PRESIDENTS CORNER

Well its November, Elections and Turkey Dinner month. December and christmas are just around the corner. Then comes January and club elections, and we still need more people running for office.

In that vein I'd like to reprint a story call "Whose Job Is It", I've seen it around for a long time but would not have thought of it if I hadn't seen a reprinting of it in TOPICS the newsletter of the L.A. 99ers.

This is a story about four people named Everybody, Somebody, Anybody, and Nobody. There was an important job to be done and Everybody was asked to do it. Everybody was sure Somebody would do it. Anybody could have done it. Nobody did it. Somebody got angry about that, because it was Everybody's job. Everybody thought Anybody could do it but Nobody realizd that Everybody would not do it. It ended up that Everybody blamed Somebody, when Nobody did what Anybody could have done.

Along this route one more time, its your club if you don't want to help, who will?

To all the groups that have sent us notes and queries about our two month hiatus our thanks, and our apologies. Summer just caught up to us too quickly and we were not prepared. I will try to reply to each of your letters and notes individually.

To all the members I see at each meeting my thanks for your support and help, the meetings would not be the same without that help. To our many, many members that I've seen only once or twice, I'm sorry. I realize that not every meeting is designed for you, but I think that we cover a lot of territory, from basic programming to assembly routines. From hardware to software. I think that those who do come down regularly are getting a great deal more out of their investment in the 99/4A then whose who do not. Finally to those of you who are too far out to get to meetings how can we be of more assistance to you, if you don't write and tell us then we do not know what you want and need.

                              Marshall

MEETINGS

The dates and times for meetings of the Atlanta 99/4A Computern User's Group is the third Sunday of the month at the downtown Atlanta Public Library (off Margaret Mitchell Square) at 3 p.m. For those without a calendar handy; the meeting dates are December 16th, and January 20th. A December meeting is DEFINITELY planned.

SOUTHSIDE chapter meetings are held the first Sunday of the month at the Clayton County Recreation Center in Jonesboro, 101 Lake Jodeco Rd., meetings gegin at 3pm. The next meeting dates are December 2nd and January 6th. For more information call Billy Glass at 961-9199.

EASTSIDE chapter holds regular meetings every other month. The next meeting dates are the first Monday of the month, December 3rd and February 4th at 7pm. The group meets at the Clarkston's Womens Club, off N. Indian Creek across the tracks from E. Ponce DeLeon beside the Clarkston Baptist Church. For more information call Ralph Danson at 292-3427.

ANNOUNCEMENT

EXCELTEC Inc. (formerly Gunware Ltd.) has secured the rights to produce the TI EXTENDED BASIC Command module. We called TI and verified this fact. The TI representative we spoke to also stated that this means any questions concerning support on the module must be directed to Exceltec.
If Extended Basic will now be continued to be manufactured, isn't it likely that several of the other key modules will also be picked up? Let's hope so and wait and see.
Exceltec's address is P.O.Box 54380
Lubbock, TX 79453. Inquiries at (806)794-9104

HAPPY BIRTHDAY CORCOMP

CorComp which makes the Double Density card and a 32K Memory card recently sent a Newsletter to their customers and to the various users' groups. In it they announced that on August 31st they were one year old as a company. A very condensed version of the trials and tribulations was also included in their newsletter. The end result of their newsletter is to state that at the moment they are still very much alive as a company and to proclaim that their Double Density card is now 100% COMPATIBLE with all versions of the 994/A console and the Foundation 128K Card as well. All reported bugs in earlier models have been fixed and any who own an earlier make can get it updated at no cost to themselves.
As an owner of the Foundation card I called CorComp and requested the update. Within 14 days I received it in the mail along with a new Disk Manager diskette.

CorComp stated over the phone that the 9900 Expansion System would still be marketed but admittedly not till early 85.
Included in their newsletter were instructionson how to alter FORTH to accomodate double sided double density disketts.
As a final note CorComp included a request for customers to wishes and desires known to them. If you have ideas or perhaps a product to market, contact them at New Products CorComp Inc. 1255 N. Tustin Ave. Anaheim, CA 92807.

PLEASE NOTE!

The club telephone number has been changed. The new number is 953-2013.
If you get a recording please note that the second message is the one that applies to the User's Group.

CORRECTION

In the October newsletter an article described how to use TI WRITER to make a list of names and addresses for mailing labels. The example given showing how to structure the names and addresses had one omission. There should have been another line at the end of each example and on that line there should have been an asterisk by itself. TI WRITER uses the asterisk to designate the end of one label from the beginning of another.

