8911

ESTABLISHED
1985
WEST PENN 99'ERS
SUPPORTING THE
TI-99/4A
COMPUTER

ISSUE #11 NOVEMBER 1989

The October meeting of the West Penn 99ers was slow,dull, and stale for all of you who missed it, however for all of you who were there you know it was fast, sharp, and crisp and shame on all of you slow, dull and stale people who indeed missed it. (Willforth came late so he is only half slow). President Mickey (for now running uncontested) opened the meeting early at 7:10 PM with rumblings from the back regarding no Diet Coke. She then reviewed the slate of nominees (see below) and asked for nominees off the floor. The only additional taker was Stan Katzman for Library position and the suggestion was that Bob Sadusky might challenge him ..

A review of the Harrisburg show (Carlisle) was given by Jim Peters. The show was indeed a good one with the need for more vendors and more purchases for the ZENO board, although Eric did do pretty well. The discussion then degraded for a moment into Ram chips (like Buffalo chips) or medication chips or potato chips, lastly zic chips and a rumbling of no Diet Coke again. Meanwhile back at the meeting.....

The Chicago users group has an assembler tutorial (16 lessons- 2 disks (see G. Kelly)). G. Kelly was also asked to touch base with "The Computer Stopper" as to their dropping of the TI column.- PROTEST!!

The raffle again drew record numbers of tickets sold, probably because Mickey did not demo any of the the prizes. Mike Sealy showed Space Station Theta, a 79 screen (TI runner type) game and Frank Zic demoed Tris, "The Module". Classes in printer hardware and assembly were started at 8:20 PM by Willforth and G. Kelly, respectively.

President - M Schmitt	Cor. Sec.- G. Kelly
V President- S. Coleman	Library- S. Katzman
Rec. Sec - E. Bittner	Editor- J. Willforth

P.S Nominations will be scraped off the floor at the November meeting. Be there for the election

Submitted Fortunately,
Scoops Bittner

WEST PENN 99'ERS CLUB INFORMATION

NEXT MEETING DATE: NOVEMBER 21, 1989

MEETING LOCATION: ST. STEPHEN'S BYZANTINE CATHOLIC CHURCH

JUST OFF ROUTE 30
BETHEL ROAD, NORWIN

TIME OF MEETING: 7:00 P.M.

LIST OF WEST PENN OFFICERS FOR 1989

PRESIDENT:	MICKEY	335-0163
VICE PRESIDENT:	SCOTT	523-3754
TREASURER:	LYNN	835-4304
RECORDING SEC:	ED	864-4924
CORRESPONDING SEC:	GENE	829-0469
LIBRARIAN:	ROB	864-1233
NEWSLETTER EDITOR:	JOHN	527-6656

GENERAL ITINERARY OF THE CLUB'S MEETING

6:45 P.M.	DOORS OPEN
7:00 P.M.	GENERAL MEETING
7:45 P.M.	DEMOS AND NEW INFO
8:45 P.M.	HARDWARE & PRINTERS
8:45 P.M.	INTRO TO ASSEMBLY
8:45 P.M.	INTRO TO TI-BASE
8:45 P.M.	USING YOUR CASSETTE
11:00 P.M.	DOORS CLOSE

MEETING HIGHLIGHTS FOR THIS MONTH

ELECTION OF CLUB OFFICIERS FOR 1990

LATEST T. I. NEWS FROM THE CHICAGO SHOW

AV-INDEX PROGRAM, DEMO BY MIKE SEALY

LIBRARY "DEMO OF THE MONTH" BY ROB EKL

LATEST SOFTWARE DEMOS BY JOHN WILLFORTH

RENEW YOUR MEMBERSHIP DUES!

$15.00 PER YEAR FOR INDIVIDUAL / FAMILY
$10.00 PER YEAR FOR JUST THE NEWSLETTER

TREASURER'S REPORT FOR OCT. 18,'89

FROM LYNN GARDNER

10/17	CASH ON HAND	$ 50.00
	LIBRARY SALES	30.00
	MICROPENDIUMS	36.50
	DISKS & CASES	103.00
	RAFFLE	60.00
	DUES	15.00
	TOTAL	$294.00
10/18	DEPOSIT	- 244.00
10/18	CASH ON HAND	$ 50.00
9/20	BANK BALANCE	$1083.63
10/5	INTEREST	+4.94
10/17	POSTAGE (JOHN)	- 65.00
10/18	MICROPENDIUM	- 30.00
		788.13
10/18	DEPOSIT	+244.00
	BALANCE	$1237.57
	TOTAL CASH BALANCE	$1287.57

NEW T.I. CONSOLE POWER SUPPLIES, WALL XFMERS, KEYBOARDS, AND R.F. MODULATORS AVAILABLE.....

T.I. SWITCHING SUPPLY W/ 18 VOLT XFMER AS A SET AVAILABLE FOR $5.00 OR 10 SETS $45. CATALOG NUMBER: PS-TX
T.I. 48 KEY KEYBOARD FOR $3.50 10/$30.00 CATALOG NUMBER: KP-48S
T.I. SOUND AND VIDEO MODULATOR (RF MOD.) $5.00 EACH. CATALOG NUMBER: AVMOD

1-800-826-5432 VISA, MASTERCARD, DISCOVER ALL ELECTRONICS CORP. P.O. BOX 567, VAN NUYS CA 91408 NO COD.
NOTE: THEY ALSO HAVE 44-PIN CONNECTORS IDEAL FOR I/O PORT PROJECTS FOR $1.00 EACH 10 FOR $8.00 CATALOG NUMBER: EBC-1G. IF YOU DON'T HAVE SOME OF THESE AS SPARES, OR YOU'RE HAVING A PROBLEM WITH YOUR KEYBOARD OR RF MODULATOR, DON'T WAIT ORDER NOW! J.F.W.

PRINTERS #3

BY JOHN F. WILLFORTH (NOV. 1989) ML=MORE LATER

THIS MONTH I'D LIKE TO CONTINUE WITH MORE COMMANDS TO THE PRINTER THAT MAY HELP THE USER GET MORE OUT OF THIS VERY VERSATILE PERIPHERAL. BELOW ARE THREE PRINT OUT EXAMPLES.

(1)

```
ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ012345678abcdefghijklmnopqrstuvwxyz
```

132 COLUMN TEXT PRINTOUT FROM PROGRAM CONTROL IS INDICATED IN THE LINE ABOVE. THE PRINTER WAS FIRST PUT IN VARIABLE 132 MODE, FOLLOWED BY CONDENSED MODE (TO ALLOW FOR SMALL ENOUGH CHARACTERS TO FIT THE 132 COL. LINE) AND THEN THE RIGHT MARGIN WAS SET TO THE 132ND COL.

(2)

```
ABCDEFGHIJKLMNOPQRSTUVWXYZ01
23456789abcdefghijklmnopqrst
uvwxyzABCDEFGHIJKLMNOPQR
STUVWXYZ12345678ABCDEFGHIJKL
MNOPQRSTUVWXYZ
```

(3)

```
ABCDEFGHIJKLMNOPQRSTUVWXYZ012
3456789abcdefghijklmnopqrstuv
wxyzABCDEFGHIJKLMNOPQR
STUVWXYZ012345678abcdefghijkl
mnopqrstuvwxyz
```

28 COLUMN PRINTOUT IS INDICATED IN THE LINES IMMEDIATELY ABOVE STARTING IN COLUMN 00 AND ENDING IN COLUMN 27 ON MY PRINTER. THE RIGHT MARGIN WAS SET TO 28 , WHICH CAUSES ALL THE OUTPUT TO THE PRINTER TO AUTOMATICALLY GO TO A NEWLINE AND CARRIAGE RETURN WHEN THAT POINT IS REACHED.

29 COLUMN PRINTOUT STARTING IN COLUMN 48 AND ENDING IN COLUMN 76 WAS SHOWN IN THE PRINTOUT ATOP THE COLUMN OF TEXT ON THE RIGHT. THIS IS ACCOMPLISHED ON THE EPSON COMPATIBLE WITH JUST ONE COMMAND. YOURS MAY TAKE SEVERAL.

