, MN

Example of DMP printer artwork using The FILE CABINET HiRes Utility and MacPaint Picture Files. No HiRes Board Required.

VIDX/CMD - PROGRAM LISTING NUMBER ONE by David Goben

```
10 CLS:PRINT"BUILDING 'VIDX/CMD'":RESTORE
20 H$="0123456789ABCDEF"
30 OPEN"O",1,"VIDX/CMD":L=90
40 CS=0:L=L+10
50 READ A$:IF A$="END"THEN CLOSE:END
60 IF LEFT$(A$,1)="-"THEN 80
70 A=INSTR(H$,LEFT$(A$,1))*16+INSTR(H$,RIGHT$(A$,1))-17:CS=CS+A:GOTO 50
80 IF VAL(MID$(A$,2))=CS THEN 40 ELSE PRINT"CHECKSUM ERROR IN LINE"L:END
90 ''' DATA AREA '''
100 DATA 05,06,56,49,44,58,20,20,01,FE,00,52,01,CD,94,53,56,49,44,58,-1479
110 DATA 20,31,2E,33,20,2D,20,56,69,64,65,6F,20,53,63,72,65,65,6E,20,-1462
120 DATA 45,6E,68,61,6E,63,65,72,20,66,6F,72,20,54,52,53,2D,38,30,20,-1625
130 DATA 4D,6F,64,65,6C,20,49,20,61,6E,64,20,49,49,49,0D,43,6F,70,79,-1616
140 DATA 72,69,67,68,74,20,28,63,29,20,31,39,38,39,20,62,79,20,44,61,-1453
150 DATA 76,69,64,20,47,6F,62,65,6E,2E,20,41,6C,6C,20,72,69,67,68,74,-1779
160 DATA 73,20,72,65,73,65,72,76,65,64,2E,0D,0D,00,7E,E6,5F,FE,58,20,-1908
170 DATA 05,3E,18,32,5F,54,2A,1E,40,22,B2,53,23,23,23,23,11,A5,53,06,-1162
180 DATA 06,1A,BE,20,27,13,23,10,F8,CD,94,53,50,72,6F,67,72,61,6D,20,-1807
190 DATA 61,6C,72,65,61,64,79,20,69,6E,73,74,61,6C,6C,65,64,2E,0D,00,-1789
200 DATA 21,FF,FF,C9,2A,49,40,3A,0F,00,FE,06,F5,28,2C,3A,00,52,B7,28,-1948
210 DATA 0C,21,14,42,22,3A,53,22,5B,54,22,96,54,AF,32,3B,54,32,C6,53,-1482
220 DATA 3E,8E,32,2D,54,3E,04,32,8B,54,21,10,42,22,88,54,2A,11,44,22,-1252
230 DATA A3,53,E5,11,01,FE,FC,52,C7,54,A7,ED,52,44,4D,21,C8,54,5E,23,-2441
240 DATA 56,7A,B3,28,10,23,22,04,53,EB,5E,23,56,EB,09,EB,72,2B,73,18,-1824
250 DATA E6,D1,01,27,01,21,C7,54,F3,ED,B8,13,EB,22,1E,40,2B,F1,20,05,-2163
260 DATA 22,49,40,18,03,22,11,44,AF,32,9F,40,FB,CD,94,53,70,72,6F,67,-1892
270 DATA 72,61,6D,20,73,75,63,63,65,73,73,66,75,6C,6C,79,20,69,6E,73,-2031
280 DATA 74,61,6C,6C,65,64,2E,0D,00,3A,5F,54,FE,18,20,28,CD,94,53,43,-1779
290 DATA 4C,53,20,74,6F,20,63,6C,65,61,72,20,70,72,6F,74,65,63,74,65,-1871
300 DATA 64,20,61,72,65,61,20,65,6E,61,62,6C,65,64,0D,00,21,00,00,C9,-1535
310 DATA E3,7E,23,B7,28,05,CD,33,00,18,F6,E3,C9,18,11,00,00,05,24,56,-1738
320 DATA 49,44,58,00,00,DD,CB,FF,BE,C3,00,00,DD,CB,FF,FE,2A,20,40,DD,-2585
330 DATA 7E,05,38,74,B7,28,01,77,79,18,41,06,00,05,28,57,B7,20,07,3C,-1276
340 DATA 32,C8,53,3D,18,59,FE,11,28,07,FE,10,20,2A,3E,80,06,AF,32,22,-1624
350 DATA 54,B7,28,1D,3E,08,D3,84,18,17,21,71,78,44,3E,01,D3,90,D3,FF,-2014
360 DATA 01,E2,F8,53,10,FE,44,3D,D3,90,D3,FF,10,FE,2D,20,EC,79,18,27,-2545
370 DATA FE,C0,30,2E,FE,07,28,DE,FE,0D,28,54,FE,0A,28,50,FE,1C,28,35,-2213
380 DATA FE,20,3F,30,8C,06,00,AF,32,C8,53,79,B0,CD,85,54,CD,80,04,DD,-2328
390 DATA CB,FF,BE,C9,B7,20,F8,7E,18,F5,18,06,DD,7E,07,B7,20,DF,79,D6,-2864
400 DATA C0,28,E5,47,3E,20,CD,85,54,10,F9,18,DB,CD,B1,53,AF,D3,84,21,-2572
410 DATA 00,3C,3A,9F,40,E6,0F,28,CB,11,40,00,19,3D,18,F7,7D,E6,C0,6F,-1925
420 DATA 11,40,00,19,CB,74,28,05,CD,92,54,18,B3,E5,36,20,23,7D,E6,3F,-1876
430 DATA 20,F8,E1,18,A7,77,23,3A,3D,40,E6,08,28,01,23,CB,74,C8,21,C0,-2091
440 DATA 3F,3A,9F,40,E6,0F,FE,0F,28,20,3C,21,00,3C,11,00,04,C5,01,40,-1366
450 DATA 00,09,EB,A7,ED,42,EB,3D,20,F7,D5,E5,A7,ED,42,EB,E1,C1,ED,B0,-3267
460 DATA C1,EB,E5,36,20,23,CB,74,28,F9,E1,C9,2A,54,4B,54,75,54,52,54,-2464
470 DATA D1,53,25,54,E3,53,00,00,02,02,01,52,-810,END
```



