HERE WE GO AGAIN! You will probably note the difference in style in this issue of the newsletter from all previous issues. John Johnson, the former editor will no longer be writing the lead articles. I, Vice-president Woody Wilson, amateur writer (for sure!) will attempt to fill the void, and for now at least will be editor/publisher. I feel like the cowboy cook...gripe about the food (newsletter) and YOU get the job.

ON MAY 18TH THE TISIG and the SDCUG combined forces to participate in the Parent SIG meeting of the SDCUE (San Diego Computer-Using Educators). The subject was "Educational Public Domain Software" with Rich Andrew of Pink Panther Data Systems as principal speaker. The meeting was a disappointment to the TI'ers since the speaker did not seem to know of the vast amount of educational material available for the TI99/4A and we did not get a chance to speak. The children present congregated at our exhibit, however, and were interested in the speech capabilities of the TI.
TRITON and TENEX were MOST generous in sending a supply of catalogs for free distribution. Our sincere thanks to both companies.
Pam Woodward, Parent SIG Coordinator, talked to us after the meeting and said she wished some of the teachers using the TI99/4A could meet us.
It may be interesting to note that the El Cajon School District has 99 Apples and 4 TI's! When I taught BASIC or LOGO II at an El Cajon school for three years, I used to take my own set to the school each Tuesday. The kids loved the TI and would always write me the cutest thank you notes. That REALLY made it all worthwhile!

WALDO HAMILTON CONTINUES HIS ARTICLE on cord assemblies on pages 3, 4, and 5. To get the most out of his work you should have the May newsletter also. Read his comment at the beginning of this months article.

DO YOU HAVE A HORIZON RAMDISK? If you do perhaps you would like a method of returning to Extended BASIC from the Menu screen WITHOUT making drive #1 hunt for a LOAD program. There are several ways of doing this, but there are also some WEIRD bugs. For example, we tried using the following as #9 on our menu.. we called it XBRETURN:
100 CALL INIT :: CALL LOAD(-31952,255,255,0)
I adapted this from a program from Australia, but it has a bug that can create some VERY interesting patterns. Try this: 1. Load the program above into your Ramdisk as XBRETURN. 2. Place the name XBRETURN on the menu. (I assume you know how to do this!) 3. From BASIC, CALL MENU, then select XBRETURN. 4. Go into automatic numbering mode. (Type NUM). 5. Write a one line program such as, 100 OPEN #2:"PIO" 6. Press ENTER and when line 110 appears, press FCTN 4. 7. Now LIST the program and see what you get.
If you write longer programs or change line 100, you will get a different result. If you type NEW before you type NUM, everything will come out properly.

IF YOU USE THIS..... CALL INIT :: CALL LOAD(-31962,100,124) :: STOP ...it seems to work O.K . unless you have an I/O error and then you almost seem to go into a sort of manana land (slowing up the computer). Here again, using a NEW (or a CALL NEW with some versions of XB) before typing CALL MENU will make the program work properly. Try this:
(CONTINUED ON PAGE 2)

REPORT FOR THE SDCS
The annual election of officers for the TISIG was held at the May 17th meeting. The results of the secret ballot turned out to be a unanimous vote for the proffered slate: John Johnson, President; Woody Wilson, Vice-president; Gil Pico, Treasurer; Lutz Winkler, Secretary.

John Johnson demoed his direct connect "Poor Man's Disk Drive" (and it WORKED). Using the club'S disk library, Woody demoed some of the graphic programs on the disks from Holland to the 18 members present.

Charles Meeker, one of our new members, resigned. Sorry to see you go, Charles.

John Johnson will bring his portable unit to the June meeting and Woody will bring the monitor. No formal program has been planned. We may be able to demo some more of the new programs in the club's disk library.

(CONTINUED FROM PAGE 1)
Disconnect or disable your printer.

```
NUM
100 OPEN #2:"PIO"
110 PRINT #2:"TEST"
120                    (Press ENTER here)
RUN
FCTN 4
1/O ERROR 36 IN 110
CALL MENU
SELECT XBRETURN
```

Almost 20 seconds for cursor to return. Now repeat this, but type NEW after the I/O error appears. You will find that the cursor reappears very quickly after you select XBRETURN.

