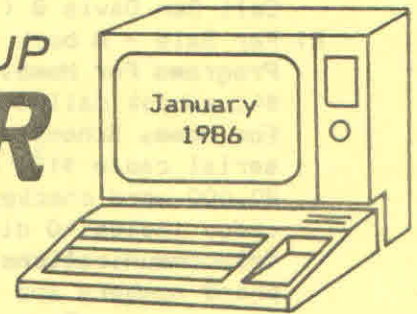


CEDAR VALLEY 99'ER USER GROUP

NEWSLETTER



NEWSLETTER TOPICS

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****NEXT MEETING IS NOT ON A MONDAY****

The February meeting will be Thursday, Feb. 6, 7:00 P.M. at the JA building, 330 Collins Road N. E. At this meeting, a couple new adventure games will be presented along with other new software like Gravity Master and Championship Tennis. The Championship Tennis comes with 3 TI games that were never released, one of which was an original Munch Man. Also, with any luck, Jim Trainor will again provide us with a 15 minute class on assembly programming. We think you are an excellent instructor, Jim!

****FUTURE MEETING DATES****

Please mark the following dates on your calendar for future meeting dates: Mar 6 (Thursday), Apr 14, May 12, and Jun 9.

****MINUTES FROM JANUARY MEETING****

The January 13, 1986 meeting was called to order at 7:08 PM by Vice President Bruce Winter. Minutes of last month's meeting were read and approved. A Treasurer's report was read and approved. 33 people attended. The memory expansion is very popular, if you want one, call Gary Bishop at 377-9574. The bare board costs \$8, plus your memory chips. You could obtain them yourself, or the club is looking into a group purchase. Dave Dalton introduced Jim Trainor to give us some idea of what to do with our new memory expansion. He showed us how to use extended basic to do machine language programming in the expansion memory. He covered topics such as hex to decimal conversion, the four commands needed, 2's compliment, the memory locations of pointers, and the DEF table. Then Johnathan Green showed what BIT MAC could do. It has joystick input, one pixel resolution, 8 bit color resolution, text can overlay graphics, and color selection and erase operations. Then, Dave Dalton demonstrated the Graphx program. This also has joystick input, move and copy commands, and zoom. Both software packages were very impressive. The door prize was won by ticket #188705, Larry Peska from Grinnell (that's 80 miles away!). He decided to take a rain check until the new batch of door prizes arrive. Second prize was won by #188691, John Johnson. He receives 4 programs from our library. The meeting adjourned at 9:01 PM.

Gary Bishop, Secretary.

****FOR SALE/WANTED****

- 1) For Sale - UltraComp stand alone box with RS-232C and parallel printer port, an Anderson-Jacobson 300 baud acoustic modem, and a connecting cable for \$125. Call Dan Davis @ (319) 365-6653.
- 2) For Sale - A book called **36 TI 99/4A Programs For Home, School, and Office** \$4; a book called **101 TI 99/4A Programs For Home, School, and Office** \$6; Y serial cable \$10; Homework Helper with 20,000 word checker \$10; a lockable disk caddy (holds 40 disks) \$15; a book called **Telecommunications** which talks about phone numbers and mail services, etc. \$4
Dave Dalton @ (319) 377-1715
- 3) TI 99/4A console, TE II, TI Writer, Forth manual with disk, Multiplication cartridge by Milliken, Speak math disk. Call Dan Rogers @ 363-3103 after 5 P.M.
- 4) For Sale: Original TI cassette recorder, mint condition, in box with original papers, cables, cassette cable, and \$65 price tag from Target. Asking \$35. Gary Bishop, 377-9574

****LIBRARY ADDITIONS****

I have two additions to make to the hardware library list published in the last newsletter: **Video Display Processors Programmer's Guide**, by TI. This book has everything you will ever want to know about programming the screen on the TI. 120 pages.

TMS9902A Asynchronous Communications Controller data book, by TI. 35 pages of pretty technical stuff.

To borrow either of these, or anything listed last month, contact Gary Bishop at 377-9574, or at the next meeting.

****CHEAP & SMALL 32K MEMORY BOARD****

Although this board has been developed for the TI, it has been tested on the AIM-65 also, and it works great! It could be used for almost any computer, with few modifications. You must have something other than console BASIC to make use of this memory (such as Extended BASIC, FORTH, etc.). Our user group presently has only enough of the boards about to be described to satisfy our own members' needs. We are asking for other user groups or individuals to express interest in an additional production run. If this looks like

something you could use, please let us know by the end of February, 1986.

What it is: a 1-3/4 by 4-7/8 inch printed circuit board that is conveniently laid out to allow 32K (or more, be patient) of Hitachi HM6264 static 8K by 8 RAM, and onboard address block decoding. The PC is presently constructed to provide the correct connection to the TI computer. The board can be modified so that the RAM responds to any even 8K address block in a 64K system. There is no magic with this PC board; it just eliminates the tedium and possibility of error or damage if you had to hand wire all 150 or so SMALL connections involved. Only +5 volts is required to power the RAM chips. The PC board was designed to be installed in the speech synthesizer or it can easily be mounted inside the console, and best yet: There is no cutting of traces on the TI, only tacking 5 jumpers to a few IC leads. This means the process can readily be reversed to put the TI back into the "stock" configuration.