BUILDING PROTECT/CMD - PROGRAM LISTING NUMBER TWO by David Goben

```
10 CLS:PRINT"BUILDING 'PROTECT/CMD'":RESTORE
20 H$="0123456789ABCDEF"
30 OPEN"O",1,"PROTECT/CMD":L=90
40 CS=0:L=L+10
50 READ A$:IF A$="END"THEN CLOSE:END
60 IF LEFT$(A$,1)="-"THEN 80
70 A=INSTR(H$,LEFT$(A$,1))*16+INSTR(H$,RIGHT$(A$,1))-17:CS=CS+A:GOTO 50
80 IF VAL(MID$(A$,2))=CS THEN 40 ELSE PRINT"CHECKSUM ERROR IN LINE"L:END
90 ''' DATA AREA '''
100 DATA 05,06,50,52,4F,54,45,43,01,35,00,52,11,00,00,7E,23,FE,0D,28,-1093
110 DATA 14,FE,30,38,10,FE,3A,30,0C,EB,29,44,4D,29,29,09,85,6F,EB,18,-1781
120 DATA E5,7B,E6,0F,32,9F,40,67,3A,0F,00,FE,06,7C,28,03,32,14,42,21,-1642
130 DATA 00,00,C9,02,02,00,52,-287,END
```

RETURN ADDRESS BASIC PROGRAM FOR DMP 130A PRINTER - PROGRAM LISTING NUMBER THREE
by Henry A. Blumenthal

```
10 LPRINT CHR$(18)
20 FOR R=1 TO 5
30 READ N:IF N=999 THEN 80
40 IF N>=0 THEN LPRINT CHR$(128+N);:GOTO 30
50 READ M
60 LPRINT CHR$(28);CHR$(-N);CHR$(128+M);
70 GOTO 30
80 LPRINT:NEXT R
90 LPRINT CHR$(30)
100 LPRINT CHR$(27) CHR$(66) CHR$(1) CHR$(27) CHR$(29);
110 LPRINT "From the printer of ..."
120 LPRINT CHR$(27) CHR$(66) CHR$(0);
130 LPRINT CHR$(27) CHR$(29) CHR$(27) CHR$(14) " A. COMPUTER USER"
140 LPRINT CHR$(27) CHR$(15) "  123 Main Street"
150 LPRINT "  Anywhere, America 12345-6789"
160 LPRINT CHR$(27) CHR$(19)
170 REM SYSTEM"tof"
180 DATA -8,0,64,32,12,4,66,97,-4,113,97,110,-4,104
190 DATA -5,80,-7,32,-6,64,-5,32,96,999
200 DATA -3,0,96,16,72,116,59,8,96,112,-24,127,-6,126
210 DATA 64,56,70,49,8,0,127,999
220 DATA 120,6,65,68,71,75,8,10,-3,11,-2,19,-4,23
230 DATA -2,39,-4,47,-2,79,-4,95,-2,31,-5,63
240 DATA 31,7,115,13,66,125,62,29,96,24,6,1,999
250 DATA 3,12,-4,16,-7,33,-7,66,-8,4,-6,9,-3,18
260 DATA 17,16,3,64,48,12,3,999
270 DATA -20,0,-8,1,-7,2,-4,4
280 DATA 2,1,999
```