THE 132 COLUMN TEXT PRINTOUT MAY BE USEFUL TO YOU IN ANY NUMBER OF APPLICATIONS. ACTUALLY I CAN BY TWEEKING SOME NUMBERS INCREASE THAT A BIT TOO. IF WE LOOK AT THE PROGRAM (1) YOU CAN SEE THAT WE MUST FIRST OPEN THE PRINTER AS A VARIABLE 132 TO ALLOW FOR THE ADDITIONAL SIZE COLUMN WISE OF THE LINE. YOU MUST SET PRINTER IN THE CONDENSED MODE USING CHR$(15) AND THEN SET THE RIGHT MARGIN TO 132 WITH CHR$(81); CHR$(132). I'LL BET YOU CAN TELL WHICH CHR$ DOES THAT. NOW AS LONG AS YOU PRINT TEXT TO THE PRINTER YOU WILL BE IN THIS MODE. UNTIL YOU EITHER SEND A RESET TO THE PRINTER OR SHUT IT OFF.

THE 28 COLUMN PRINT (ACTUALLY ANY LENGTH TO 80 COLUMNS IN THIS EXAMPLE) IS USEFUL OBVIOUSLY FOR COLUMNIZING TEXT AS I AM DOING HERE. IN (2) PROGRAM YOU CAN SEE THAT ALL THAT I HAVE TO DO IS SET THE RIGHT MARGIN TO 28 USING CHR$(28) OR ANY OTHER VALUE TO 80.

(1)

```
100 OPEN #1:"PIO",VARIABLE 1
32
110 PRINT #1:CHR$(15);CHR$(2
7);CHR$(81);CHR$(132)
120 PRINT #1:"ABCDEFGHIJKLMN
OPQRSTUVWXYZ0123456789abcdef
ghijklmnopqrstuvwxyzABCDEFGH
IJKLMNOPQRSTUVWXYZ012345678a
bcdefghijklmnopqrstuvwxyz"
```

(2)

```
100 OPEN #1:"PIO"
110 PRINT #1:CHR$(27);CHR$(8
1);CHR$(28)
120 PRINT #1:"ABCDEFGHIJKLMN
OPQRSTUVWXYZ0123456789abcdef
ghijklmnopqrstuvwxyzABCDEFGH
IJKLMNOPQRSTUVWXYZ12345678AB
CDEFGHIJKLMNOPQRSTUVWXYZ"
```

(3)

```
100 OPEN #1:"PIO"
110 PRINT #1:CHR$(27);CHR$(8
8);CHR$(48);CHR$(76)
120 PRINT #1:"ABCDEFGHIJKLMN
OPQRSTUVWXYZ0123456789abcdef
ghijklmnopqrstuvwxyzABCDEFGH
IJKLMNOPQRSTUVWXYZ012345678a
bcdefghijklmnopqrstuvwxyz"
```

THE 29 COLUMN PRINT STARTING IN COLUMN 48 EXAMPLE NUMBER (3) IS A GREAT WAY TO PRINT OUT A SECOND OR THIRD COLUMN STARTING IN N1 COLUMN AND ENDING IN N2 COLUMN. IN THE PROGRAM YOU SEE CHR$(88) WHICH ON MY PRINTER CAUSES IT TO ACCEPT TWO MORE COMMAND ATTRIBUTES, THE LEFT MARGIN [CHR$(48)] AND THE RIGHT MARGIN [CHR$(76)] SETTINGS THESE BEING FROM COLUMN 48 AND PRINTING THROUGH COLUMN 76, ALLOWING FOR A 4 COLUMN MARGINE ON MY PAPER. THIS MAY BE ELEMENTARY TO SOME OF YOU, BUT I KNOW THAT THERE ARE MANY EXTENDED BASIC PROGRAMS OUT THERE THAT I'VE ALWAYS WANTED TO CUSTOMIZE THE PRINTING ROUTINES IN, AND DIDN'T BECAUSE I DIDN'T WANT TO TAKE THE TIME TO LEARN WHAT MY PRINTER CAN DO. I MAY DEAL WITH THE PRINTER COMMANDS ONE MORE MONTH, PAPER SPACING, AND WE'LL GET BACK TO THE HARDWARE ASPECT. ML

TETRIS UPDATE
BY STEVE KARASEK

THERE WAS A BUG IN MY RETRIS GAME WHICH WAS PRINTED IN THE JUNE ISSUE OF THE BRIDGE. IF YOU DROPPED A PIECE WHICH WAS ALREADY UNDER ANOTHER PIECE, IT WOULD DROP ONTO THE PIECE BELOW IT. THE FIX IS TO LINE 250. AT THE END OF THAT LINE, CHANGE: P=D-X4 TO P=MAX(P,D-X4).

IF YOU WANT TO ADD SOME SOUND EFFECTS, EDIT LINE 270. CHANGE THE END OF THE LINE GROM: GOTO 380 TO CALL SOUND(10,440,0) :: GOTO 380.

IF YOU'VE BEEN PLAYING FOR A WHILE AND NEED MORE CHALLENGE, MAKE THE FOLLOWING CHANGES. ADD THIS LINE: 145 G=4
AT THE BEGINNING OF LINE 170, TYPE P=G INSTEAD OF P=1. IN THE MIDDLE OF LINE 180, TYPE X=G*8+1 INSTEAD OF X=1. IN LINE 190, CHANGE Z(0) TO Z(G), Z(X2) TO Z(G+X2), Z(X3) TO Z(G+X3), AND Z(X4) TO Z(G+X4). THESE CHANGES WILL REDUCE THE SIZE OF THE PLAYING FIELD FROM 24 TO 20 LINES. YOU CAN ALTER THE SIZE OF THE FIELD FURTHER BY CHANGING THE VALUE OF G IN LINE 145. G=0 WILL RESTORE THE ORIGINAL 24 LINES, G=1 WILL REDUCE IT TO 23 LINES, ETC.

THE ABOVE CORRECTION APPEARED IN THE COMPUTER BRIDGE SEPT. 1989 AND CORRECTS ERRORS AND ENHANCES THE PROGRAM WHICH WAS REPRINTED IN THE WEST PENN 99'ER AND MICROPENDIUM. THANKS STEVE AND COMPUTER BRIDGE.

HERE IS A GOOD PLACE TO MENTION TEXAS TAXES BY STEVE KARASEK.

STEVE HAS BEEN PRODUCING AND UPDATING TEXAS TAXES FOR SEVERAL YEARS NOW, AND IT ISN'T TOO EARLY TO PLACE YOUR ORDER FOR THE PROGRAM. THE COST IS $19.95 PLUS $2. S/H AND HE WILL SEND YOU A YEARLY UPDATE FOR ONLY $10. ALL FORMS EXCEPT 1040 AND 1040A CAN BE PRINTED AND MAILED DIRECTLY. ANY VALUES FROM ONE FORM THAT ARE NEEDED BY ANOTHER FORM ARE AUTOMATICALLY PASSED FROM ONE FORM TO THE OTHER. BUILT IN CALCULATOR.
(314) 961-2052 STEVE KARASEK
855 DIVERSEY DRIVE, ST. LOUIS, MO 63126
ALSO AVAILABLE:
* MONOPOLY REQ. 32K & XBASIC $15.
* SUPERBASIC $25.
ADD $2.00 FOR S/H.