DOES ANYONE KNOW HOW TO USE the Extended BASIC II PLUS module with a Horizon ramdisk? I can not call it from the menu and it does not appear as item C. It can be used with the ram, but not through the menu. Drop me a line, please.<Woody>

THE FOLLOWING PROGRAM is excerpted from an article by Dr. Roy T. Tamashiro in the April 1988 issue of THE COMPUTER BRIDGE (ST. LOUIS 99ERS):

```
****************************************
*                                      *
*      The Word Counter                *
*   Dr. Roy T. Tamashiro               *
*                                      *
****************************************
```

The program listed below, THE WORD COUNTER, will count the exact number of words in a TI-Writer document, or other documents saved in the "Display-Variable 80" format. To get a word count of a manuscript, type the program in using Extended BASIC and save it. When you RUN the program, you must indicate whether you are working with a TI-Writer document or another D/V 80 document. The program filters out "formatter commands" as it analyzes TI-Writer files. No filtering is done on other D/V 80 files. The total word count is shown after the file has been analyzed. In addition, the number of syllabified words are given--these are words which are hyphenated at the end of one line and continued on the next line.

NOTE FROM WOODY: Lines 150 through 400 have been run through the CHECKSUM program as given in the October 1987 issue of MICROpendium. DO NOT type the ! nor the three numbers that follow it that are appended to the ends of the aforementioned lines.

```
100 !****************
110 !* WORD COUNTER *
120 !****************
130 !AUTHOR:ROY TAMASHIRO,ED
    ,D
140 !APRIL 1988
150 CALL CLEAR :: S2$=RPT$("
    ",2):: WC=0 :: HY=0 !075
160 DISPLAY AT(1,9):"WORD CO
    UNTER";TAB(9);"----------"
    :TAB(5);"1988, ROY TAMASHIRO
    !007
170 DISPLAY AT(6,1):"PRESS:"
    : :TAB(4);"1 FOR TI-WRITER F
    ILE": :TAB(4);"2     OTHER D
    /V 80 FILE": :TAB(4);"3 TO
    QUIT" !166
180 DISPLAY AT(22,7):"YOUR C
    HOICE (1-3):" :: ACCEPT AT(2
    1,26)VALIDATE("123")SIZE(1):
    C$ !147
190 ON VAL(C$)GOTO 200,200,4
    00 !177
200 DISPLAY AT(22,1):"ENTER
    FILENAME:":"DSK1." :: ACCEPT
     AT(23,4)SIZE(-12):F$ :: F$=
    "DSK"&F$ :: OPEN #1:F$ !183
210 DISPLAY AT(6,1):"Analyzi
    ng..." !106
220 LINPUT #1:A$ :: CALL HCH
    AR(0,3,32,532):: DISPLAY AT(
    8,1):A$ !109
230 IF EOF(1)<>0 AND C$="1"
    THEN 370 !242
240 IF A$="" THEN 360 !080
250 IF C$="2" THEN 280 !053
260 IF SEG$(A$,1,1)="." THEN
    360  !030
270 T=POS(A$,"^",1):: IF T>0
     THEN A$=SEG$(A$,1,T-1)&" "&
    SEG$(A$,T+1,LEN(A$)-T):: GOT
    O 270  !087
280 IF (SEG$(A$,1,1)<"!" OR
    SEG$(A$,1,1)>"~")AND LEN(A$)
    >1 THEN A$=SEG$(A$,2,LEN(A$)
    -1):: GOTO 240  !127
290 IF (SEG$(A$,LEN(A$),1)<"
    !" OR SEG$(A$,LEN(A$),1)>"~"
    )AND LEN(A$)>1 THEN A$=SEG$(
    A$,1,LEN(A$)-1):: GOTO 240
    !216
300 IF A$=" " THEN 360 !113
310 T=POS(A$,S2$,1):: IF T>0
     THEN A$=SEG$(A$,1,T)&SEG$(A
    $,T+2,LEN(A$)-1):: GOTO 310
    !077
320 FOR I=1 TO LEN(A$) !229
330 IF SEG$(A$,I,1)=" " THEN
     WC=WC+1 !218
340 IF I=LEN(A$)AND SEG$(A$,
    I,1)="-" THEN HY=HY+1 :: WC=
    WC-1 !142
350 NEXT I :: WC=WC+1 !014
360 IF EOF(1)=0 THEN 220
    !193
370 CLOSE #1 !151
380 DISPLAY AT(6,1):"TOTAL W
    ORD COUNT IS:";WC: :"INCLUDI
    NG":HY:"SYLLABIFIED WORD(S).
    "  !207
390 DISPLAY AT(22,1):"ANOTHE
    R COUNT? (Y/N)" :: ACCEPT AT
    (22,22)VALIDATE("YN")SIZE(1)
    :N$ :: IF N$="Y" THEN 150
    !246
400 CALL CLEAR :: END  !222
```