Cost: Although we don't have an exact price for any future runs of this PC board, we expect it to be in the very low teens. Additional parts required: 4 RAM chips @ \$4 ea (you can do better, but you might have to hunt around), decoder IC, bypass capacitors, wire, misc, another \$4. Total approximate cost for 32K would therefore be about \$35. Please note that we are only proposing to supply the bare boards, not the complete assembly. PC boards will be provided with schematic and complete TI connection information.

Details of Installation: Most of the connections for this expansion memory are picked off the back of the cartridge extension on top the main board inside the console. 5 additional wires must be soldered directly to the pins of U504 and U508. We will provide a parts layout of the main computer board to help locate these connection points.

The memory expansion board fits neatly on the top of the shield of the main computer board. We also have a drawing to locate where the expansion memory will fit. I used a glob of silicone seal or RTV at each end of the memory board to hold it, with a piece of cardboard underneath as an insulator. This should hold things down for all but the most severe environments.

Other possibilities: You could install 64K (or more) on the PC board with very little trouble by ganging chips, and running the chip select lines separately to the decoder IC. However, a choice must be made as to where the RAM above 32K will respond in the address space. It could be possible to generate a bank switching or CRU decoding scheme to allow use of additional RAM. Also, the Hatachi chips have extremely low standby current, thus making battery backup attractive.

A final thought: This could provide the nucleus of a print buffer, disk cache buffer, or any number of things you ingenious TI people can think of. To express interest in this board, contact Jim Green at 288 Windsor Dr. NE, Cedar Rapids, IA 52403, or CompuServe (7227,3521). By Gary D. Bishop

****INTERNAL SPEECH SYNTHESIZER****

If you followed the above description, you may realize that once the console has been opened up, there is very little additional work required to install the Speech Synthesizer board in the console also. This can be done separately, if you have external expanded memory and just want to get rid of the boxcar holding speech. Members contact Gary Bishop at 377-9574 for arrangements. Others outside our group contact Jim Green above for info.

****DAISY CHAIN SOLUTION****

One of the recurring complaints about the 99/4A computer is the need for cables or expansion boxes hanging off the right side of the computer. Even my small CorComp MES 9900 box is a bother. We may have a solution; I have found a source for 44-pin card edge connectors that may be used to make a ribbon cable "extension cord". This smaller cable would allow you to move a CorComp box or the PEB Black Belt to the rear of your computer table, giving freedom of movement to the console without the worry of accidentally disconnecting the peripheral.

M & S Computer Systems, 15918 Cavendish Dr., Houston 77059 has the necessary connectors for \$16.75 or less per set. Our Group will be placing an order right after the Feb. 6 meeting. If you want one of these cables made for you, call Jim Green by Feb. 7. (M & S Computers also carries a full line of products for the TI 99/4A at discount

prices. Their catalog will be available at the Feb. 6 meeting.)

****TIGERCUB SOFTWARE REBATE****

As promised, Jim Peterson of Tigercub Software has sent our Group a 10% rebate check on orders placed by our Group members. Thanks go to Bruce Winter and Jim Harrington for mentioning our Group in their order.

Tigercub has a lot of unique software for sale, and he (Peterson) deserves some support. A copy of his catalog is available at each monthly meeting, or call me any time. Jim Green

****REQUEST FOR HARDWARE****

Do you have a console that doesn't function properly? Our club may be able to fix it for you. There is no charge for labor, only the cost for any parts that are needed. Do you have a console that is not economical to fix because it requires an expensive part? If so, please consider donating it to the club so it can be cannibalized for it's good parts. Your misfortune could be someone's saving grace. Remember, if we all share and work together, we are all better off. If you would like to donate your machine, please contact Gary Bishop.

****NEW ADDRESS****

Please note that the Central Iowa Users Group now has a new address as follows: Box 3043, Des Moines, IA. 50316

****NEW OFFICERS****

Are you interested in running for one of the offices of the Group? If so, please contact Bruce Winter.

****SURGE PROTECTION****

Reprinted from:
Edmonton 99'er ONLINE from:
BAYOU BYTE Newsletter, April, 1985

Every computer user should have a surge suppressor installed between his computer equipment and the power source (wall outlet). Retail prices for effective surge control are \$65.00 and up. Also, since the standard outlet does not provide nearly enough receptacles for most computer setups, you will also need a multiple outlet box.

If you are handy with a soldering iron, you can modify one of these gang boxes to provide surge protection and save a few bucks. The two wiring diagrams show how to add the protection devices to 4 & 6 gang boxes. Parts are available from Radio Shack.

Parts List

Qty	Description	Part #
3	Metal Oxide Varistor	276-570
2	0.047 Microfarad Capacitor	272-1052
2	Choke, 100 MicroHenri	273-102
1	4 or 6 outlet gang box. Available at many electronics stores or make your own with standard receptacles, boxes, and cable mounted on a board.	

You will find the drawings elsewhere in this newsletter. Ed.

