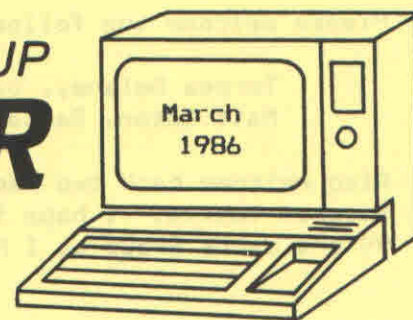


CEDAR VALLEY 99'ER USER GROUP

NEWSLETTER



NEWSLETTER TOPICS

1. Next Meeting Notes
2. Future Meeting Dates
3. Minutes From March Meeting
4. New Members
5. For Sale/Wanted
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7. Coleco Power Supply
8. TI99/4A Audio Circuit
9. Adding Function Keys To The TI99/4A By Gary Bishop
10. Tips From The Tigercub
11. Cedar Valley Hamvention

****NEXT MEETING****

The April meeting will be Monday, Apr. 14, 7:00 P.M. at the JA building, 330 Collins Road N. E. At this meeting, Mike Bonifazi will give us a demonstration of the Midi Music System. "Sounds" interesting to me.

****FUTURE MEETING DATES****

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

****MINUTES FROM MARCH MEETING****

The March meeting was called to order at 7:05 PM by President Jim Green. The minutes of the last meeting as printed in the newsletter were approved. A Treasurer's report was read and approved. Jim explained

the purpose of the club to new members. 30 people were present. Jim said that the LA UG says hello, that he was out there during their last meeting, and described his experience there. He also stated what support he found for our expanded memory board. Gary Bishop gave a report that most of the interest in the memory board was from AIM-65 users, and that we should turn the project over to their Users Group. We would keep a small number of boards to satisfy our own needs and those of the TI community. A newsletter editor is needed. If one isn't found, this will be the last newsletter you will read from the club. Jim Trainor is willing to teach an assembly language class; if interested, contact Jim Green. We haven't seen an issue of HCM since before Christmas. Conjecture as to whether they have folded or not. The usefulness of the Gram Kracker was explained. John Johnson's adventure game was donated to the club library as Shareware. Election of officers was held. While the ballots were counted, a program that plays Axel F was run, and it was fantastic! The elected officers are: President - Jim Green, Vice President - Bruce Winter, Treasurer - Ed Hayek, Secretary - Gary Bishop. The presentation was by Tony May, and he showed us his parallel printer interface and accompanying word processing package. His price is \$40 for both, see Jim Green to place an order. Jim and Jonathan Green displayed the Disk Master I program. It can display sectors and files on a disk, and make repairs if necessary. Door prize was won by Bruce Winter; he chose the Navarone Widget cartridge expander. Second prize of 4 programs from the club library was won by Dan Davis. Meeting adjourned at 8:48 PM. Submitted by Gary D. Bishop, Secretary.

****NEW MEMBERS****

One of the more satisfying things about working with this TI Users Group is the knowledge that there is a continuing infusion of new people and new ideas. We have picked up ten new members this year which is our fourth year in existence.

Please welcome the following people who have joined us for the first time this year:

Teresa Delaney, David Arnold, Kim Brostad, Dan Rogers, Al Ross, Fred Bindner, Jim Reiss, Matt Eaton, Santanu Dutta, and Orlin Buhr.

Also welcome back two members from previous years who have joined again: Bruce Graves and Stephen Yuskis. I hope that these people get as much fun and knowledge out of the Cedar Valley 99'ers Users Group as I have. Ed Hayek

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

Wanted: Mini Memory - Call John Johnson at 366-4541 or at 395-3712.

Wanted: Any non-working disk drive controller card or disk drive. Also want any non-working game cartridge; will pay up to 50 cents. Gary D. Bishop, 377-9574 after 5 PM.

Wanted: RS232 interface, either stand alone, or P-box card. Prefer a non working one. Also, requesting to borrow one to study, so that we may determine the possibility of making a RS232 club project. - Gary D. Bishop 319-377-9574 after 5 PM.

For Sale: Original TI cassette recorder, mint condition, in box with original papers, cables, cassette cable, and \$65 price tag from Target. Asking \$30. Gary Bishop, 377-9574

For Sale: TI99/4A console - \$50; TI joysticks - \$10; Spectravideo joystick with adapter - \$15; GE slim line cassette recorder - \$35; Extended Basic with manual - \$45; various working programs & games on tapes - \$15; Graphics generator program - \$10; **Programming Basic With The TI**, by H. D. Peckham - \$5; **Programmer's Reference Guide To The TI-99/4A**, by C. Regena - \$10; Parsec - \$5; TI Invaders - \$5; Munchman - \$5; Defender - \$5; Super Demon Attack - \$5; Video Chess - \$15; 13 blank 10 minute each side cassette tapes - \$10; Call Chuck Moats at 377-3205 after 5 P.M. (Note from editor - I think Chuck will negotiate on the prices. Give him a call.