JUSTIFYING DECIMALS IN BASIC
BY EARL RAGUSE ROM SEPT 89

CONSOLE BASIC DOES NOT PROVIDE A COMMAND FOR ALIGNING DECIMAL POINTS AS DOES XBASIC WITH PRINT USING, BUT HERE IS A ROUTINE THAT DOES IT WELL. ITS SO EASY, THAT I OFTEN USE IT IN XBASIC, INSTEAD OF PRINT USING. LINES 5 THROUGH 8 DO ALL THE WORK, THE REST ARE FOR DEMONSTRATION. DELETE WHAT YOU WISH, RESEQUENCE AND SAVE IN MERGE FORMAT FOR MERGING WITH YOUR NUMBER PROGRAMS.

```
1 REM DSK1.JUSTDEC
2 CALL CLEAR
3 INPUT "COLUMN FOR DECIMAL
POINT ":C
4 INPUT "INPUT A NUMBER ":X
5 X$=STR$(X)
6 IF POS(X$,".",1)=0 THEN 7
ELSE 8
7 X$=X$&".00"
8 PRINT TAB(C-POS(X$,".",1))
;X$
9 GOTO 4
```

FANFARE FOR A TITLE
FROM UNCLE MILTIE'S COLUMN LA 99'ERS 9/89

```
100 ! FANFARE FOR A TITLE
110 CALL SOUND(110,262 1)::
CALL SOUND(110,262,1):: CALL
 SOUND(110,330,1):: CALL SOU
ND(110,392,1):: CALL SOUND(2
00,523,1)
120 CALL SOUND(95,392,1):: C
ALL SOUND(350,523,1)
```

THE BOZO CHRONICLES
BY GARTH POTTS SOONER 99'ERS

GARTH POTTS OF THE SOONERS U.G. HAS PUT TOGETHER AN UNUSUAL BOOKLET ABOUT AND FOR THE TI-99/4A. IT HAS A SPRINKLING OF INFORMATION ON VARIED SUBJECTS INCLUDING TYPES OF DISK FILES, INFORMATION ON SELECTING AND ADDING TO YOUR SYSTEM, A KID'S RYEVIEW OF THE GAMES PLAYED ON THE T.I., HOW HE OVERCAME FEAR OF USING A SPREADSHEET AND A LOT OF INFORMATION ON MULTIPLAN, ON FUNNELWEB, TI-WRITER, TELCO, AS WELL AS ARCHIVING, DATABASING, AND PAGE PRO, PICASSO, AND THE LIKE. THERE IS MUCH MORE. YOU MAY BE ABLE TO GET A COPY OF THIS 24 PAGE BOOKLET BY WRITING: GARTH POTTS, 12513 HICKORY HOLLOW DRIVE, OKLAHOMA CITY, OK 73142

MR. POTTS HAS DONATED THIS BOOKLET TO THE PUBLIC DOMAIN AND WE HAVE RECEIVED OUR COPY. WE'LL BE MAKING "FREE" COPIES AVAILABLE AT THE NOVEMBER MEETING. SO COME AND GET YOUR FREE COPY. YOU MAY WANT TO THEN WRITE AND THANK HIM FOR HIS EFFORT.

DO YOU REALLY TRUST COMPUTERS?

EXTENDED BASIC GROM/ROM PARTS..... THIS INFO IS RIGHT OFF THE INVOICE I RECEIVED WITH THE PARTS FROM TI DEALER PARTS:

PART-NUMBER	DESCRIPTION	QUANTITY	UNIT-PRICE
1015960-1113	GROM,EXT.BASIC	1	3.60
1015960-1114	GROM,EXT.BASIC	1	3.60
1015960-1122	GROM,EXT.BASIC	1	3.60
1015960-3115	GROM,EXT.BASIC	1	3.60
1041016-0006	ROM,EXT.BASIC	1	6.80
1501392-1025	ROM,EXT.BASIC	1	4.60
TOTAL FOR PARTS AVAILABLE ONLY FROM T.I.----------			25.80
ADDITIONAL CHIPS NEEDED 74LS00 AND 74LS74 TO BUILD XBASIC			
1015960-1204	EDITOR ASSEMBLER	1	3.60

NO ADDITIONAL CHIPS NEEDED FOR EDITO ASSEMBLER

T.I. WILL NOW TAKE CHARGE CARDS, AND CHARGE LOCAL SALES TAX PLUS 3.00 FOR S/H.

I'M INCLUDING THIS UPDATED INFORMATION FOR THOSE WHO WANT TO BUILD XBASIC AND EDITOR ASSEMBLER ON THE NEW ZENO BOARD WITHOUT THE DESTRUCTION OF A CARTRIDGE. IT TAKES ABOUT 2-WEEKS TO RECEIVE THE PARTS. YOU MUST CALL DEALER PARTS AT: 806 741-2265 AND ASK FOR JOE SANCHEZ.

I SOCKETED AN XBASIC CART. AND USED IT TO TEST ALL THE NEW CHIPS I RECEIVED.

INTERNAL BOARD
(ZENO BOARD)

THE INTENT HERE IS TO HELP THOSE OF YOU IN THE WEST PENN 99'ERS AS WELL AS ANY IN THE USER GROUP COMMUNITY TO GET STARTED IN THE CONSTRUCTION AND INSTALLATION OF THE BOARD. I WILL TRY TO ADDRESS SOME OF THE PITFALLS AND GIVE SOME HINTS THAT MAY BE HELPFUL. I HOPE THAT YOU REALIZE THAT EVEN THOUGH ERIC ZENO HAS HAD THIS BOARD IN DESIGN FOR ABOUT A YEAR NOW, HE LIKE MOST OF US, IS DOING THIS FOR YOUR BENIFIT, AND WILL NOT QUIT OUR JOBS TO MAKE A LIVING ON TI USERS.

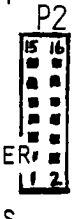
FIRST, THE BOARD DOES HAVE ONE ERROR IN THE TRACE LAYOUT, AND THAT IS THE DATA BUS ON THE CLOCK CHIP U12. MOST OF YOU WILL NEVER USE THIS CIRCUIT, AND THOSE OF YOU THAT DO, SHOULD BE ABLE TO INSTALL THE SIMPLE INVERSION OF THE EIGHT DATA LINES. I.E.: REVERSE THE PINS 15 THROUGH 22 UNDER THAT CHIP. I FEEL THAT THIS SHOULD STOP NO ONE FROM BUYING AND USING THE BOARD.

SECONDLY, THE TRACES ARE SMALL AND TIGHT IN AREAS THAT WILL GIVE A NOVICE FITS. DON'T BUILD IT YOURSELF IF IT LOOKS TO TIGHT FOR YOU AND YOUR EQUIPMENT.

THIRDLY, THE INITIAL INSTRUCTIONS ARE BRIEF, AND INADEQUATE FOR MOST OF YOU, THAT IS WHY I'M INCLUDING THESE TWO PAGES IN THE NEWSLETTER. YOU NEED HELP NOW! I HAVE BUILT TWO AND SINCE I DID THEM WITHOUT INSTRUCTIONS, I FEEL THAT YOU SHOULD DO MUCH BETTER WITH A LITTLE HELP.

DECIDE WHAT PORTION YOU WISH TO BUILD FIRST. ATTEMPT AND GET ONE CIRCUIT WORKING AT A TIME. DO NOT FULLY SOCKET THE ENTIRE BOARD. SOCKET ONLY THE CIRCUIT YOU WILL NEED FIRST, SUCH AS THE 32K CIRCUIT. MAKE UP THE HARNESS FROM P2 TO THE CPU BOARD, SOLDER THE BOARD TO THE GROM CONNECTOR (SEE PAGE 6), AND BEFORE YOU PLUG IN P2 POWER UP THE CPU. IF ALL SEEMS WELL, THEN PLUG IN P2, THEN PLUG IN THE 32K MEMORY CHIP (FOR EXAMPLE). IF ALL IS STILL WELL, THEN RUN A MEMORY TEST BY LOADING A PROGRAM THAT USES EXPANSION MEMORY OR BY RUNNING A MEMORY DIAGNOSTIC. IF A STEP FAILS, DON'T GO ON , BUT GO BACK AND CHECK FOR A SHORT OR CHECK TO SEE IF P2 HARNESS IS WIRED CORRECTLY.