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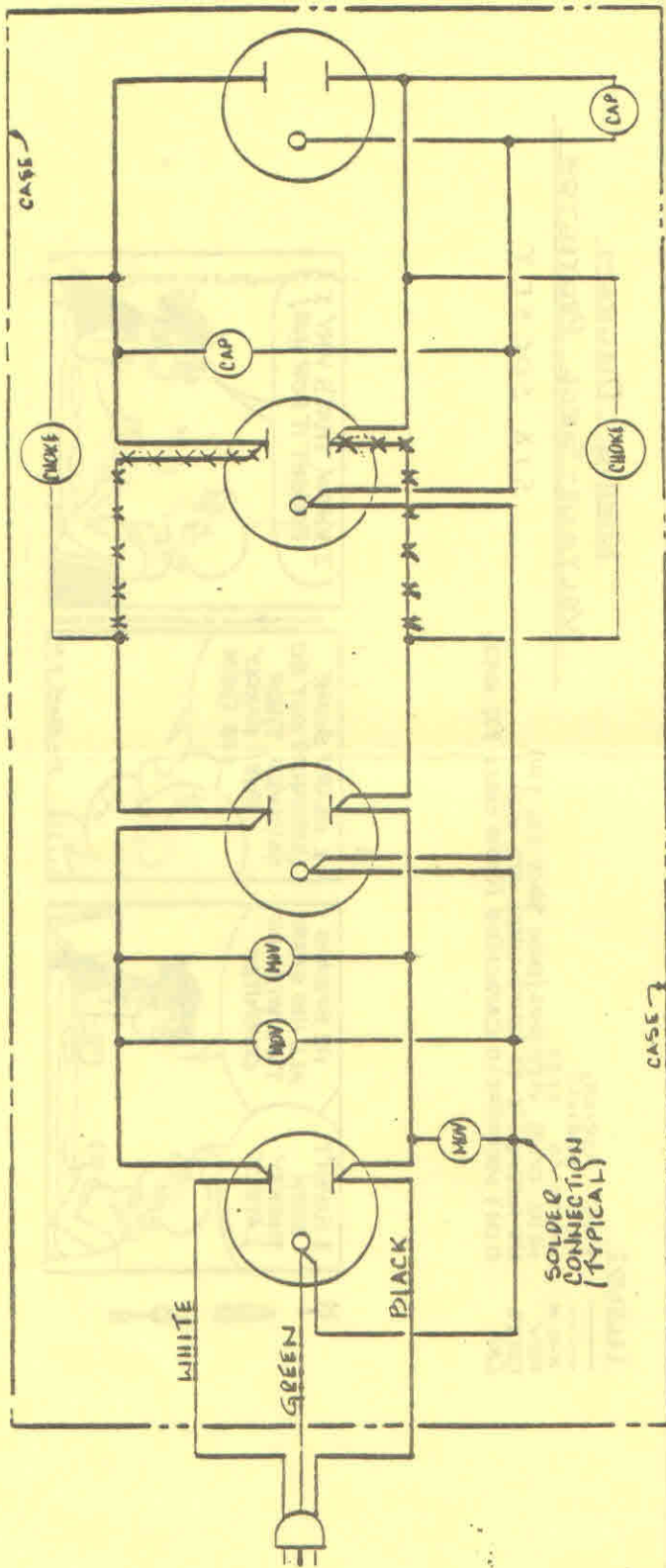
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REM

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WIRING DIAGRAM
VOLTAGE SURGE PROTECTOR

FOUR SOCKET

- LEGEND:
 --- EXIST. WIRING
 --- NEW WIRING
 --- MOV & WIRE
 --- METAL-OXIDE VARISTORS (RADIO SHACK 276-570)
 --- 100 MICROFARAD CAP (RADIO SHACK 273-102)
 --- 0.047 MICROFARAD CAPACITOR (RADIO SHACK 272-1052)
 --- CHOK
 --- CAP

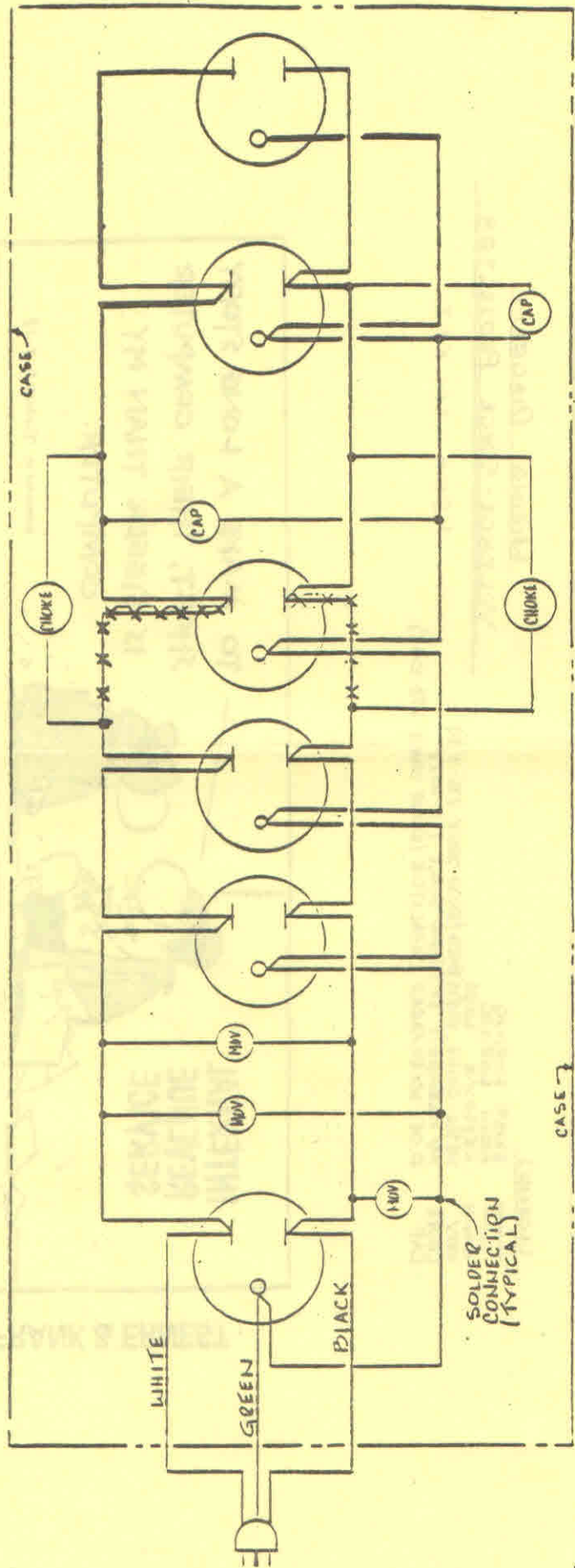
SOLDER CONNECTION (TYPICAL)