****DISK MASTER I - A REVIEW****

Disk Master I is a disk manager program with enhancements that make it far more desirable than TI's Disk Manager cartridge. The program was demonstrated at the March meeting, and requires a disk operating system, 32K memory expansion, and one of the following modules:

Editor/Assembler, Mini Memory, Extended Basic, or TI-Writer. The program is available for \$19.95 (on disk) from Data Biotics, P.O. Box 1194, Palos Verdes Estates, CA 90274.

Disk Master I first of all allows all the normal functions of a disk manager program. Through menu selections, one can catalog, initialize, rename, test, and protect a disk. A special option allows initializing a whole box of new disks with one set of commands.

File manipulations include protecting and unprotecting, renaming, copying, moving, printing (if an output device is available), and deleting. The copier is a file-by-file copier, not a sector or track copier, so the copy process can be slow if you want to copy a whole disk. All the above operations are commanded by filling in the appropriate one-letter instruction in the Command column of the disk catalog. This allows one to mix and match several operations to the disk at the same time, and all operations will be accomplished with the Proceed command.

***** PASSWORD *****

Here is a program that I changed to add more usefulness and excitement to using your TI 99/4A.

This program is called "PASSWORD", and it appeared in the Home Computer Compendium in Feb. 1984. (page 23). Thus, if you want to add security to one of your programs, this is a program that will work.

```
10 P$="YOUR PASSWORD"  
20 CALL CLEAR  
30 INPUT "ENTER SECURITY CODE":PW$  
40 IF P$(<)PW$ THEN 3199  
50 CALL CLEAR  
60 REM ENTER YOUR PROGRAM HERE
```

```
3199 CALL CLEAR  
3200 PRINT TAB(7):"SECURITY VIOLATED"  
3201 PRINT  
3202 PRINT  
3203 PRINT TAB(6):"PROGRAM ABORTED"  
3204 FOR I=1 TO 10  
3205 CALL SOUND(200,466,1)  
3206 CALL SCREEN(7)  
3207 CALL SOUND(200,1760,1)  
3208 CALL SCREEN(11)  
3209 NEXT I
```

If you have extended basic and speech, try substituting CALL SAY in lines 3205 and 3207.

Rick Emery
Cedar Rapids, IA

***** PROGRAMMING HINTS *****

You say you were on the last line of keying in that new "SPACE ZAPPER" program, but instead of typing "SHIFT +" you hit "FCTN +" (QUIT)? And, you didn't have a line of the program saved because you were anxious to zap an alien that looked like your mother-in-law?

Well, here's a neat little trick if you own the Extended Basic cartridge. This won't work in Basic, but before you begin to key in your program, try this one line statement before you do anything else. In the immediate mode type the following:

```
CALL INIT :: CALL LOAD(-31806,16)
```

This one line will kill the "QUIT" ability on the 99/4A and you can then type "NUM" and key in your program without the dreaded worry of hitting that "FCTN +" key.

You can also use these two statements at the beginning of a program by giving it a line number:

```
10 CALL INIT :: CALL LOAD(-31806,16)
```

When you add this to any TI Extended Basic program, along with the "ON BREAK NEXT" statement, there is no way that you can stop the program other than to complete the game or return to the menu that says "END". When you save this type of program under the optional "PROTECTED" clause, you literally have a program that is as intact as a solid state command module.

Michael Bonifazi
Anamosa, IA

(Thanks for the inputs, Mike and Dick. This is what we need, information for the newsletter by the members that can be used by all!)

***** NEW PRODUCTS, MAILINGS, ETC. *****

Every month we receive several mailings announcing new software, new hardware, special sales, group newsletters, etc. These are available at our monthly meetings for everyone to read. Be sure to look on the tables at the back of the room.

This month's mailings include:

TENEX	Complete catalog of hardware, software
INFORMATION ASSOC.	Hardware - Good prices
RESTON PUBLISHING	New books at U.G. prices
TACHYON SYSTEMS	32K memory expansion stand alone
THE MOTHER BOARD	New BBS (fee required)
BITS & BYTES OF ELECTRONICS	Printers, disk drives
COMPRO	Disks at U.G. prices
CYDEX SOFTWARE	New assembly language game
SUNDISK SOFTWARE, INC.	Sketch Master for video graphics, hardware

Disk Master provides two features not found in the TI manager, nor in several other manager programs. The first is a Restore Lost File command. This allows you to bring back the file pointer for a file you had previously (maybe accidentally) deleted, as long as you have not yet written new data to the disk. This is valuable for someone who may change his mind a lot.