From the printer of ...
A. COMPUTER USER
123 Main Street
Anywhere, America 12345-6789

ASCII FILE WORD SEARCH - PROGRAM LISTING NUMBER FOUR For the Model 4
Author unknown.

This short program can easily be typed in basic and it is a very interesting and useful little program.

Once you have typed the program into BASIC and typed RUN, it will ask you for the file you wish to search. Type the name of the file, it must be an ASCII file.

Then it will ask you for the word you want to search for. Enter the word and press enter.

The program will then send the File Name to the printer that you are searching, and the word that you are looking for as a header line in the print out.

It then proceeds to print out the text of the file beginning with the first line that has the word that you are searching for in it, and ends with the last line with the searched for word in it.

Remember to have your printer on and ready to receive the print message, as this program does not send the text to your screen. It runs very fast so there would be little need to send it to the screen anyway.

This program is a great little addition for those of you who have purchased our Bible series, as those files are all in ASCII. This program will be in our disk series number eight, but if you can't wait just drop us a line with enough money to cover the postage and the disk cost and we will mail you a copy of it. In the meantime it is a great little file for searching any ASCII text, or even a Basic program that has been converted to an ASCII file. For example if you were searching for the beginning and end of a particular string entry.

Many a little GEM like this in the File Cabinet Collection Library. - CN8Ø

```
1Ø1Ø PROG$="WORDSCAN/BAS":VERS$="89/12/14"
1Ø2Ø '
1Ø3Ø ' Scans lines of an ASCII file for a given character string
1Ø4Ø '
1Ø5Ø DEFINT A-Z:CLS:PRINT"       W O R D S C A N / B A S":PRINT:PRINT
1Ø6Ø PRINT "ENTER FILE NAME (MUST BE AN ASCII FILE) ";:INPUT "",N$
1Ø7Ø OPEN "I", #1, N$
1Ø8Ø PRINT:PRINT "ENTER WORD TO SEARCH FOR";
1Ø9Ø LINE INPUT"",A$:IF A$="" THEN 1Ø8Ø
11ØØ LA=LEN(A$)
111Ø PRINT:PRINT:PRINT:PRINT "     L O O K I N G  . . . ."
112Ø LPRINT CHR$(27);"E";CHR$(27);"G STATEMENT SCAN OF "N$" FOR '"A$;
113Ø LPRINT "'";CHR$(27);"F";CHR$(27);"H":LPRINT
114Ø IF EOF(1) THEN 118Ø ' End the program
115Ø LINE INPUT #1,F$:IF INSTR(F$,A$)>Ø THEN 116Ø ELSE 114Ø
116Ø LPRINT F$ ' Found the string, so print it
117Ø GOTO 114Ø ' Loop back to try next line, if any
118Ø LPRINT:LPRINT "  E N D  O F  F I L E"
119Ø PRINT:PRINT:PRINT " J O B  F I N I S H E D":END
```

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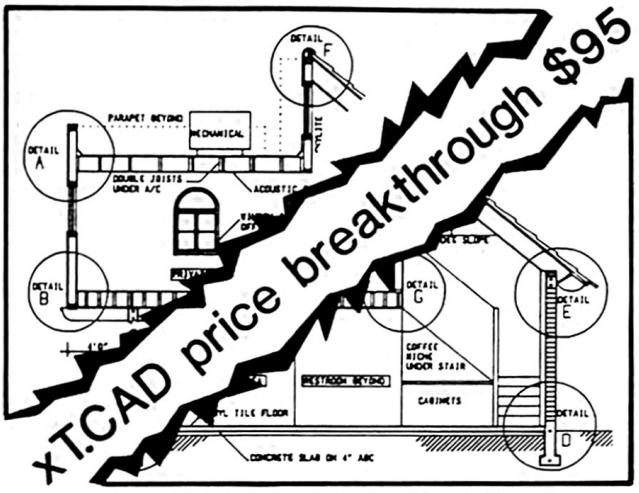