TO MAKE A LONG STORY
SHORT, THEIR COMPUTER
IS BIGGER THAN MY
COMPUTER.

INTERNAL
REVENUE
SERVICE

FRANK & ERNEST

ILLUSTRATION BY THAVES 7-19



WIRING DIAGRAM
VOLTAGE SURGE PROTECTOR
 SIX SOCKET

- LEGEND:
 --- EXIST. WIRING
 --- NEW WIRING
 ---X--- REMOVED WIRING
 MOV METAL-OXIDE VARISTORS (RADIO SHACK 216-510)
 CAP 100 MICROFARAD CAPACITOR (RADIO SHACK 213-102)
 CHOKE 0.01 MICROFARAD CAPACITOR (RADIO SHACK 272-1052)

SOLDER CONNECTION (TYPICAL)



H AND L S

TIPS FROM THE TIGERCUB

829

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TIGERCUB SOFTWARE
156 Collingwood Ave.
Columbus, OH 43213

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Over 130 original programs in Basic and Extended Basic, available on cassette or disk, only \$3.00 each plus \$1.50 per order for PPM. Entertainment, education, programmer's utilities. Descriptive catalog \$1.00, deductible from your first order.

Tips from The Tigercub, a full disk containing the complete contents of this newsletter Nos. 1 through 14, 50 original programs and files, just \$15 postpaid.

Tips from the Tigercub Vol. 2, another diskfull, complete contents of Nos. 15 through 24, over 60 files and programs, also just \$15 postpaid. Or, both for \$27 postpaid.

Nuts & Bolts (No. 1), a full disk of 100 Extended Basic utility subprograms in merge format, ready to merge into your own programs. Plus the Tigercub Menuloader, a tutorial on using subprograms, and 5 pages of documentation with an example of the use of each subprogram. All for just \$19.95 postpaid.

Nuts & Bolts No. 2, another full disk of 100 utility subprograms in merge format, all new and fully compatible with the last, and with 10 pages of documentation and examples. Also \$19.95 postpaid, or both Nuts Bolts disks for \$37 postpaid.

Tigercub Full Disk Collections, just \$12 postpaid! Each of these contains either 5 or 6 of my regular \$3 catalog programs, and the remaining disk space has been filled with some of the best public domain programs of the same category. I am NOT selling public domain programs - my own programs on these disks

are greatly discounted from their usual price, and the public domain is a FREE bonus!

TIGERCUB'S BEST PROGRAMMING TUTOR
PROGRAMMER'S UTILITIES
BRAIN GAMES
BRAIN TEASERS
BRAIN BUSTERS!
MANEUVERING GAMES
ACTION GAMES
REFLEX AND CONCENTRATION
TWO-PLAYER GAMES
KID'S GAMES
MORE GAMES
WORD GAMES
ELEMENTARY MATH
MIDDLE/HIGH SCHOOL MATH
VOCABULARY AND READING
MUSICAL EDUCATION
KALEIDOSCOPIES AND DISPLAYS

For descriptions of these send a dollar for my catalog!

The offer made last month is still good until 1 January - a 10% rebate directly to the user group if one of their members mentions the user group when ordering from me. So far, I've had only 10 responses - and I suspect that 8 or 9 of those didn't even know about the offer!

I goofed again. In the I/O ERROR routine in Tips #28, the ON ERROR STOP will do no good in the place where I put it. It should be placed after the file is opened in line 100 so that it will become the current error trap if the file is opened correctly.