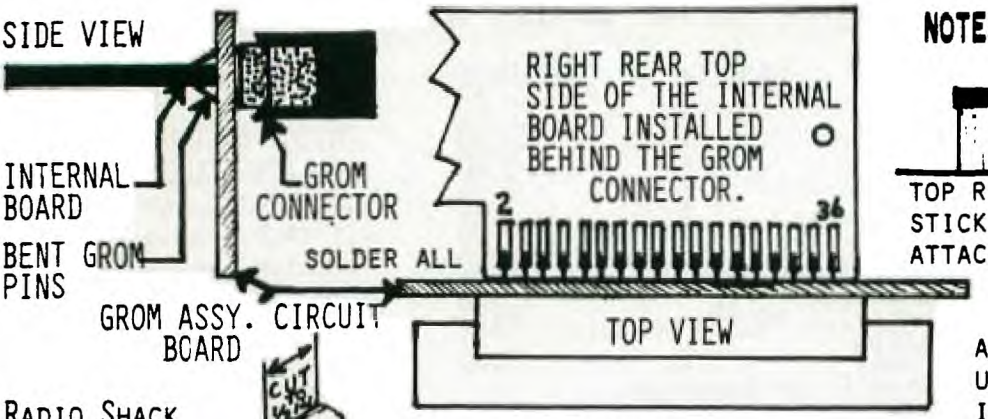
HERE IS ANOTHER AREA OF CONFUSION. THE P2 CHART ON P. 7 OF ERIC'S INSTRUCTIONS DOESN'T ADHERE TO THE PIN PROTOCOL FOR THE CONNECTOR, THEREFORE USE THE CHART AT THE RIGHT, AND ON THE ASSEMBLY DRAWING ON P. 9 OF INSTRUCTIONS CHANGE THE PIN NUMBERING SCHEME TO THAT SHOWN AT THE RIGHT ALSO. THIS WILL PROVIDE YOU WITH A MEANS TO ASSEMBLE A 16-WIRE HARNESS WITH A 16-PIN RIBBON CABLE CONNECTOR TO MATE WITH A 16-PIN DOUBLE ROW HEADER AND HAVE EVERYTHING COME OUT SO THAT THE WIRES ARE IN ORDER AND EASY TO COUNT AND MATCH CONVENTION.



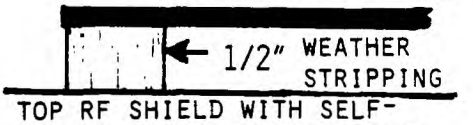
THE SPEECH SYNTHESIZER SCHEMATIC HAS SEVERAL ERRORS INCLUDING CR1 IS SHOWN BACKWARDS, THE ANODE SHOULD GO TO GROUND, AUD P2-8 SHOULD READ P2-10 (UNTIL YOU MAKE CORRECTIONS TO P2 CONN. CHART) AND RDY P2-9 SHOULD READ P2-4 AGAIN UNTIL YOU CHANGE THE P2 CONN. CHART. CR1 AND C2 MUST BE INSTALLED WITH CORRECT POLARITY OBSERVED SO TO HELP, PUT A PLUS SIGN TO LEFT OF C2 ON ASSEMBLY DRWG. AND ALL "+" "-" REPRESENT THE CATHODE SIDE OF DIODES HERE.

P2 CONNECTOR
(CORRECTED VERSION)

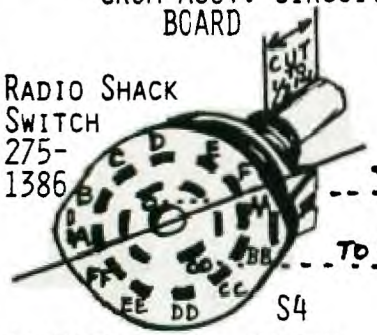
P2	TERM	USE	CPU CONN.
1	0407	32K	U504 P. 7
2	00	CK/CA	U504 P. 3
3	RDY	SPCH	U506 P. 3
4	01	CK/CA	U504 P. 2
5	SBE	SPCH	U506 P. 8
6	02	CK/CA	U504 P. 1
7	RST	SPCH	U508 P. 6
8	SPARE		
9	AUD	SPCH	R510 RIGHT
10	MEMEN-	CK/CA	U504 P. 4
11	SPARE		
12	0414	32K	U504 P.14
13	SPARE		
14	0410	32K	U504 P.10
15	SPARE		
16	0409	32K	U504 P. 9



NOTES ON THE INTERNAL BOARD (ZENO BOARD) BY JFW



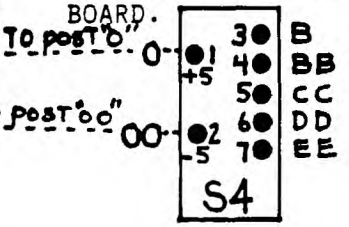
TOP RF SHIELD WITH SELF-STICKING WEATHER STRIPPING ATTACHED. BOARD RESTS ON THIS.



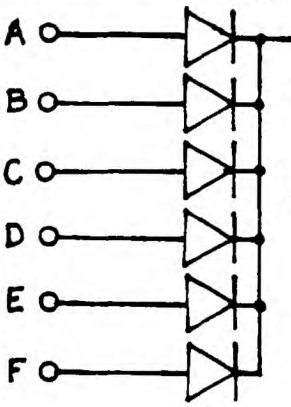
RADIO SHACK SWITCH 275-1386

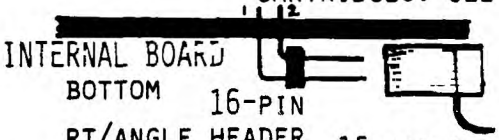
CARTRIDGE SEL. SWITCH

SW. CONNECTIONS ON BOARD.



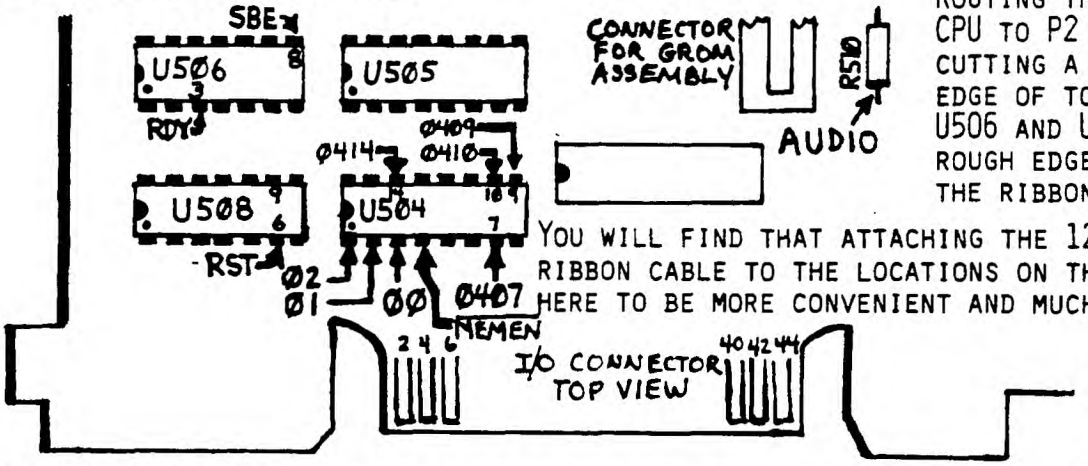
THE SIX LEDS BELOW ARE AN EXAMPLE OF LED INDICATOR USAGE TO INDICATE THE ONE INTERNAL CARTRIDGE SELECTED WHEATHER IT IS THE XBASIC, OR ANY GROM. YOU WILL NOTE THAT THE INTERNAL BOARD HAS ONLY 3 ADDITIONAL GROM SOCKETS BUT I HAVE 6 SHOWN. THE ONE ON "A" POSITION SHOWS ALL INTERNAL ARE DISABLED. THE OTHER 5 ARE XB AND 4 GROM CARTRIDGES. SEE NOTE 1





16-PIN FEMALE RIBBON CABLE CONNECTOR WITH 16-WIRE RIBBON CABLE ATTACHED

THE SWITCH S4, THE SWITCH CONNECTIONS AND THE LED DRAWING ON THE RIGHT CAN ALL BE USED TO SELECT AND DESELECT AS WELL AS INDICATE WHICH OF THE CARTRIDGES OR GROM PORT IS IN USE AT ANY ONE INSTANT. CONNECT WIRES FROM THE POSTS ON S4 INDICATED BY LETTERS A-F AND BB-FF. SEE NOTE ON HOW TO ADD A FOURTH GROM CARTRIDGE WHICH WILL USE FF ON S4. JUST TRUST ME THIS WORKS! EXAMPLE: ATTACH A WIRE ON POST B OF S4 AND THE SAME WIRE TO B ON INTERNAL BD. S4 LOCATION 3 (B) AND ALSO TO LED AT TERMINAL B. ATTACH A WIRE FROM BB ON S4 TO BB ON INTERNAL BD. S4 LOCATION 4 (B). THIS WILL MAKE THE SECOND POSITION ON THE ROTARY SWITCH S4 ACTIVATE XBASIC AND LIGHT THE SECOND LED. THE FIRST LED WILL BE USED TO LET YOU KNOW THAT NONE OF THE INTERNAL CARTRIDGES ARE ENABLED SO THAT A CARTRIDGE CAN BE INSERTED IN THE GROM PORT.