The second feature is a sector editor, which allows one to read, edit, and write data to any specific sector on the disk. This capability will allow a knowledgeable person to fix faulty data and then restore a "bad" disk or sector. This feature is not as well developed as that on "Advanced Diagnostics" from Millers Graphics; for example, not track editor is available.

Documentation with my version of the program was fairly complete, although in temporary 8 1/2 x 11 typed sheets, because the company is making improvements to allow the program to run with Myarc's disk controller. My disk and manual may be returned to Data Biotics in exchange for the fixed version.

I recommend Disk Master I to anyone now operating with a vanilla disk manager program. The extra features of Disk Master I may be found separately on other programs, but this is a good way to improve on the TI Disk Manager capabilities at a reasonable price. Jim Green

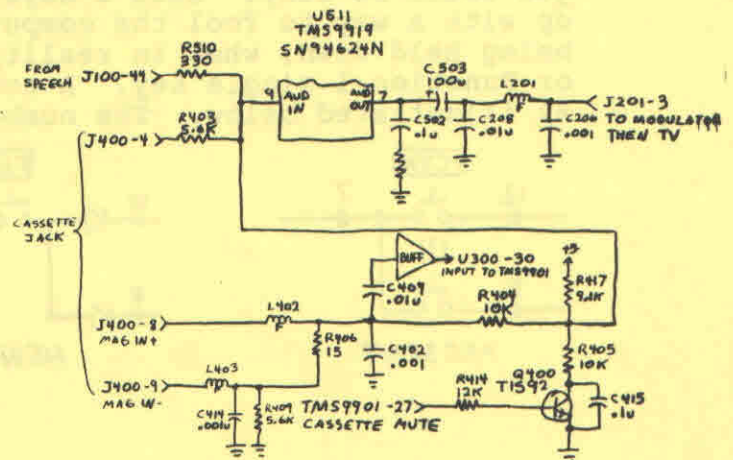
******COLECO POWER SUPPLY******

In my article last month about using the Coleco external power supply with the TI, I overlooked that there is a possibility of interchanging the two types of power connections. This can easily occur when you have one console that has the internal power supply removed so you can use the Coleco, and another console in the stock configuration. This is exactly what happened at the last meeting that caused smoke! I attached the TI transformer directly to my console with no power supply in it. I put AC directly on the internal logic chips, causing much damage and smoke. I want to point out that this had nothing to do with Tony May's printer interface he was there to demonstrate. Tony, I sincerely appologize for not foreseeing this problem, and Murphy just chose that particular time to strike us. It was unfortunate that you, an outsider to our group, had to receive that type of reception. What a welcome, plugging in your device, and watching a console burn up!

If you want to use the Coleco power supply arrangement as I described it, I strongly recommend that you key or polarize the plugs so that the above circumstance does not happen to you. My suggestion is to drill a small hole in the bottom of the connector that is in the console you are modifying, and insert a small 4-40 screw and nut to protrude about 1/8 inch. Then cut, dig, or melt a small slot in the end of the Coleco power connector to match. This prevents the normal TI AC power transformer connector from being inserted into the modified console. If you accidentally connect the Coleco power connector to an unmodified console, no damage results, but it doesn't work, either. My concern here is preventing damage. I have been using the Coleco for about a month now, and except for the fireworks at the meeting, have had no troubles with it. The console runs exceptionally cool, and the Coleco runs just slightly warm. Also, while I have a member's console apart on my bench either to fix it or install the extended memory/speech synthesizer, I use a small adapter on the end of the Coleco plug so that I can plug directly into the white molex power plug coming from the main board. Thus eliminates the clutter of having to use the console's internal power supply. Gary Bishop

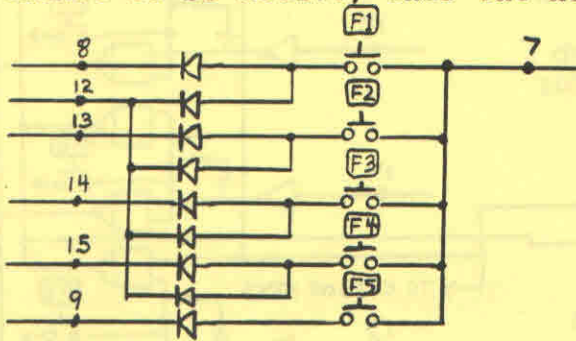
******TI99/4A AUDIO CIRCUIT******

Did you ever wonder what the audio circuit schematic of the TI-99/4A looked like? Well, I had an opportunity to draw it out, so here it is for all to see.



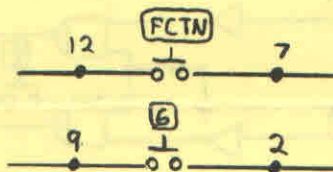
INTERNAL AUDIO CIRCUIT, TI99-4/A

outputs to be connected to the input line, but not allowing other signals to back up. Remember that there are many other keys attached to the points shown, so the diodes prevent the computer from recognizing any other keys at the same time. You might ask if this doesn't confuse the computer? No, as described above, the keyboard is scanned. This means only one output of the 74LS156 is active at a time, then the corresponding input is determined. The computer then turns off that output and turns on the next one. This continues until all outputs have had a chance to be active, thus the name 'scan.'