And the CALL KEY example in Tips #28 will look better if R=14. A couple of very knowledgeable programmers have written to tell me that I was wrong, and the manual is right, about CALL KEY status -1. They say that -1 simply means that the same key is being pressed as was pressed during the last keyscan, and that it could have been released and repressed in the interim. This may be, but try this routine and see if you can release and repress a key without getting a status code 0 (no key pressed) and status code 1 (different key pressed) before another status code -1.

```
100 CALL KEY(0,K,S):: PRINT K,S :: GOTO 100
```

George Steffen has responded to the challenge in the last

Tips, by publishing in the LA 99ers Topics a remarkably compact routine to translate the internal format string representation of numeric data back into numbers. The following lines will update the Menu Loader accordingly.

```
100 !by A. Kludge/M. Gordon/
T. Boisseau/J. Peterson/E. S
teffen/etc.Version #8, 11/85
140 @,@0,A,A0,B,C,D0,E,F,FLA
G,I,J,K,KD,KK,M,M0,N,N0,P,P
0,PG0(I),PP,PP0,Q0,S,ST,T0(I),
TT,VT,V(I),W0,X,I0,Y,K2,S2
810 F=1 :: E=ASC(SEG$(M0,1,1
)): M=ASC(SEG$(M0,2,1)): I
F E=0 AND M=0 THEN GOTO 817
ELSE IF E>128 AND M>128 THEN
F=-1 :: E=255-E :: M=256-M
815 FOR I=1 TO 6 :: M=M+(ASC
(SEG$(M0,I+2,1)))/100*I :: N
EXT I :: M=M*F+100^(E-64)
817 PRINT @PP:M
870 FOR P=1 TO NN-1 :: PRINT
@2:PG$(P);TAB(15);V(P,3);TA
B(20);T$(ABS(V(P,1)));TAB(25
);V(P,2);TAB(31);CHR$(89*ABS
(V(P,1)<0)): NEXT P :: CLOS
E #2
```

The change in the last line is my own, because it was pointed out to me that the catalog output to the printer did not indicate protected files.

That last line is a good example of the power of relational expressions to accomplish compact programming. The variable V(P,1) picks up its value from the variable A which is read from the disk directory in line 350. This is a number from 1 to 5, indicating the type of file, and if the file is write-protected the number is negative. A true expression has a relational value of -1. If the file is protected, V(P,1)<0 is true, and its value is -1, converted by ABS to +1 and multiplied by 89 to give ASCII 89, converted by CHR\$ to "Y". If not protected, V(P,1) is a positive number, V(P,1)<0 is false and has a relational value of 0; 89 times 0 is still 0, and CHR\$(0) prints nothing.

George also mentioned in a letter that my remarks on the UPDATE mode applied only to VARIABLE files; that RESTORE without a number, to return the record pointer to the beginning of a file, works only with VARIABLE files; that RESTORE with a number works only with

RELATIVE files; and that therefore the only way to RESTORE a SEQUENTIAL FIXED file is to close it and reopen it.

On trying this out, I find that you can write to a FIXED SEQUENTIAL file and still be able to read the following records - but you can't simply "read a record, change it in some way, and then write the altered record back out on the file", as the Reference Guide indicates, because you will change the record FOLLOWING the one you read! It is possible to UPDATE a FIXED SEQUENTIAL file without reading it all into an array and writing it back out, but you must read sequentially to the record you want, close the file, reopen the file, read back to the record just before the one you want to update, then write in the updated record.

I have received several other suggestions regarding the Menu Loader, too many to describe here. You can all modify it to your own tastes and needs. Remember to turn off the pre-scan and ON ERROR while you're working on it, then add any new variable names or CALLs to the pre-scan. And remember, that last line MUST be the LAST line of the program! You can resequence it higher, and change the GOTO accordingly, but don't put anything after it!

I did change my version to slash the zero, since this will carry over into a program that is loaded. If you do this, be sure to add a CALL CHAR to the list in line 150!

```
190 CALL CLEAR :: FOR S=1 TO
14 :: CALL COLOR(S,7,16)::
NEXT S :: CALL COLOR(0,2,16)
:: CALL CHAR(48,"003A444C546
44488")
```

When you just want to load a program, waiting for it to be read from the disk directory can be a drag. And, you may have trouble recognizing the filename. So, here is the Tigercub Quickloader which I have placed on all my Collection Disks.

First you will need Catwriter, another program that writes a program. This

one will read the disk directory, ignore everything other than programs, ask you for a complete program name for each filename, and write all that into a MERGE format program called CATMERGE.

```
100 !CATWRITER by Jim Peters
on
110 OPEN #1:"DSK1.",INPUT ,R
ELATIVE,INTERNAL :: INPUT #1
:N0,A,J,K :: OPEN #2:"DSK1.C
ATMERGE",VARIABLE 163 :: LN=
1000 :: FN=1100
120 X=X+1 :: INPUT #1:P0,A,J
,B :: IF LEN(P0)=0 THEN 160
:: IF ABS(A)=5 OR ABS(A)=4 A
ND B=254 THEN 130 ELSE X=X-1
:: GOTO 120
130 DISPLAY AT(12,1)ERASE AL
L:P0;" PROGRAM NAME?" ::
ACCEPT AT(14,1)SIZE(25):F0
140 PRINT #2:CHR$(INT(FN/256
))&CHR$(FN-256*INT(FN/256))&
CHR$(147)&CHR$(200)&CHR$(LEN
(F0))&F0&CHR$(0) :: FN=FN+1
150 M0=M0&CHR$(200)&CHR$(LEN
(P0))&P0&CHR$(179) :: IF X<11
THEN 120
160 IF M0="" THEN 180
170 PRINT #2:CHR$(INT(LN/256
))&CHR$(LN-256*INT(LN/256))&
CHR$(147)&SE6$(M0,1,LEN(M0)-
1)&CHR$(0) :: LN=LN+1 :: M0=""
* :: X=X0 :: IF LEN(P0)<>0 TH
EN 120
180 PRINT #2:CHR$(INT(LN/256
))&CHR$(LN-256*INT(LN/256))&
CHR$(147)&CHR$(200)&CHR$(3)&
"END"&CHR$(0)
190 PRINT #2:CHR$(255)&CHR$(
255) :: CLOSE #1 :: CLOSE #2
```