ROUTING THE RIBBON CABLE FROM CPU TO P2 CONN. CAN BE DONE BY CUTTING A 1/4" SLOT FROM FRONT EDGE OF TOP RF SHIELD OVER THE U506 AND U505 CHIPS. TAPE THE ROUGH EDGES TO PREVENT CUTTING THE RIBBON CABLE.

YOU WILL FIND THAT ATTACHING THE 12 WIRES USED FROM P2 RIBBON CABLE TO THE LOCATIONS ON THE CPU BOARD LISTED HERE TO BE MORE CONVENIENT AND MUCH SAFER.

I HOPE THAT THESE DRAWINGS AND NOTES WILL AID ALL THOSE WHO PURCHASED AN INTERNAL BOARD TO CONSTRUCT IT AND ENJOY IT SOONER WITHOUT MUCH TROUBLE. BELOW ARE NOTES:

NOTE 1. TO ADD A 4TH GROM, PIGGY-BACK IT (UP TO TWO HIGH) ON ANOTHER GROM PIN FOR PIN EXCEPT PIN 14. ATTACH A WIRE FROM PIN 14 OF THE 4TH GROM TO POST FF ON S4.

NOTE 2. DO NOT INSTALL LEDS WITHOUT A 200 OHM RESISTOR IN SERIES.

NOTE 3. THE SPEECH SYNTHESIZER HAS TWO ERRORS, BELOW U1 AUD P2-8 SHOULD BE P2-10 AND BELOW U2 RDY P2-9 SHOULD BE P2-4. (ERROR ON SCHEMATIC)

NOTE 4. MORE LATER

JOHN F. WILLFORTH 10-27-89

Introducing A New Dimension To The TI World

RAMBO is a special hardware/software expansion kit designed for the TI99/4A and MYARC GENEVE 9640 computer systems to upgrade HORIZON ramdisks. RAMBO is based on a special chip which is fully software and hardware compatible with all HORIZON ramdisks from the first HRD to the latest 3000 series.

The current HORIZON was designed mainly to be a randisk. Its RAM was based at >4000 (TI99 DSR SPACE) with a 6K Main DSR for the ROS, etc. and 2K pages of RAM to allow reading/writing of sectors. This was fine for ramdisk operations but for writing programs which really executed from the ramdisk memory its was not easy. The program had to be divided into modules of 2K each and could not access other drives, printers, etc. since only one DSR can be turned at a time. Due to this, many software developers including OPA dropped the idea of writing large programs which would run directly off the HORIZON ramdisk.

OPA has now broken this barrier in the TI world by designing a complex chip and PCB which plugs into a HORIZON card and allowing the HORIZON to have two completely different memory paging and access modes. We named this unit RAMDOM-ACCESS-MEMORY-BANK-OPERATOR or RAMBO for short.

With RAMBO installed in your HORIZON you will be able to partition the RAM onboard between RAMDISK and PROGRAM space, allowing you to run new TI or GENEVE programs using this extraRAM as program space, which could be as large as your ramdisk.

RAMBO adds a whole new paging system to the HORIZON which gives the programmer an 8K Main DSR RAM (First 6K reserved for the ROS) at the normal >4000 space but now instead of tiny 2K pages of RAM at the >6000 (TI99 Cartridge space), RAMBO also makes the DSR RAM on/off control independent of the 8K page control. This means the programmer can write large programs in easy-to-handle 8K blocks and access any DRS without using any of the standard 32K CPU RAM.

RAMBO does all this on a tiny 1" x 1" PCB with two special chips. OPA has designed RAMBO to be easily installed in any HORIZON model. All the parts including the six jumper wires come already assembled on the PCB. Thus all the HORIZON owner has to do is plug in the PCB and solder six wires in place. After installation, the HORIZON card works the same to all versions of ROS. Being so, RAMBO is fully software and hardware compatible with all hardware configurations and programs currently compatible with the HORIZON ramdisk.

Included in the RAMBO kit is a diskette containing some sample programs, source code, programming tuitorial, RAM tester, and many other useful utilities. Coming soon from OPA is a new enhancedROS designed to bring out all the features of RAMBO, and a programming newsletter on the latest ideas, etc. All of the above is included in the purchase price of RAMBO.

Price $45.00 US plus $4.50 for shipping. Canadian residents: same price Candadian, Ontario residents please add PST., payable in Money Order or check. (Prices subject to change).

For more information contact:

OPA, Oasis Pensive Abacutors
432 Jarvis St., Ste. 502
Toronto, Ont.,M4Y-2H3,CANADA

or contact Gary Bowser (416)960-0925

Oasive Pensive Abacutors
Specializing in 9900 based Software and Hardware
Home of the Phoenix 2001 series of software

TI-ARTIST FONTSCAN BY L. DORAISE, OF THE OTTAWA U.G.

```
100 REM ** TI-ARTIST FONTSCA
N / L.Dorais, Ottawa U.G) /A
pril 1989
110 ON ERROR 430 :: CALL CHA
R(142,"000000FF",143,"007E42
5A5A5A427E")
120 B$=RPT$(" ",8):: L$=RPT$
(CHR$(142),28):: LD$=B$&SEG$
(L$,1,12):: L$=B$&SEG$(L$,1,
20):: F$="1."
130 GOTO 150 :: A$,B$,C$,DT$
,F$,LC$,P$,SB$,UC$,A,C,DT,HB
,K,LB,LC,P,R,RS,S,SB,UC,V,X,
Y
140 CALL HCHAR :: CALL KEY :
: CALL CHARSET :: CALL ERR !
@P-
150 DISPLAY AT(6,1)ERASE ALL
:"UPPERCASE":L$: :L$: :"LOWE
RCASE":L$:L$: :LD$:"DIGITS
":LD$: :LS$:"OTHERS":CHR$(14
3)&"=space":LS$
160 DISPLAY AT(1,1):"SCAN WH
ICH FONT?": :"DSK"&F$ :: CAL
L CHARSET :: UC$,LC$,DT$,SB$
=""
170 ACCEPT AT(3,4)SIZE(-12)B
EEP:F$ :: F$="DSK"&F$
171 IF POS(F$,"/CH",6)>0 THE
N GOSUB 423 :: GOTO 280
180 IF POS(F$," F",6)=0 THEN
 F$=F$&" F"
190 OPEN #1:F$,INPUT :: UC,L
C=4 :: DT,SB=12 :: RS=21 ! d
isplay column
200 ! ** scan file **
210 LINPUT #1:B$ :: IF EOF(1
)THEN 280
220 IF LEN(B$)>1 THEN 210 EL
SE A=ASC(B$)! found a char.(
LEN=1)
230 IF A>=65 AND A<=90 THEN
CALL HC(8,UC,A,UC$):: IF A<>
65 THEN 210 ELSE GOSUB 350 :
: GOTO 210 ! upper case; if
A, draw it
240 IF A>=97 AND A<=122 THEN
 CALL HC(13,LC,A,LC$):: GOTO
 210 ! lower case
250 IF A>=48 AND A<=57 THEN
CALL HC(17,DT,A,DT$):: GOTO
210 ! digits
260 IF A=32 THEN A=143 ! spa
ce shows as a square on scre
en
270 CALL HC(RS,SB,A,SB$):: I
F SB<30 THEN 210 ELSE SB=12
:: RS=22 :: GOTO 210
280 CLOSE #1 :: DISPLAY AT(2
4,2)BEEP:"[A]NOTHER  [P]RINT
  [Q]UIT" ! end
290 CALL KEY(3,K,S):: IF S=0
 OR K<>65 AND K<>81 AND K<>8
0 THEN 290
300 IF K=65 THEN F$=SEG$(F$,
4,2):: GOTO 150 ELSE IF K=81
 THEN END
310 OPEN #1:"PIO" :: B$="
 " :: C$=CHR$(14)! print
320 PRINT #1:B$&B$&"  FONT:
 "&C$&SEG$(F$,6,10): :B$&"UP
PER CASE:  "&UC$:B$&"LOWER C
ASE:  "&LC$:B$&B$&"DIGITS:
"&DT$:B$&B$&"OTHERS:  "&SB$
330 PRINT #1:"":"":"" :: GOT
O 280
340 ! ** sub draw "A" **
350 DISPLAY AT(1,19)BEEP:"A>
" :: LINPUT #1:A$ :: C=VAL(S
EG$(A$,1,1)):: R=VAL(SEG$(A$
,3,1)):: K=127
360 FOR X=1 TO R :: FOR Y=1
TO C :: LINPUT #1:A$ :: S=1
:: C$=""
370 P=POS(A$,",",S):: IF P=0
 THEN P=LEN(A$)+1
380 V=VAL(SEG$(A$,S,P-S))::
IF V=0 THEN C$=C$&"00" :: GO
TO 400
390 HB=INT(V/16):: CALL CBYT
E(HB,C$):: LB=V-16*HB :: CAL
L CBYTE(LB,C$)
400 S=P+1 :: IF S<=LEN(A$)TH
EN 370
410 CALL CHAR(K,C$):: CALL H
CHAR(X,Y+23,K):: K=K+1 :: IF
 K=142 THEN K=91
420 NEXT Y :: NEXT X :: RETU
RN
422 ! ** sub C.S.D.G. **
423 OPEN #1:F$,INPUT ,INTERN
AL,VARIABLE 254 :: INPUT #1:
A,C,P,R
424 IF A<28 THEN 428 ELSE IF
 A>44 THEN 425 ELSE 426
425 LC$="abcdefghijklmnopqrs
tuvwxyz" :: DISPLAY AT(13,2)
:LC$
426 DT$="0123456789" :: DISP
LAY AT(17,10):DT$
427 SB$="!@.,"":-" :: DISPLA
Y AT(21,11):SB$
428 UC$="ABCDEFGHIJKLMNOPQRS
TUVWXYZ" :: DISPLAY AT(8,2):
UC$
429 CALL HCHAR(21,12,143)::
SB$="sp "&SB$ :: RETURN
430 CALL ERR(X,Y,HB,LB):: IF
 X=130 THEN ON ERROR 430 ::
RETURN 170 !if error is I/O:
 go back to accept filename
440 DISPLAY AT(24,1)BEEP:"ER
ROR:";X;" in LINE";LB :: STO
P ! other errors
450 !@P+
460 SUB HC(R,X,A,A$):: CALL
HCHAR(R,X,A):: IF A<>143 THE
N A$=A$&CHR$(A)ELSE A$="sp "
&A$
470 X=X+1 :: SUBEND
480 SUB CBYTE(X,C$):: IF X<1
0 THEN C$=C$&CHR$(X+48)ELSE
C$=C$&CHR$(X+55)
490 SUBEND
```