Well, this trick works pretty slick for a while. The reason this is so simple is because there is a shared line in the key matrix between the original keyboard's 'FCTN' key and the keys '1', '2', '3', '4', and '5.' The schematic for the rest of new function keys F1 to F5 is on the left.

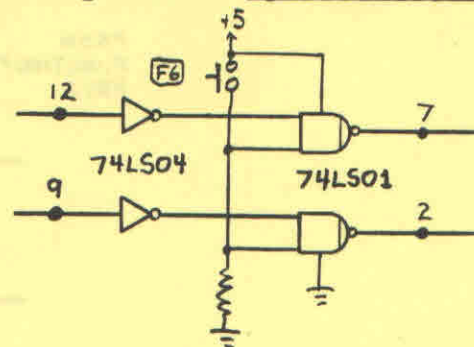
Notice I said this trick works for a while? This is because when we come to the '6' key, we find that there is no shared line between it and the 'FCTN' key in the keyboard matrix. The situation is as follows:



At this point, simple diode tricks run out, and we must use simple logic chips or gates to do the job. The problem is to press one key, and connect both outputs to their respective inputs without connecting them to each other. The chips that do this are 74LS01 and 74LS04. The

LS01 chip has an output that can be tied together with other outputs when necessary. This property is technically called open collector.

Well the circuit for F6 is:
The chip provides us with the NAND function, which means both lines going into the gate must be at +5 volts to provide a 0 volt output. When the switch is pressed, this condition is met. This allows each scan output to be connected to the correct input without interfering with each other.

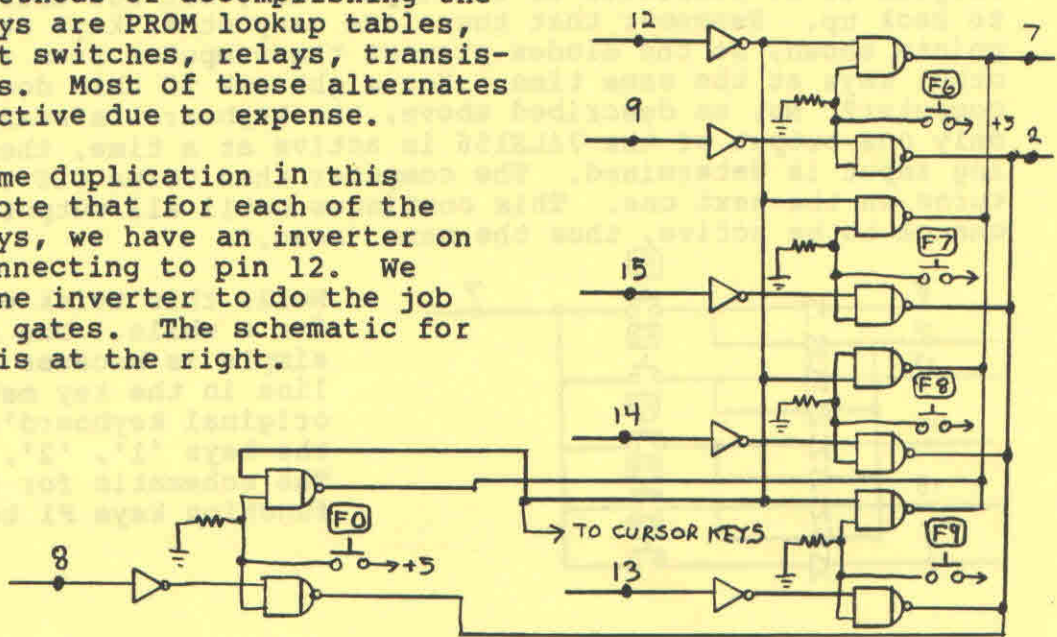


We can run the press on this circuit to provide the other 'F' keys, as we will show.

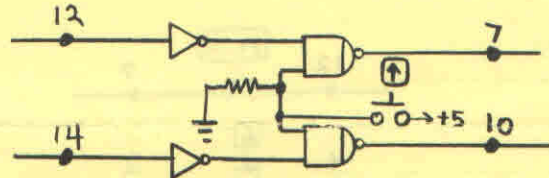
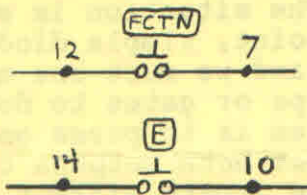
Discussion of this approach: It gets the job done, but requires active circuitry (circuitry that requires power and ground to do their job). So now, power and ground must be brought out to the 'new' replacement keyboard or pad. There is also some slight additional power consumption, but the console should be able to handle it. As long as power and ground are being ran to the keyboard, some other neat tricks can be incorporated.