Next, key in the Quickloader. Do not change the line numbers, do not RESequence, because CATMERGE will be merged into the middle of it and that last line must be the last. Then, enter MERGE DSK1.CATMERGE and then SAVE DSK1.LOAD .

```
100 CALL CLEAR :: DIM M$(48)
:: CALL CHAR(94,"3C4299A1A19
9423C") :: CALL SCREEN(2) :: F
OR SET=1 TO 14 :: CALL COLOR
(SET,15,1) :: NEXT SET :: DIS
PLAY AT(1,4):"TIGERCUB QUICK
LOADER"
110 X=X+1 :: READ M$(X) :: IF
M$(X)<>"END" THEN 110
115 CALL PEEK(0198,A) :: IF A
<>170 THEN CALL INIT
120 R=3 :: FOR J=1 TO X-1 ::
READ X0 :: DISPLAY AT(R,1):
STR$(J);TAB(4);X0 :: R=R+1 ::
IF R<23 THEN 150
130 DISPLAY AT(24,1):"CHOICE
? OR 0 TO CONTINUE 0" :: ACC
EPT AT(24,26)VALIDATE(DIGIT)
SIZE(-2):N
140 IF N<>0 THEN 155 :: R=3
```

```
150 NEXT J :: DISPLAY AT(24,
1):"CHOICE?" :: ACCEPT AT(24
,9)VALIDATE(DIGIT):N
160 IF SE6$(M0(N),LEN(M0(N)
),1)="" THEN DISPLAY AT(12,1
)ERASE ALL:"Return to BASIC"
:: "Type OLD DSK1."&M0(N) ::
STOP
170 CALL CHARSET :: CALL CLE
AR :: CALL SCREEN(0) :: CALL
PEEK(-31952,A,B) :: CALL PEEK
(A*256+B-65534,A,B) :: C=A*25
6+B-65534 :: A0="DSK1."&M0(N
) :: CALL LOAD(C,LEN(A0))
180 FOR J=1 TO LEN(A0) :: CAL
L LOAD(C+J,ASC(SE6$(A0,J,1)
)) :: NEXT J :: CALL LOAD(C+J,
0) :: GOTO 30000
30000 RUN "DSK1.1234567890"
```

If you don't want to give your Basic-only programs a filename ending in an asterisk, you can leave out that warning routine, or you can modify it to warn of E/A or MiniMemory programs. If Catwriter has picked up any unloadable program-format files, etc., just delete them from the DATA lines.

The first issue of the GENIAL TRAVELER has arrived, and it is SUPERB! This is a magazine-on-a-disk, a SS/SD floppy loaded with 700 sectors of some of the finest articles and programs you'll ever see! And the programs are ready to run, you don't have to key anything in. The subscription price, until the end of 1985 at least, is \$30 for 6 issues, which computes out to \$5 per disk - many of you are paying your own user group that much for a one-sided disk of public domain!

If the subscribers will only have the guts to refuse to let their friends copy this for free, this venture will surely survive and contribute greatly to the advancement of the TI. The address is - GENIAL COMPUTERWARE, 835 Green Valley Drive, Philadelphia PA 19128.

Gene Burchfield asked if I had a program to print banners vertically. I had never heard of such a thing, so I wrote one.

```
100 DISPLAY AT(12,1)ERASE AL
L:"TIGERCUB STREAMER PRINTER
" !by Jim Peterson
110 DATA 0000,0001,0010,0011
,0100,0101,0110,0111,1000,10
01,1010,1011,1100,1101,1110,
```

```
1111
120 RESTORE 110 :: DIM B$(16
) :: FOR J=1 TO 16 :: READ B0
(J) :: NEXT J :: P$(0)="" ::
P$(1)=CHR$(230)
130 INPUT "TEXT TO BE PRINTE
D? " :T0 :: PRINT :: INPUT "P
RINTER DESIGNATION? " :PD0 ::
OPEN #1:PD0
140 PRINT :: INPUT "SIZE? (1
-10) " :Z :: IF Z<1 OR Z>10 T
HEN 140
150 FOR J=1 TO LEN(T0) :: A=A
SC(SE6$(T0,J,1)) :: IF A=32 T
HEN GOTO 200
160 CALL CHARPAT(A,M0) :: FOR
M=1 TO 15 STEP 2 :: K0=SE6$(
M0,M,2) :: FOR L=1 TO 2 :: L
0=SE6$(K0,L,1) :: B=POS("0123
456789ABCDEF",L0,1)
170 M0=B0(B) :: FOR M=1 TO 4
:: N=VAL(SE6$(M0,M,1)) :: N0=
N0&RPT$(P$(M),Z) :: NEXT M
180 NEXT L :: FOR 0=1 TO Z/2
+.5 :: PRINT #1:TAB((01-Z*0)
/2+.5);M0 :: NEXT 0 :: M0=""
:: NEXT M :: FOR R=1 TO Z/2
+.5 :: PRINT #1:"" :: NEXT R
190 NEXT J :: STOP
200 FOR T=1 TO Z*4 :: PRINT
01:"" :: NEXT T :: GOTO 190
210 CALL KEY(0,K,S) :: IF S=0
THEN 210 ELSE RETURN
```