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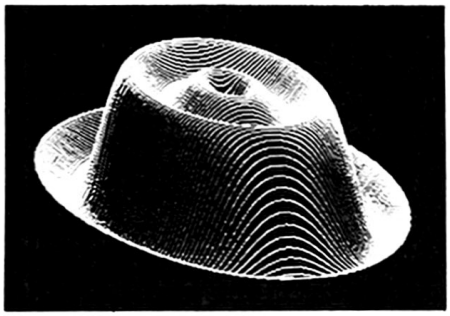

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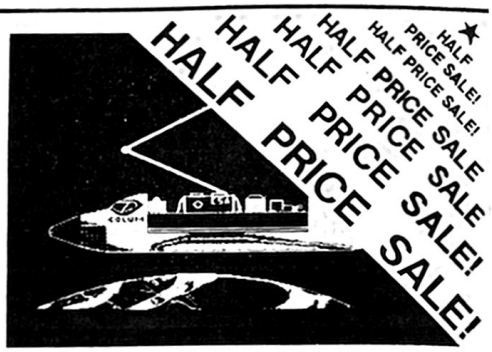

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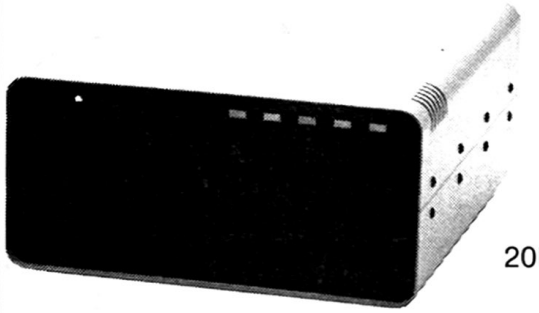

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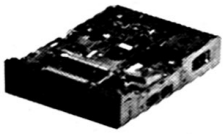

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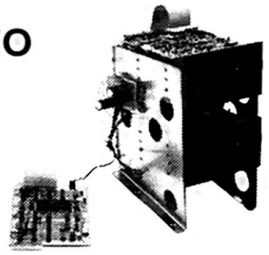

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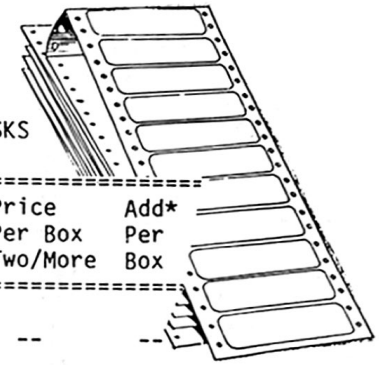

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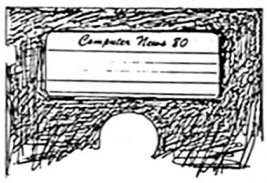

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MODEL III, 2 DISK DRIVES, Hi-res Board, 48K, RS-232 Port, Very good Condition. Call 609-451-2710 after 6PM EDT. Christen M. Jespersen 54 Woodcrest Ave., Bridgeton, NJ 08302. Asking $275.

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WANTED: Model 100 Interface. Dropped from Tandy catalogs two years ago. Write to Joe Van Zandt, 105 Evergreen Lane, Twin Lakes, WI 53181.

MODEL I/III/IV
Software/Hardware/Misc. MAIL AUCTION. Send SASE to: C. Weaver, 1718 Morrison, Canton, MI 48187. Schools, non-Profits welcome (use your letterhead). Some non-computer items included too.

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4 SALE R/S Mod 1, E/I w/32K, 2 drives, RS232 - $300 or B/O. R/S Model 1 desk $100 or B/O. R/S Modem $50 or B/O. TRS 80 Model 12 $500 or B/O. 8" disks B/O. R/S Software B/O. Pickels & Trout w/Manuals B/O. Line Printer III w/Stand $200 or B/O. Seymour Rush, 94 Andrew Ave, Oakland, NJ 07436, (201)337-3987

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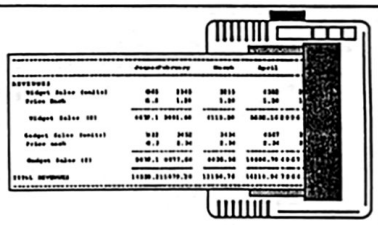

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