A LOT OF FONTS ARE AVAILABLE TO TI-ARTIST AND C.S.G.D. FANS, BUT ONLY IF YOU KNEW WHICH CHARACTERS WERE IN THE FONT, AND WHAT THEY LOOKED LIKE, WITHOUT HAVING TO LOAD THE GRAPHIC PROGRAM AND TYPE THE WHOLE RANGE JUST TO SEE! PETER HODDIE'S FONT WRITER AND GRAPHIC EXPANDER HAVE THE SCAN OPTION, BUT PERHAPS YOU DON'T OWN THEM; AND THEY HAVE A DRAWBACK: ALL CHARACTERS BEING LISTED TOGETHER, THE SYMBOLS AND PUNCTUATION CHARACTERS ARE HARD TO SPOT. SO I WROTE THIS QUICKIE, TO DISPLAY THE CHARACTERS IN FOUR CATEGORIES: UPPER CASE, LOWER CASE, DIGITS, AND OTHERS (SYMBOLS AND PUNCTUATION). THE LETTER "A" IF PRESENT, IS DRAWN ON THE SCREEN IN ACTUAL SIZE.

THE DIS/VAR 80 FONT FILE IS READ LINE BY LINE; WHEN A SOLE CHARACTER IS ENCOUNTERED IT MEANS "THIS IS THE CHARACTER DEFINED NEXT"; LINE 220 WILL TAKE IT'S ASCII VALUE A, AND THE SUB HC WILL SHOW IT ON THE SCREEN, IN THE APPROPRIATE CATEGORY; IT WILL ALSO BE ADDED TO A STRING FOR THE PRINTOUT. IF THE CHARACTER IS AN "A", THE PROGRAM JUMPS TO A SUBROUTINE.

TO DRAW THE "A", WE LINPUT THE NEXT LINE IN THE FILE: IN LINE 320, WE EXTRACT THE TOTAL COLUMNS AND ROWS; WE DON'T NEED THE THIRD VALUE IN THE LINE, "PIXEL JUMP". EACH SUBSEQUENT LINE CONTAINS THE DECIMAL EQUIVALENTS OF THE HEX BYTES FOR ONE CHARACTER DEFINITION, SEPARATED BY COMMAS. THESE VALUES ARE READ AND TRANSFORMED INTO THEIR HEX VALUE BY CALL CBYTE; WHEN THE STRING C$ IS COMPLETE, WE CALL CHAR A CHARACTER ABOVE 127 AND CALL HCHAR IT IN THE UPPER CORNER OF THE SCREEN (FOR VERY BIG CHARACTERS, COUNTER K REVERTS TO 91 UPON REACHING CHARACTER 142, ALREADY USED FOR THE SCREEN DISPLAY).

WHEN ALL THE FILE HAS BEEN READ, YOU CAN SCAN (A)NOTHER FILE, (P)RINT A LISTING (MINUS THE GRAPHIC "A"), OR (Q)UIT. IF YOU WISH TO GET A GRAPHIC DUMP OF THE SCREEN, WITH THE "A", YOU CAN USE AN ASSEMBLY SCREEN DUMP AT THIS POINT (CALL LOAD THE FILE BEFORE LINE 150; CALL LINK REPLACES 310-320).

(I CHANGED THIS PARAGRAPH TO REFLECT THE FACT THAT THE PROGRAM LINES TO SCAN C.S.G.D. FONTS ARE ALREADY ADDED. [WOODY]). IN C.S.G.D. FONTS THE "A" WILL NOT BE DISPLAYED, AS I DON'T KNOW YET HOW IT'S DONE! THESE FONTS FOLLOW THE SAME PATTERN: UC ONLY, UC/DIGITS /OTHERS (ALWAYS THE SAME ONES), UC/LC/DIG/OTHERS; THE VALUE A, THE TOTAL NUMBER OF CHAR. IN THE FILE TELLS THE STORY. WHEN YOU WISH TO SCAN A C.S.G.D. FONT YOU MUST ADD THE "/CH" SUFFIX TO WARN TEX

ILLITERACY & COMPUTERS. . .

When I was a kid in school, English was boring, composition was impossible, and spelling was tiring. Girls, sports and motorcycles were a lot more important - then. Now, no single skill I possess affects the quality of my life more often or more significantly than my ability to read and communicate.

Use of computers to teach basic reading skills to adults is expected to be a growing market as community colleges, libraries, and major employers attempt to reach out to the millions of people in the U.S. who can read, but are functionally illiterate.

The life of the functional illiterate is one of "getting by". It means being able to read your youngest child a bedtime story, but not being able to help the oldest with her homework. It means buying everything assembled because you can't understand the instructions. It means being able to do your job but not being able to apply for a better one. It means having other people do your taxes and your insurance claims, and either taking every contra[illegible] to a lawyer or leaving yourself open to being "taken".

For most of these adults, computer aided instruction offers the[illegible]n opportunity to work at their own level, and at their own pace. [illegible] of speech synthesizers allows them to begin learning at the most basic of reading levels, and the keyboard or mouse lets them separate the skill of reading from the skill of writing. Unlike standard testing procedures, computers also offer immediate feedback to the learner, reporting the students pogress and making the sessions more productive.

It is the psychology, rather than the technology, of computer aided instruction, however, that may contribute most to its success. For many adults, the idea of having to be tutored, especially by someone younger, is too bruising to the ego, and prevents them from entering traditional remedial reading programs.

Dr. John Henry Martin, a leading developer of computer software for adult remedial training offered the following insight on a recent edition of "The Computer Chronicles."