FLASH!!_____FLASH!!

Due to a mixup last month, I inadvertently handed the newsletter editor the drawings for this step of the cable series, and held the drawings you see accompanying this article. Please note that these drawings this month are for the console article, and last month's drawings for this article. My humblest apologies for any inconveniences this may have caused. It is in no way the fault of the editor. WLH.

Building a Video Cable

Note: The following is for those building a Video Cable from scratch. If you are modifying a Modulator Cable, go on to the Section on making the Monitor end of the cable. But...you may wish to refer back to this section for the signal list.

COMPUTER END OF VIDEO CABLE

First, you need to prepare the wire. The wire consists of four internal insulated wires, surrounded by a braided or spiral-wound shield layer...usually bare. Outside this is a plastic jacket to protect it and hold it all together. Refer to Figure 1.

1. Measure back from the end of this cable, about 1-1/2 inch.
2. Very carefully cut around the jacket, to avoid cutting the shield or the wires. Remove the cut piece of jacket. Here, some makers have put a fibre material to fill out the shape of the cable. If there is some, remove it, back to the jacket.
3. Separate the shield and the 4 wires. Twist the shield to look like a wire.
4. Very carefully strip each of the four wires about 1/4 inch. Twist the strands to make them neat. They will later be coated very lightly with solder to keep them from untwisting.

You will notice that the wires are color coded. If they match the TI Cable colors, so much the better. If not, match up what you can, and write down a transition for the others. Do not lose this...it will help if you have to troubleshoot or repair the cable later. These ideas will also apply to any other cables you build.

You will need to disassemble your DIN plug to install the wires. Refer to Figure 2a and 2b to see what it looks like before and after.

Here are the signals on the pins of the connector you will be using for the video cable in its original state (in the modulator):

Pin 1	Red.....Video + Power
Pin 2	Bare Copper....Ground (may have a clear sleeve added.)
Pin 3	White.....Audio
Pin 4	Clear molded...Video
Pin 5	Black.....Audio Gnd.

These colors should be adhered to if you are building a cable from scratch also, with, of course, allowances made for color differences if you use a different cable from another source. Where there are differences, write them down and keep them.

Back to making the cable. You now have the wires stripped. Very carefully "tin" just the end of each wire you have stripped. This includes the shield. It is now referred to as a wire. Tin no more than about 1/8 inch of each.
?...TIN?!?, you say? This is nothing more than applying a very light coat of solder to the wires to keep them from coming untwisted. Remember...only about 1/8 inch. We want them to stay flexible to avoid them breaking with handling.

Look at the back of your connector, where the wires will be soldered. Is the pin flat, with a hole in it? Or is it round, and hollow? This will determine how you treat the end of the wires next. Refer to Figure 2c.

A. For flat pins with holes (Type 2 Figure 2c),
   1. Using the pliers, bend the end of each wire back on itself to look like a "U". This will be SMALL.

B. For round, hollow pins (Type 1 in Figure 2c)
   1. Leave the wires as they are. They should fit into the holes if you haven't tinned them too heavily.