Alternate methods of accomplishing the function keys are PROM lookup tables, dual contact switches, relays, transistor switches. Most of these alternates are unattractive due to expense.

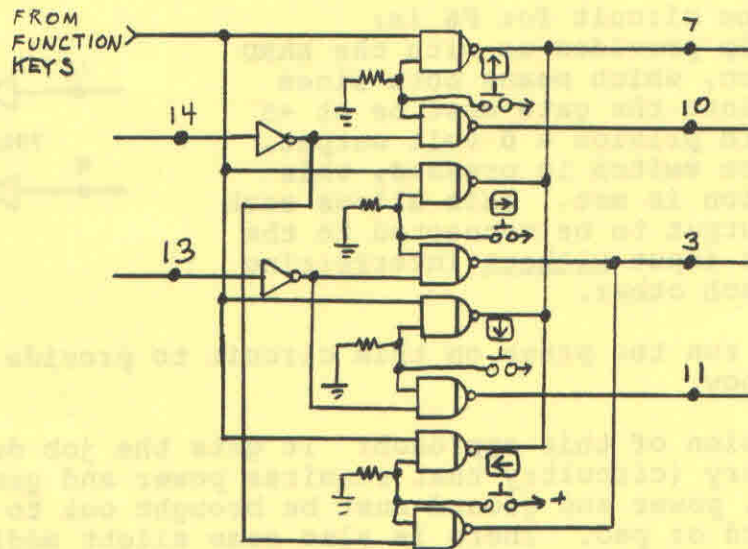
There is some duplication in this approach: note that for each of the F6 to F0 keys, we have an inverter on the line connecting to pin 12. We only need one inverter to do the job for all the gates. The schematic for these keys is at the right.



How about cursor control? The FCTN-arrow keys can be tackled in much the same manner as above. We will start with the up arrow, or FCTN-E.