> *"Coming to the computer without the intervention of an adult means that, in effect, they are teaching themselves through the vehicle of the computer. This seeming dehumanization, which some people decry as a technological intrusion, as a matter of fact, is very therapeutic because, you see, the (psychological) damage to them has been done by other people."*

Adults using Martin's program for 20 weeks of self-instruction have shown an average increase in reading skills of 80 per cent, or two and a half school years.

In Richmond, California, the public library has experienced similar results using Apple II series computers and high school remedial programs. Susan McCallister, head of the library's adult literacy project called "LEAP", hopes the program spreads to other adult learning centers nationwide.

CONTINUED ON PAGE 10

ILLITERACY & COMPUTERS....(CONTINUED FROM PAGE 9)

In LEAP, computers were originally added to aid the human tutors in instruction -- a kind of electronic blackboard and course book. When proposed, tutors resisted the idea of using computers, probably because they themselves would have to become students to learn how to operate them. Students, however, were more receptive. Some suggest the glamour of using a technology the students never believed would be available to them, in itself, boosted the adults self-esteem and self-confidence.

For whatever reason, students moved on to independent use of the computers much sooner than project designers anticipated. For projects relying upon the limited availability of volunteer tutors, this independent use by students alleviates scheduling and human resource problems.

While I am not aware of any adult literacy projects using computers in the Siouxland area, I do know that the libraries and school systems do have the equipment needed to promote adult literacy programs. For that matter, so do most members of our users' group.

The TI99/4A, with its speech synthesizer and cartridge based educational software is a simple to use, yet powerful, educational tool. What better use for that spare keyboard than to help improve the quality of life of someone you know.

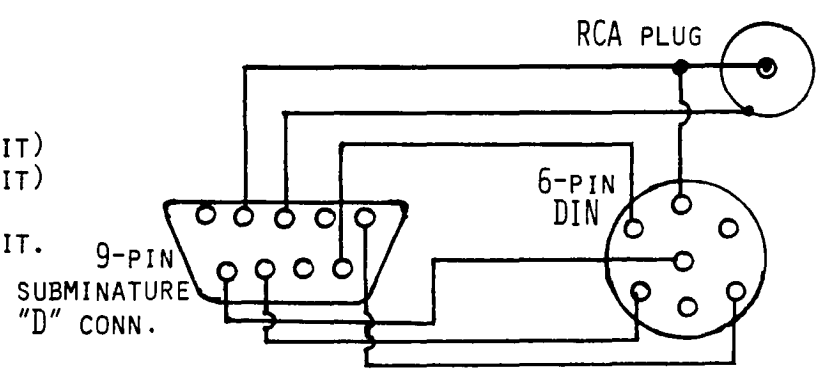
REQUEST FOR ASSISTANCE USING "**TI-SORT** WITH **BASIC FILES**".....

KEN FARR, OF 732 GARDEN CITY DRIVE, MONROEVILLE, PA. 15146 IS REQUESTING ASSISTANCE GETTING TI-SORT TO SORT FILES THAT WERE CREATED AND WILL BE USED BY BASIC. ANYONE WHO CAN HELP KEN MAY GET IN TOUCH WITH HIM AT THE ABOVE ADDRESS.

I KNOW THAT YOU WOULD LIKE A 50 PAGE LETTER THIS MONTH, BUT THE POSTAGE WOULD BE THE REAL PROBLEM. I HAVE AN ARTICLE BY SCOTT COLEMAN THAT WILL PROBABLY BE IN THE DECEMBER NEWSLETTER ON "FORTH PROGRAMMING: SPEEDING UP FLOATING POINT USING MULTI-ENTRY ASSEMBLY ROUTINES". AS YOU CAN SEE THAT WITH THE TITLE LIKE THAT THE ARTICLE MUST REALLY BE SOME THING! NEXT MONTH. I ALSO HAVE TWO SCHEMATICS FOR AN 8-BANK SUPERCART AND A PARALLEL PRINTER PORT THAT I WOULD LIKE TO CHECK OUT BEFORE I PRINT THEM HERE. THE SUPERCART SHOULD BE OK, BUT THE PARALELL PORT USES 2- 2732 EPROMS AND A 9901 CHIP. IT WOULD BE NICE IF I COULD REPLACE THE 2732S WITH LOW POWER STATIC RAM FOR THOSE WITHOUT EPROMMERS AND ALLOW YOU TO LOAD THE RAM WITH THE DSR AS PART OF THE NORMAL BOOT UP OF YOUR SYSTEM THUS GIVING YOU A LOW COST PROGRAMMABLE PARALLEL PORT FOR INSTALLATION INSIDE OR EXTERNAL YOUR SYSTEM. I HOPE THAT YOU CAN TOLERATE THE TWO PAGES SPENT ON THE ZENO BOARD BECAUSE TIME IS IMPORTANT TO THOSE WHO BOUGHT IT. I'M SURE MANY OF YOU WILL BE PLEASED TO KNOW THAT A **MIDI** INTERFACE WILL BE AVAILABLE IN THE NEXT THREE TO FOUR MONTHS AND IT WILL BE MADE AVAILABLE BY ONE OF THE RELIABLE VENDORS OF TI SUPPORT ITEMS, BUT ONE THAT YOU WILL NOT EXPECT TO BE COMING OUT WITH A HARDWARE ITEM.

RGB PINOUT FOR GENEVE (9640) TO MAGNAVOX MODEL 8CM515 MONITOR BY RONALD A. SANDERS

PARTS:
1- 276-1428 "D" SUBMIN. CONN.
1- 2744-020 6-PIN DIN PLUG
1- 274-321 RCA PHONO PLUG
1- 6-CONDUCTOR CABLE (LENGTH TO SUIT)
1- 2-CONDUCTOR CABLE (LENGTH TO SUIT)
ALL AVAILABLE AT RADIO SHACK
DRAWING VIEW AS YOU WOULD WORK ON IT.



ADD A DIGITIZING PAD TO YOUR TI BY WAY OF THE RS232.....JOHN F. WILLFORTH

THE 99'ER MAGAZINE JULY/AUGUST 1981 ISSUE (ISSUE NO. 2) HAD AN ARTICLE THAT HAS BEEN LONG FORGOTTEN AND LOST IN THE DUST. IT DEALT WITH THE INSTALLATION OF A HI PAD TM DIGITIZER TO THE 99/4 AND 4A RS232 PORT. I BELIEVE THAT THE CALCOMP 2000 AND OTHER SIMILAR BUT ALSO INTELLIGENT DATA TABLET/DIGITIZERS CAN BE USED, AND MOSTLY NO CHANGES BEING MADE TO THE PROGRAM LISTED BELOW. THE DIGITIZING TABLET IS AN INPUT DEVICE THAT CONVERTS GRAPHIC, TABULAR, OR MENU TYPE INFORMATION INTO DIGITAL VALUES USEABLE BY THE COMPUTER. BY TOUCHING A PEN-LIKE STYLUS TO ANY POSITION ON A MAP, DIAGRAM, CHART, MENU, OR OTHER GRAPHIC PRESENTATIONRESTING ON THE TABLETS SURFACE, THE COORDINATES OF THAT POSITION ARE TRANSFORMED INTO THEIR DIGITAL EQUIVALENTS, AND SENT BACK TO THE COMPUTER, WHERE THE APPROPRIATE SOFTWARE CONVERTS THE DATA INTO MEANINGFUL INFORMATION INPUT. A CROSS-HAIR SIGHT WITH A FIRE BUTTON CAN ALSO BE USED FOR MORE ACCURATE POSITIONING ON THE TABLET'S SURFACE. FOR THOSE OF YOU WHO MAY HAVE ACCESS TO AN RS232 PORTED DIGITIZER, TRY THE FOLLOWING, AND I'LL TRY TO HAVE MORE FOR YOU SHORTLY. M.L. BE SURE TO SET CHARACTERISTICS IN DIGITIZING TABLET! WP99

Figure 1.

Cable Connection Diagram for 4800 BAUD in POINT Mode

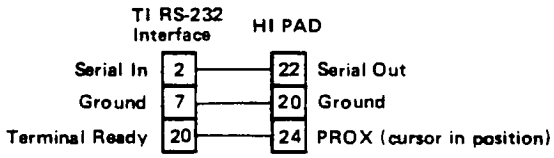


Figure 2.