If your printer doesn't have the special characters of the Gemini, substitute 80 instead of 230 in line 120, to print X's, or whatever else you want. If you do have the special characters, try some others, such as 239, for this and other graphics printing programs. This routine will print a handy reference chart of them.

```
100 IMAGE 000 0 000 0 00
0 0 000 0 000 0 000 0
110 P0=RPT$(CHR$(251)&CHR$(2
53),21) :: X=0
120 OPEN #1:"PID" :: PRINT #
1:CHR$(27);"E"
130 PRINT #1:P0:" ASCII COD
ES FOR GEMINI SPECIAL CHARAC
TERS":P0
140 FOR J=160 TO 175 :: K=J-
X
150 PRINT #1,USING 100:K,CHR
$(J),K+16,CHR$(J+16),K+32,CH
R$(J+32),K+48,CHR$(J+48),K+6
4,CHR$(J+64),K+80,CHR$(J+80)
:: NEXT J
160 IF FLAG=1 THEN STOP ELSE
FLAG=1 :: PRINT #1:"":P0:"
*TI-WRITER CODES FOR GEMINI
SPECIAL CHARACTERS":P0 :: X
=128 :: GOTO 140
```

Another one that just looks pretty - 100 !KALEIDOSPRITES by Jim Peterson
110 CALL CLEAR :: FOR CH=100 TO 128 STEP 4 :: FOR L=1 TO

```
4 :: RANDOMIZE :: X0=SE6$(
0018243C425A667E8199A5B0C3D0
E7FF",INT(16*RND+1)*2-1,2)
120 B0=B0&X0 :: C0=X0&C0 ::
NEXT L :: CALL CHAR(CH,RPT$(
B0&C0,4)) :: B0,C0="" :: NEXT
CH :: Z=2 :: CALL SCREEN(5)
130 CALL MAGNIFY(Z) :: K=1 ::
FOR J=1 TO 7 :: S=96+4*J ::
R=16*J :: C=1000*RND+200
140 IF J>5 AND Z=4 THEN T=5
:: GOTO 160
150 T=INT(15*RND+2) :: IF T=5
THEN 150
160 CALL SPRITE(0K,S,T,R,C,0
K+1,S,T,177-R,C,0K+2,S,T,R,2
41-C,0K+3,S,T,177-R,241-C) ::
K=K+4 :: NEXT J
170 Z=INT(2*RND+1)*2 :: GOTO
130
```

100 !DISK MATCHER by Jim Peterson

```
110 DISPLAY AT(8,9)ERASE ALL
:"DISK MATCHER" :: " : : " To c
ompare a backup disk" :: "with
a master and list any" :: "file
s found on one but not"
120 DISPLAY AT(15,1):"on the
other." :: " : : " Press
any key"
130 CALL KEY(0,K,S) :: IF S=0
THEN 130
140 DISPLAY AT(12,1)ERASE AL
L:"INSERT MASTER - PRESS ENT
ER" :: CALL KEY(0,K,S) :: IF
S=0 THEN 140
150 OPEN #1:"DSK1.",INPUT ,R
ELATIVE,INTERNAL :: INPUT #1
:D10,A,J,K :: DIM F1$(127)
160 X=X+1 :: INPUT #1:F1$(X)
,A,J,B :: IF LEN(F1$(X))<>0
THEN 160 ELSE CLOSE #1
170 DISPLAY AT(12,1)ERASE AL
L:"INSERT BACKUP DISK" :: "PR
ESS ENTER" :: CALL KEY(0,K,S
) :: IF S=0 THEN 170
180 OPEN #1:"DSK1.",INPUT ,R
ELATIVE,INTERNAL :: INPUT #1
:D20,A,J,K :: DIM F2$(127)
190 Y=Y+1 :: INPUT #1:F2$(Y)
,A,J,B :: IF LEN(F2$(Y))<>0
THEN 190 ELSE CLOSE #1
200 DIM F(127) :: FOR J=1 TO
X :: FOR L=1 TO Y :: IF F2$(
L)=F1$(J) THEN F(L)=1 :: GOTO
220
210 NEXT L :: PRINT F1$(J);"
NOT ON BACKUP"
220 NEXT J
230 FOR M=1 TO Y :: IF F(M)=
0 THEN PRINT F2$(M);" NOT ON
MASTER"
240 NEXT M :: END
A very useful tip from Jim Swedlow, in the Orange County ROM newsletter - INPUT respects any trailing print separator on a preceding PRINT command. Try it - 100 PRINT TAB(20);: INPUT B $  
MEMORY FULL IN LINE 400  
Jim Peterson
```


DEMO PROGRAMS

Below are some good demo programs. All are from the OCT85 newsletter of the MID-SOUTH 99ers. The Ocean Pacific program was written by Danny Cox and requires Extended Basic. All of the rest will run in console basic.