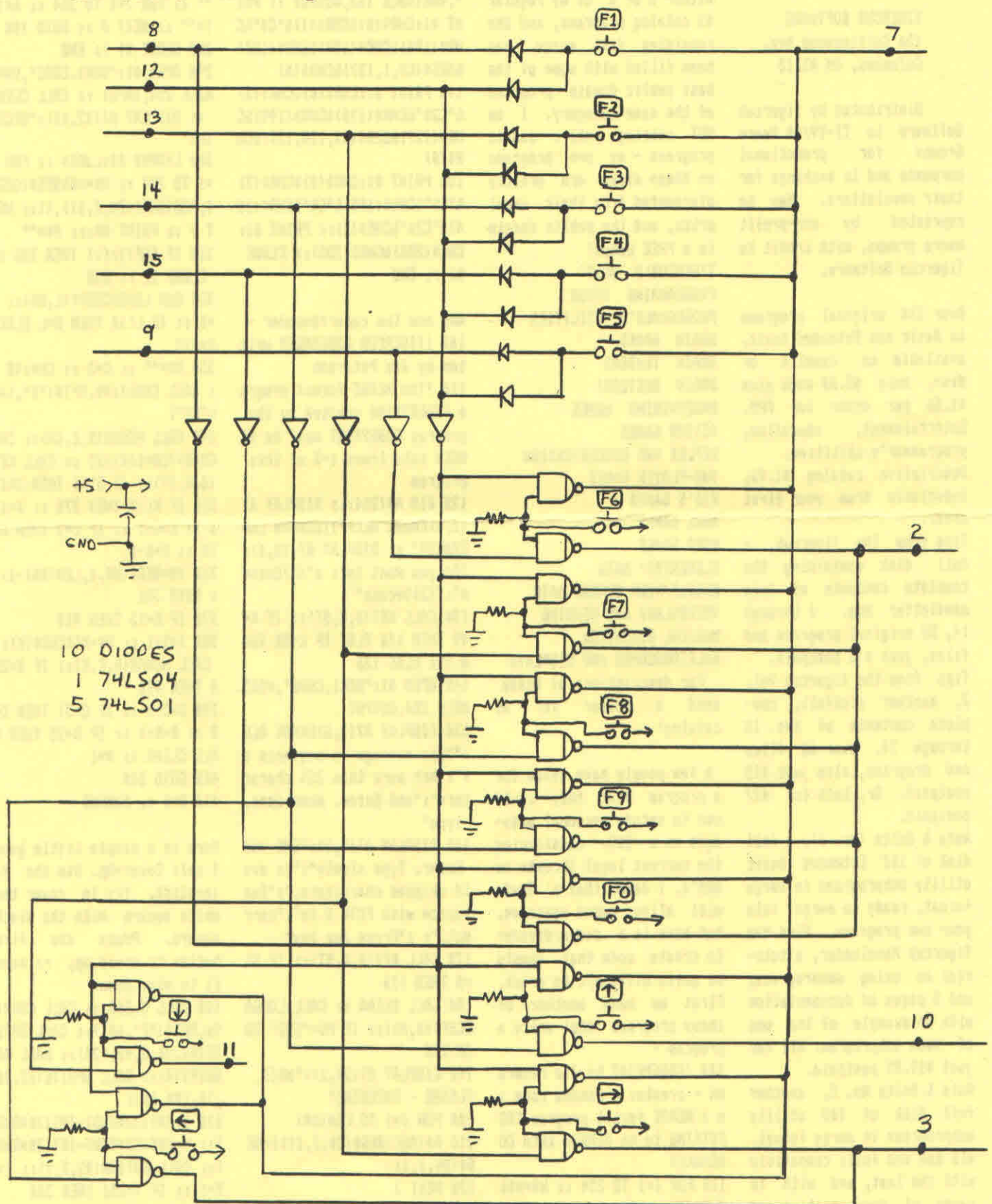


A similar approach is used for each of the other 3 cursor keys, and the inverter for the function keys above can also be used as the input for this circuit. The cursor control schematic is:



It should be noted that many of these inverters can be combined with the function control schematic.

Next time, I will discuss liberating those other keys from the FCTN prison, such as: ~ [] _ ? ' " | { } \ ` Also, watch this column for an illuminated alpha lock key, backspace with delete, auto-insert, and more! The complete schematic is:



- 10 DIODES
- 1 74LS04
- 5 74LS01

***** WARNING! HIGH VOLTAGE *****

This reminder may be a little late, but beware of static electricity this winter! Dry, heated air allows extra static to be stored on your body, which will jump to your computer or command cartridge at the first opportunity. Try to ground yourself to a cold water pipe or another piece of metal before you reach for the power switch!!!

Jim Green

***** KEY COMMAND CHANGES *****

From the January 1985 issue of the Atlanta 99/4A Computer Users Group newsletter CALL NEWSLETTER is an interesting article for those of you who are lucky enough to have word processing. This article applies to systems using the TI-WRITER and a Gemini 10X printer. (This article was originally copied from the 'Suncoast Beeper' newsletter of the Suncoast 99'er Users Group.)

*The program below shows you how to print from the EDIT mode of TI-WRITER. By pressing 'CTRL' and 'U' your cursor changes into an underline character, denoting that you are writing control characters to the document that the 99/4A will obey. At the end of the article the author states that these controls also work in Basic and Extended Basic. These keys can be used to control the printer out of a Basic or Extended Basic program, or direct from the command mode of the computer. ***** WARNING ***** I do not recommend using these in multiplan or any other program which is using CTRL or FCTN keys to control editing. Have fun with these and experiment.*

SINGLE KEYS

FUNCTIONS PERFORMED

CTRL N	Double-width mode
CTRL T	Cancels double-width
CTRL Q	Printer on-line
CTRL S	Printer off-line
CTRL O	Compressed (Pica) mode
CTRL R	Cancel compressed mode
CTRL G	Bell
CTRL H	Backspace
CTRL I	Horizontal tab
CTRL J	Line feed
CTRL K	Vertical tab
CTRL L	Form feed
CTRL M	Carriage return
CTRL B	Ends macro instruction
CTRL .	Escape (ESC)
FCTN V	Delete

COMMON

MULTI.

FUNCTION

ESC 4		Italic mode
ESC 5		Cancel Italic
ESC 8		Cancels paperout
ESC 9		Paperout on
ESC !		Select macro
ESC E		Emphasized mode
ESC F		Cancels emphasized mode
ESC G		Double-strike
ESC H		Cancels double-strike
ESC		Resets printer
ESC S	0	Superscript
ESC S	1	Subscript
ESC 0		Line feed to 1/8"
ESC 1		Line feed to 7/72"
ESC 2		Line feed to 1/16"

***** PROGRAMMING HINTS *****

From the Atlanta 99/4A Computer Users Group newsletter CALL NEWSLETTER comes a few programming hints that may be of interest:

1. You probably already know this, but did you know that you don't have to type in the blank spaces before the ":" in multiple statements while programming in Extended Basic? Just type everything together (100 CALL CLEAR::RANDOMIZE::FOR D=1 TO 100::NEXT D) and the computer will separate it for you when you press ENTER.
2. Have you ever had difficulty finding which joystick is to be used in a program? If the program was written for joystick #1 then joystick #2 won't work, and vice versa. Add the following lines at the beginning of the program and let the computer do the work:

```

100 PRINT "PRESS FIRE BUTTON TO CONTINUE"
110 CALL KEY(1,K1,S)
120 CALL KEY(2,K2,S)
130 IF K1+K2<>17 THEN 110
140 JS=INT(K1/18+K2/9+1)
    
```

Now replace the CALL JOYST statement in the program with: XXX CALL JOYST(JS,X,Y). The program will respond to whichever of the two joysticks you were holding when you pressed the fire button.