First....Take the plastic outer body of the DIN plug and slide it, SMALL END FIRST, down over the cable far enough to keep it out of your way. DO NOT FORGET THIS. Otherwise, you will have to unsolder the wires to get it on. Next, carefully solder the wires to their respective pins. In the case of the wires with the "U" bends, after you slide the end of the "U" through the hole (the bottom of the "U" in the hole), squeeze the "U" with the pliers to flatten it tightly on the pin, mechanically. Solder each wire as you go.
In the case of the round, hollow pins, heat the pin, and slide the wire into the hole, and remove the heat. Let it cool without moving it.

What do I mean "cool"? How cool is cool? You may have noticed that while the solder was melted, it was very shiny like a mirror. As it cools, it suddenly turns to a slightly less shiny, but is still a very light, very smooth silver color. SMOOTH is the key word here. If it looks like it is rough or "frosty", it is not a good joint. It moved while it was cooling. Simply reheat it, and let it cool again, this time avoiding any movement. It should take this time. If you're curious enough, you could look at the joint with a magnifier and see the difference between a good joint and a bad one. It is easy to see. If you are new at this though, you have nothing to compare it to, so experience is the best teacher.

As to the rough appearance of a bad joint...this is in reality, a crystalline structure the solder changed to during cooling. It has almost no mechanical strength, as it is very brittle. It will soon begin cracking, and come loose, causing problems.

After you get the wires all soldered into the connector, go back and check where each wire is. Is it in the right pin? Is it a good joint? Are any wires touching each other? If so, correct the problem.
If all is OK at this point, you can lay the metal shell halves back where you took them from, and slide the outer plastic body (also called outer shell) up over the connector to close it up. Note here there is a square hole in the body. This matches up with a small projection on the metal shell of the connector to keep the body from sliding off the connector. Turn the body so that when it is on all the way, you can see this projection in the square hole in the body. See Figure 2a (Body Retainer).

MONITOR END OF VIDEO CABLE

This end of the Video Cable is where we will use the two RCA type plugs.

We will be making two pairs of wires:

1. Video Wires
   A. Video
   B. System Ground (Braided)

2. Audio Wires
   A. Audio
   B. Audio Ground

In building this end of the cable, we prepare the cable as follows:

You will be using Heatshrink Tubing to give the cable a finished appearance, and to protect the wiring.
Cut a 1 1/2 inch piece of 1/4 inch diameter smallest that will fit over the jacket of the cable). Slide this down over the unfinished end of the cable.
Next, cut two 5 inch long pieces of 1/8 inch diameter heatshrink tube. Set these aside for later.

Now...to prepare the monitor end of the cable.

Measure back 6 inches from the end. Very carefully cut through the jacket as you did on the other end. Again; avoid cutting the shield or the wires' insulation. Unbraid or unwrap the shield and twist it to look like a wire.

Refer back to the signal list above, and pick out the VIDEO and VIDEO GROUND wires. Slide a 5 inch piece of 1/8 inch heatshrink over these two wires, as close to the jacket as you can get it.

Now pick out the AUDIO and AUDIO GROUND wires, and slide the other 5 inch heatshrink tube over these as close to the jacket as you can get it.
Heat these pairs with a cigarette lighter or match (or an electric hair dryer with a blower) to shrink them.
Here, be very careful of burning and fire. I would recommend doing this outside.
Now slide the 1 1/2 inch piece you slid over the jacket, up so its middle is over the cut end of the jacket, and the smaller heatshrink tubes. Shrink it. You now have a neat, well protected "Y" cable.

Next we will attach the RCA connectors.

Refer to Figure 3a. to get an idea what the connector looks like.
Disassemble the connectors. Pick a color of outer body for the video wire pair. Slide this body over the video wire pair, SMALL END FIRST.
Figure 3b. shows them disassembled.

Note in Figure 3a., that what I refer to as the "Inner Signal Pin" is hollow. The respective signal wires will be stripped back about 1/2 inch so they can be inserted nearly the full length of this pin. The insulation should go right to the base of this pin inside to prevent shorts. Once inserted, solder by heating the pin, and flowing melted solder in at the hole in the tip of the pin.