Where C_B
- = 0, indicates the first coordinate of a switched stream.
- = 1, indicates successive coordinates of a switched stream.
- = 2, indicates a coordinate of point mode.
- = 3, indicates a coordinate of stream mode with the cursor button released.
- = 4, indicates a coordinate of stream mode with the cursor button depressed.

Where ± = an ASCII coded + or −.
Where X or Y = ASCII coded digits 0 - 9.
Where C_R = ASCII coded carriage return.
Where L_F = ASCII coded line feed.

```
100 REM ********************
110 REM * HI PAD DECODER *
120 REM ********************
130 REM 99'ER VERSION 7.81.1XB
140 REM BY W.K. BALTHROP
150 REM
160 REM
170 OPEN #1:"RS232/2.BA=4800.DA=8".
    FIXED 15
180 INPUT #1:C1$
190 DISPLAY AT(5,3):"DIGITIZED
    CODE:"
200 FOR X=1 TO 15
210 DISPLAY AT(6,5+X)SIZE(1):
    CHR$(ASC(SEG$(C1$,X,1))-128)
220 NEXT X
230 GOTO 180
```

EXPLANATION OF THE PROGRAM
HI PAD DEMO

Line Nos.

170	OPEN RS-232 port.
180	Set up variables.
190-250	Display option page & INPUT choice.
260-280	Branch to routine specified.
290-310	Instruction and control.
320-360	Instruction and control for digitizing end of line.
370	What type of linear unit will be used?
380	How many of the units are there in the calibration line you plotted?
390-400	Calculate units per inch; GOTO title page.
410-420	Instruction & control for digitizing beginning of line.
430-510	Print instructions to digitize the line. Update line length and print on screen.
520-590	Instruction and control to calculate total area.
600-640	Calculate total area and display.
650-670	Calculate distance between two points.
680-710	Define X, Y coordinates.
720-790	Input data from digitizer pad.
800-830	Assemble data from pad into proper ASCII characters. (subtract 128 ASCII).

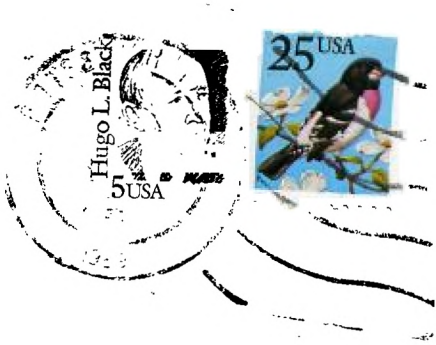
```
100 REM ***************
110 REM * HI PAD DEMO *
120 REM ***************
130 REM 99'ER VERSION 7.81.1XB
140 REM BY HOUSTON INSTRUMENT
150 REM
160 REM
170 OPEN #1:"RS232/2.TW.BA=4800.
    DA=8".FIXED 15
180 UPI=1 :: V$="INCHES"
190 CALL CLEAR
200 DISPLAY AT(3,3):"MENU: SELECT
    ONE OF THE            PROGRAMS."
210 DISPLAY AT(7,3):"1. CALIBRATE."
220 DISPLAY AT(9,3):"2. DISTANCE."
230 DISPLAY AT(11,3):"3. TOTAL
    AREA."
240 DISPLAY AT(24,6):"YOUR CHOICE?"
250 ACCEPT AT(24,18)BEEP:C :: IF
    C=0 OR C>3 THEN 250
260 CALL CLEAR
270 ON C GOTO 290,410,520
280 GOTO 250
290 DISPLAY AT(3,3):"PLACE
    DIGITIZER AT BEGINNING OF
    CALIBRATION LINE
    AND     DIGITIZE."
300 GOSUB 730
310 GOSUB 680 :: X2=X :: Y2=Y
320 DISPLAY AT(8,3):"NOW PLACE THE
    CURSOR AT THE END OF THE LINE
    AND DIGITIZE"
330 GOSUB 730
340 GOSUB 680
350 X1=X2 :: Y1=Y2 :: GOSUB 650
360 IPU=D
370 DISPLAY AT(12,3)BEEP:"WHAT TYPE
    OF UNIT IS THIS   CALIBRATION
    BASED UPON?" :: ACCEPT
    AT(15,3):V$
380 DISPLAY AT(17,3)BEEP:
    "HOW MANY ";V$;" DOES THE";"
    CALIBRATION LINE REPRESENT?" :
    : ACCEPT AT(20,3):A
390 UPI=A/D
400 GOTO 190
410 DISPLAY AT(3,3):"NOW DIGITIZE
    THE BEGINNING  OF THE LINE."
420 GOSUB 730 :: GOSUB 680 :
    : X1=X :: Y1=Y
430 DISPLAY AT(5,3):"BEGIN USING
    THE CURSOR TO   DIGITIZE
    THE LINE."
440 DISPLAY AT(8,3):"TOTAL
    DISTANCE:"
450 DISPLAY AT(12,3):"WHEN
    FINISHED SELECT ""M"" TO
    RETURN TO MENU."
460 GOSUB 730 :: GOSUB 680 :
    : GOSUB 650
470 CALL KEY(0,K,S):
    : IF S=ASC("M")THEN 190
480 X1=X :: Y1=Y
490 TD=TD+D*UPI
500 DISPLAY AT(8,18):ABS(TD);V$
510 GOTO 460
520 TA=0 :: DISPLAY AT(3,3):
    "DIGITIZE ALONG OUTER LINE   OF
    AREA TO BE COMPUTED."
530 DISPLAY AT(8,3):"HIT THE ""A""
    KEY WHEN          FINISHED."
540 GOSUB 730 :: GOSUB 680 :
    : XP=X :: YP=Y :: YS=Y :: XS=X
550 GOSUB 730 :: GOSUB 680 :
    : X=X :: Y=Y
560 A=((YP+Y)/2)*(XS-XP)
570 TA=TA+A
580 YP=Y :: XP=X
590 GOTO 550
600 TA=TA+((YP-YS)/2)*(XS-XP)
610 DISPLAY AT(6,3):"TOTAL AREA:";
    ABS(TA*UPI^2);"SQUARE";V$
620 DISPLAY AT(20,3):"HIT THE ""M""
    KEY TO SELECT   THE MENU."
630 ACCEPT AT(22,12):I$ :: IF
    I$<>"M" THEN 630 ELSE CALL
    CLEAR :: GOTO 200
640 END
650 REM SUBROUTINE TO COMPUTE
    DISTANCE BETWEEN POINTS
    (X1,Y1)&(X,Y)
660 D=SQR(((X1-X)^2)+((Y1-Y)^2))
670 RETURN
680 REM SUBROUTINE TO DEFINE X,Y
    COORDINATES
690 X=VAL(SEG$(D$,3,5))/1000
700 Y=VAL(SEG$(D$,9,5))/1000
710 RETURN
720 REM SUBROUTINE TO ASSEMBLE
    STRING
730 D$=""
740 INPUT #1:C1$
750 CALL KEY(0,K,S)
760 IF K=ASC("M")THEN 190
770 IF K=ASC("A")THEN 600
780 GOSUB 800
790 RETURN
800 FOR Z=1 TO 15
810 D$=D$&CHR$(ASC(SEG$(C1$,Z,
    1))-128)
820 NEXT Z
830 RETURN
```

Zoom Flume is a new text adventure game to be used with the Adventure Module. It was written by Lynn Gardner, the co-author of Oliver's Twist. It can be obtained from Asgard Software for $7.95 in either disk or cassette version.

In this adventure, you are in your bathing suit at the water park. Want fun and excitement? Try the fast and slippery track of the five-story-high Super Slide. Speed down a twisting course on the Zoom Flume. See if you can hang onto the Tarzan Trolley. Ride the bumper boats in the lake or the waves in the wave pool. Surf's up. Enjoy!

Zoom flume

Asgard Software
P.O. Box 10306
Rockville, Md. 20850
(703) 255-3085



WEST PENN 99'ERS

% JOHN F. WILLFORTH
R.D. #1 BOX 73A
JEANNETTE, PA
15644

ISSUE NUMBER 11
NOVEMBER-1989

EDMONTON 99'ers
P.O. BOX 11983 EDMONTON
ALBERTA, CANADA, T 5J3L1

MEETING NOVEMBER 21