From the January 1985 issue of the Pittsburgh Users Group newsletter PERIPHERAL is an interesting article on using nested loops while programming. For a lot of you this may be old information, but for some - :-

Your printer will now go at the speed you require.

***** TI PROGRAM RECOVERY *****

IMPORTANT: Remember that you must physically set the printer's dip switches (consult the printer's owner manual for location) to the baud rate at which you intend to use. Otherwise, the printer will just sit there.

I haven't tried the following tip, which is in the current issue of HCM (letters to the editor section). If you have Extended Basic and 32K memory expansion, you should be able to retrieve a program lost through an accidental QUIT.

Dave Dalton

Type: CALL PEEK(-31952,A,B,C,D) :: PRINT A;B;C;D.
The first two values point to the start of the line number table, the second pair point to the end. Write down the numbers, press QUIT, and re-enter Extended Basic. Next type: CALL INIT followed by: CALL LOAD(-31952,W,X,Y,Z). Use the values you wrote down earlier instead of W,X,Y,Z! Check to ensure that you recovered the lost program by typing LIST.

***** TI BULLETIN BOARD *****

Jim Nanneman, who owns the Apple BBS, has informed me that the TI bulletin board will be taken down unless greater interest is shown by the TI users.

Dave Dalton

Ed Hayek

***** MEMBERSHIP RENEWALS *****

Membership renewals continue at a good rate. During the December meeting, and through the mail, I have received 13 renewals and one new member. I understand the other officers have received additional renewals. We now have over 65 paid members for the 84-85 year. If you still haven't renewed, please do so before you are dropped from the newsletter!!! You can renew by mail. Send \$8.00 to Ed Hayek and you will get your membership card by return mail.

Ed Hayek

***** IT'S A GOOD MACHINE *****

In the current issue of HCM a reader asks about making his C-64 a slave to his TI-99/4A. Apparently, this gentleman has both computers but has decided that the TI is a much superior machine to work with. He does miss the additional memory which the C-64 provides, and would like to access it with the TI. The point is, here is a person who has both machines and prefers the TI. This should make those of us who didn't run out and buy other machines (when TI abandoned the TI-99/4A) feel good. We do have a good machine!!!

Ed Hayek

***** NEW MEMBERS *****

We'd like to offer a hearty welcome to our newest member:

Dominique Greene, of Cedar Rapids.

***** HOME COMPUTER MAGAZINE *****

According to the folks at Home Computer Magazine, Volume 4, Number 5 is in the mail! I called them after receiving the issue on my current subscription. Previous experience was that our group bulk offer should have arrived first. The Christmas mail may be the culprit. The issue will be available at the January 10th meeting. Those members on the sign-up list will get first choice. Those of you who don't pick up your issue at the meeting, or make other arrangements with me prior to the meeting, should note that the issue will be sold to another member on a first-come first-serve basis.

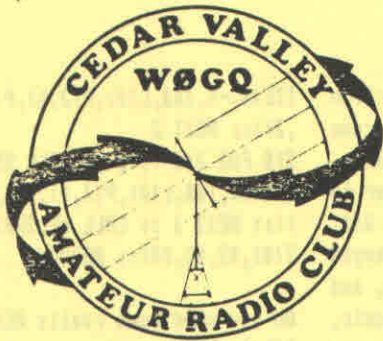
Ed Hayek

***** TIGERCUB SOFTWARE *****

As indicated in the article above, we do have a good machine in the TI-99/4A. However, a computer is only as good as the software that will run on it. I want to make a plug for some of the people who are supporting us with software at very little cost. We've all read Jim Peterson's tips in our newsletter. His TIGERCUB SOFTWARE sells a catalog for \$1.00 that provides listings of his software that sells for \$3.00 each!! In addition, he offers a disk containing his tips (over 50 programs) for \$15.00. If you are interested, the address is:

TIGERCUB Software
156 Collingwood Ave.
Columbus, OH 43213

Ed Hayek



CEDAR VALLEY Amateur Radio Club

P.O. Box 994
Cedar Rapids, Iowa 52406

ALL HAM RADIO AND COMPUTER CLUBS

Dear Ham Radio and/or Computer enthusiast,

The Cedar Valley Amateur Radio Club, in cooperation with the computer clubs in the metropolitan area, announces its first-ever ham radio/computer "CEDAR VALLEY HAMVENTION". The Hamvention will combine the Cedar Valley Amateur Radio Club's traditional annual hamfest with the computer interests of the area.

For hams, and computer enthusiasts this will mean the usual dealer displays, flea market, interesting forums, etc. In addition, there will be numerous computer activities going on.