The ground wire is then soldered to the "Shield Contact" (Figure 3a. and 3b.) to furnish the ground connection. A good way to do this is to fold the ground wire 90 degrees, set the folded part into the grooved "lip" on the shield contact. This will prevent it interfering with the outer body fit. After soldering, let everything cool down. Then slide the outer bodies on

over the connectors. See Figure 3b.

This should complete the construction of the video cable. Check it out on your monitor. If all is well, you are in business. If not, go back and check for shorts between signal wires and ground wires. Also check that the solder took inside the RCA center pins, by checking continuity with a resistance meter. This would be from the video or audio pin in the DIN connector to the respective video pin in the RCA connector.

If you find something, correct it and recheck. Once it is working, pat yourself on the back for a job well done.

Next time, we hope to cover the Joystick connector. In fact I may cover two...An extender for the TI joysticks, and a "Y" adapter for using Atari-Type joysticks.

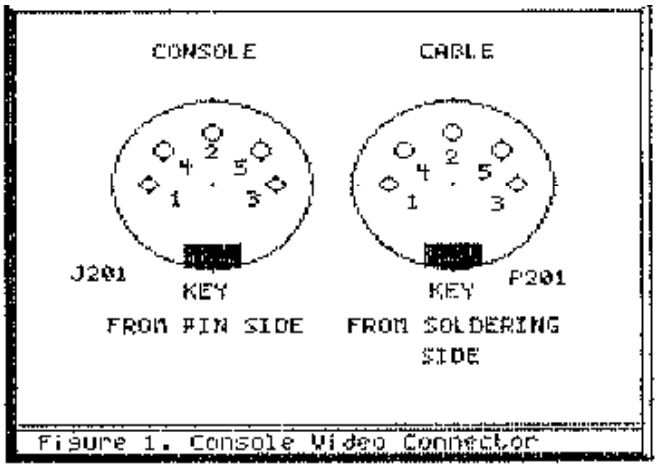

Figure 1. Console Video Connector

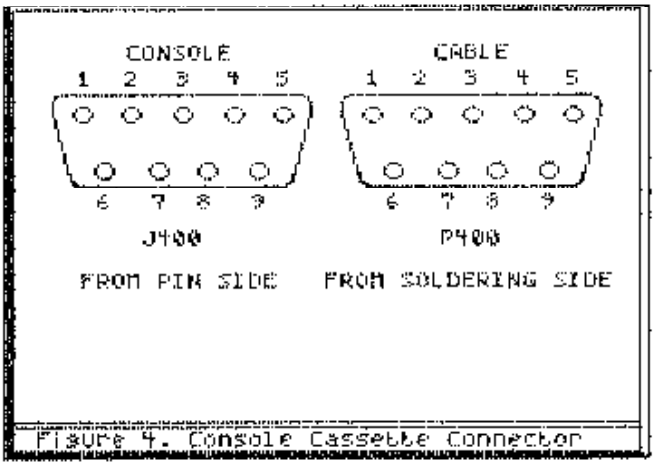

Figure 4. Console Cassette Connector

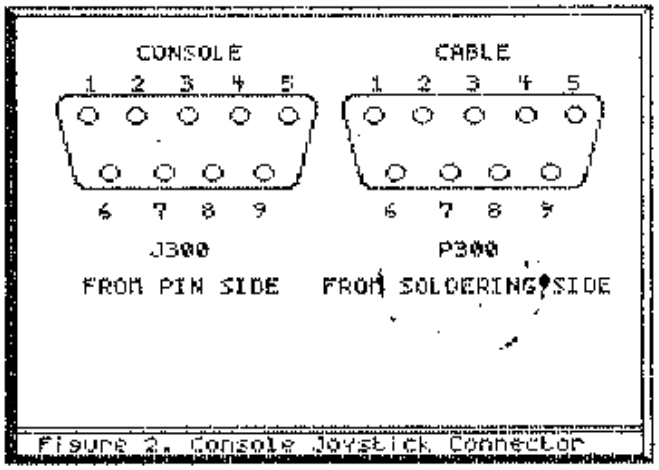

Figure 2. Console Joystick Connector

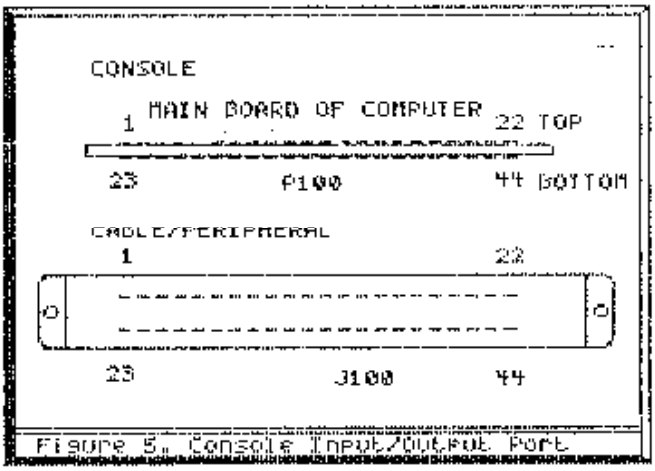

Figure 5. Console Input/Output Port

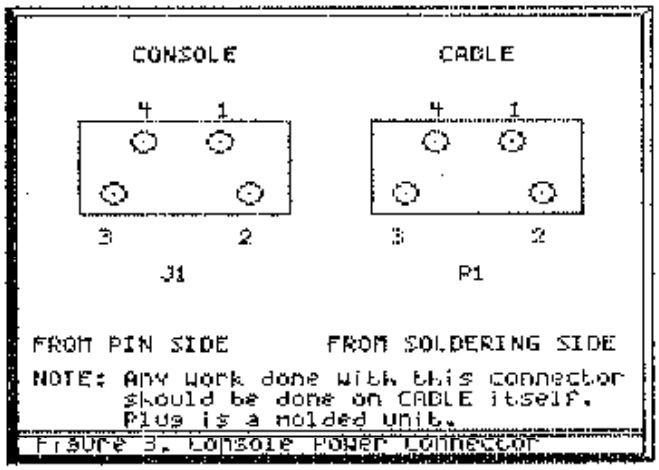

Figure 3. Console Power Connector

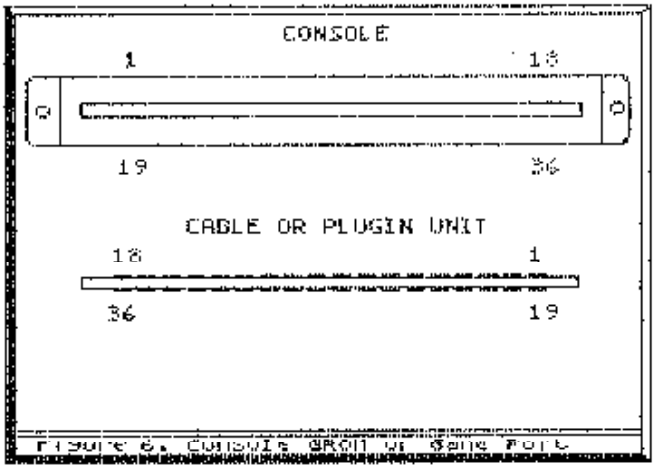

Figure 6. Console Cartridge Port

SAN DIEGO COMPUTER SOCIETY

TI-SIG

JUNE 1988 NEWSLETTER

Meetings: 3rd Tuesday of each month, at 7 P.M., in the Game Room of the North Park Recreation Center, 4044 Idaho St., San Diego

TI-SIG 1988/89 OFFICERS:
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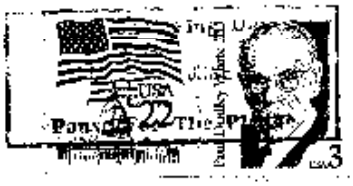

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