BY DANNY COX USE X-BASIC ----- 100 CALL CLEAR :: CALL SCREE N(16):: CALL MAGNIFY(2) ----- 110 FOR I=0 TO 14 :: CALL CO LOR(1,13,1):: NEXT I ----- 120 CALL CHAR(96,"FF9999FFFF 9999FF",97,"FFA5FFA5A5FFA5FF ")	130 FOR I=11 TO 13 :: CALL V CHAR(12,1,96,13):: NEXT I ----- 140 FOR I=14 TO 19 :: CALL V CHAR(16,1,97,9):: NEXT I :: CALL VCHAR(16,10,97,9) ----- 150 FOR I=24 TO 30 :: CALL V CHAR(20,1,97,5):: NEXT I ----- 160 FOR I=25 TO 26 :: CALL V CHAR(10,1,96,15):: NEXT I	170 FOR I=3 TO 7 :: CALL VCH AR(12,1,96,13):: NEXT I ----- 180 CALL VCHAR(8,8,97,17):: CALL VCHAR(8,6,97,4):: CALL VCHAR(5,7,97,7) ----- 190 FOR I=16 TO 18 :: CALL V CHAR(8,1,96,8):: NEXT I :: F OR I=20 TO 22 :: CALL VCHAR(9,1,96,16):: NEXT I ----- 200 CALL SPRITE(020,79,14,5, 210,021,80,14,10,225) ----- 210 DISPLAY AT(5,9):"oCeAn p AcI4c" ----- 220 CALL SCREEN(2) ----- 230 CALL COLOR(9,INT(RND*14+ 3),1):: GOTO 230
---	--	--

```

100 REM -Voice of R2D2-
110 REM BASIC
120 CALL CLEAR
130 RANDOMIZE
140 FOR X=1 TO 150
150 A=INT(10*RND)
160 IF A<1 THEN 150
170 B=INT(5000*RND)
180 IF B<110 THEN 170
190 C=INT(20*RND)
200 CALL SOUND(A,B,C)
210 NEXT X
220 END
    
```

```

100 REM Just a Snowflake
110 REM BASIC
120 CALL CLEAR
130 CALL SCREEN(5)
140 FOR X=1 TO 12
150 CALL COLOR(X,16,1)
160 NEXT X
170 FOR X=10 TO 1 STEP -1
180 FOR Y=1 TO 12
190 C=42
200 A=12-(X*SIN(Y/6*3.1415926))
210 B=16-(X*COS(Y/6*3.1415926))
220 CALL HCHAR(A,B,C)
230 NEXT Y
240 NEXT X
250 Ts="Just a Snowflake"
260 PRINT TAB((28-LEN(Ts))/2);Ts
270 FOR X=1 TO 2000
280 NEXT X
290 GOTO 290
300 END
    
```

```

100 REM Just a Circle
110 REM BASIC
120 CALL CLEAR
130 FOR S=14 TO 9 STEP -1
140 CALL SCREEN(S)
150 CALL CHAR(128,"FFFFFFFFFFFFFF")
160 CALL COLOR(13,2,1)
170 FOR C=1 TO 12
180 A=12-(10*SIN(C/6*3.1415926))
190 B=16-(10*COS(C/6*3.1415926))
200 D=C
210 IF D<8 THEN 230
220 D=D-6
230 CALL COLOR(13,D+1,16)
240 CALL HCHAR(A,B,128)
250 FOR X=1 TO 75
260 NEXT X
270 NEXT C
280 CALL CLEAR
290 NEXT S
300 GOTO 130
    
```

```

100 REM Just Scrollin
110 RANDOMIZE
120 CALL CLEAR
130 CALL CHAR(128,"FFFFFFFFFFFFFF")
140 SC=16
150 CALL SCREEN(SC)
160 CL=INT(17*RND)
170 IF CL<3 THEN 160
180 IF CL>14 THEN 160
190 CALL COLOR(13,CL,SC)
200 FOR L=1 TO 8
210 PRINT TAB(L);CHR$(128);" ";CHR$(128);" ";CHR$(128);" ";CHR$(128);" "
220 PRINT TAB(L+8);CHR$(128);" ";CHR$(128);" ";CHR$(128);" ";CHR$(128);" "
230 NEXT L
240 GOTO 140
    
```

```

100 REM Snowing
110 REM BASIC
120 CALL CLEAR
130 CALL SCREEN(5)
140 CALL COLOR(2,16,5)
150 R=INT(25*RND)
160 IF R<1 THEN 150
170 C=INT(32*RND)
180 IF C<1 THEN 170
190 CALL HCHAR(R,C,42)
200 GOTO 150
    
```


Below are some good demo programs. All are from the DCTB Newsletter of the MID-SOUTH States. The Ocean Pacific program was written by Gary Co. and requires Extended Base C. All of the rest will run in console mode.

100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200	200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300	300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400	400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500
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