For both groups, there will be live demonstrations and some really nice ham radio and computer door prizes, and plenty of time for exchange of ideas with your fellow hobbyists, as this will be a two-day event.

The dates are August 2nd and 3rd, with a banquet on Saturday evening, August 2nd. All of this, in the air-conditioned facilities of the Five Seasons Center, site of the 1982 National ARRL Ham Convention.

The Cedar Valley Hamvention has secured outstanding hotel room rates; \$50.00 for 1 to 4 persons in a room, and along with that, Stouffers Hotel has offered participants in this year's Hamvention, a 20% discount in the Top of the Seasons Restaurant.

Please read this letter in your club meetings and put it in your newsletters. More details to come; please be alert for them. If for some reason, you don't receive them by the first of May, please write and ask for them from:

Duane Rinderknecht, WDØBHR
2825 23rd Avenue
Marion, IA 52302
Registration

Dick Isard, WBØVVZ
General Chairman
2818 Southland Street SW
Cedar Rapids, IA 52404
(319) 364-0855 or (319) 393-8703

Tom Zuber WNØDRC
4201 Dalewood Avenue SE
Cedar Rapids, IA 52403
Commercial Accounts

Cedar Valley Amateur Radio Club
Commandore User Group
C.V. Computer Association
Hawkeye P.C. Group
C.R. Apple User's Group
T.I. Group

For Tickets

Call

Brace Winter

362-6196

\$5 Adult

\$3 Student

WØGQ



FROM:

The following TI-WRITER help chart has been published in several newsletters.

A HANDY DANDY TI-WRITER USERS REFERENCE GUIDE

SUBMITTED BY BOB STEPHENS

The following handy TI-WRITER commands are reprinted for the June issue of the 99'er News published by the TI Users Group of Will County, Romeoville, Il. This puts the most used commands on one page for handy access at your computer.

EDITOR COMMAND	FCTN:CTRL	EDITOR COMMAND	FCTN:CTRL	EDITOR COMMAND	FCTN:CTRL
Back tab		T : Ins. Blank line	8 : O : Quit	=	
Beginning/line		V : Insert character	2 : G : Reformat		2orR
Command/escape	9	C : Last paragrap	6orH: Right arrow	D	D
Delete character	1	F : Left arrow	S : S : Roll down	4	A
Del. end of line		K : Left margin rel.	Y : Roll up	6	B
Delete line	3	N : New page	9orP: Screen color		3
Line #'s(on/off)	0		8orM: Tab	7	I
Down arrow	X	A : Next paragraph	4orJ: Up arrow	E	E
Duplicate line		S : Next window	5 : Word tab.		7orW
Home cursor		L : Oops!	1orZ: Word wrap/fixed		0

Load files: LF (enter) DSK1.FILENAME (load entire file)
 LF (enter) 3 DSK1.FILENAME (merges filename with data in memory after line 3)
 LF (enter) 3 1 10 DSK1.FILENAME (lines 1 thru 10 of filename are merged after line 3 in memory)
 LF (enter) 1 10 DSK1.FILENAME (loads lines 1 thru 10 of filename)

Save files: SF (enter) DSK1.FILENAME (save entire file)
 SF (enter) 1 10 DSK1.FILENAME (save lines 1 thru 10)

Print Files: PF (enter) PIO (prints control characters and line numbers)
 PF (enter) C PIO (prints with no control characters)
 PF (enter) L PIO (prints 74 characters with line numbers)
 PF (enter) F PIO (prints fixed 80 format)
 PF (enter) 1 10 PIO (prints lines 1 thru 10)

NOTE: The above assumes PIO, DSK1.FILENAME, and RS232 are also valid!
 To cancel the print command press FCTN 4.

Delete file: DF (enter) DSK1.FILENAME

Setting Margins and Tabs: (16 tabs maximum)
 L - Left margin R - Right margin I - Indent T - Tab
 Use ENTER to execute or COMMAND/ESCAPE to terminate command.

Recover Edit: RE (enter) Y or N

Line move: M (enter) 2 6 10 (moves lines 2 thru 6 after line 10)
 M (enter) 2 2 10 (moves line 2 after line 10)

Copy: same as move except use C instead of M.

Find String: FS (enter) /string/ (will look for string in entire file)
 FS (enter) 1 15 /string/ (will look for string in lines 2 thru 15)

Delete: D (enter) 10 15 (deletes lines 10 thru 15 in memory)

The enclosed 7-page CD-ROM for Windows is ready to be used.

A HANDS ON GUIDE TO WRITING USING REFERENCE GUIDE

EDITED BY BOB STONER

The following guide is written especially for use with the CD-ROM. It is intended to be used as a reference guide for the CD-ROM. It is intended to be used as a reference guide for the CD-ROM.

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7	Using the Reference Guide to Write	7	Using the Reference Guide to Write	7	Using the Reference Guide to Write

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