REVIEW OF THE DRAW-A-BIT GRAPHICS UTILITY

by Harry Potter
89 Miami Trail
Rockaway, NJ 07866
Compuserve ID #71545,302

The Draw-A-Bit (DAB) graphics utility is a program written in assembly language using the Bit Map capabilities of the TI-99/4A Home Computer.
For those used to graphics using, Basic or Extended Basic, DAB has to be seen to be believed. Using either the keyboard or joysticks the user can create graphs, pictures, and text with a resolution of 49,152 pixels and have full use of the 16 colors that the 99/4A has to offer.
DAB comes with a single sided disk and instruction manual. Equipment required to run DAB are the 32K Memory Expansion, one disk drive, Extended Basic Command module, and Joystick (optional). To run DAB you simply insert the disk in Drive one and select Extended Basic.

Some features of DAB, other than just drawing are, a pallette utility that allows you to save keystrokes in memory and on disk so that one key can be used to redraw a series of keystrokes. A draw command that allows you to redraw your picture after clearing the screen. The ability to place dots on the screen and connect them with lines. And file handling allowing the user to save on disk, files for a picture, a pallette, or a draw. A picture file uses about 56 sectors of a single density disk, the other files use less.
Drawing with DAB is a process of using a crosshair "Sprite" on the screen and another called an "Aid". By use of the crosshair and the aid, boxes, circles and diagonal lines are easy. You are able to fill in areas with any color, and alternate between foreground and background drawing. Drawing is so fast with DAB that there is even a command to slow down the crosshair for fine drawing. Upper case letters are also available for lettering the drawings.
The use of this program is limited only by the imagination of the user. Such as, printed circut design, by using the pallette to design solder pads and connecting the pads with lines then printing out the design with Print-A-Bit, an optional printing utility. Then the printout is used to make a negative. It is a simple matter to etch the printed circut to make the board. Making graphs for business is just as easy. Design the graph on the screen and either print it out or make a slide by photographing the screen. It is even possible to create a picture with DAB and use it with TI-Forth. By using DAB and Forth the possibility of game design makes the imagination work overtime. I have taken the liberty of including a Forth screen that will load a DAB picture file into forth.
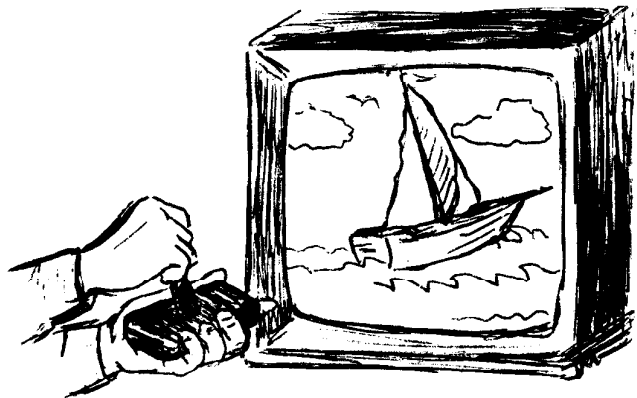
```
***********************************
( DABI TO FORTH FILE COPY  HJP 6/12/84 ) BASE->R
    DECIMAL
: DABI-FORTH    ( Loads file created with DAB )
    GRAPHICS2 14 SCREEN DABI SET-PAB FXD DSPLY ( Set file )
    254 REC-LEN INPT F-D" DSK1.XXXXXX" ( NAME OF DAB FILE )
    ( Modify the disk name using the Forth editor to the )
    ( name of the DAB file that you wish to copy to Forth )
    DABI OPN ( Open file )
    6350 0 DO ( Read first part of file to color table )
    RD MY-BUF I 254 VMBW  254  +LOOP    RD RD RD RD  RD RD
    14288  7874 DO ( Read second part to pattern dis. table )
    RD  MY-BUF I 254 VMBW  254  +LOOP CLSE  SP!    ;

R->BASE
***********************************
```

Typing DABI-FORTH in Forth will copy the file from DAB to TI-Forth.

The only fault that I can find in DAB is the manual. It was written as a series of exercises designed to make the new user familiar with DAB. It is printed in a style that is hard to read. It seems like the print was originally larger and reduced down to fit on the page. There seems to be no logical sequence to the manual and until all the keystrokes are learned some type of overlay would be a nice addition. The program seems "BUG" free and in a year of use I have never lost a picture unless it was my own mistake. Print-A-Bit(PAB) is a printing utility that is used in conjunction with DAB. It is available for the Epson, Gemini 10, and TI dot matrix printers. It will print a picture file created with DAB in a single or double size mode. There is also a choice of either single or double density printing. PAB is also accessed through Extended Basic.
DAB and PAB can be ordered from:
Data Force Incorporated
10 S. 312 Hampshire Lane East
Hindsdale, IL 60521

Prices are as follows:
Draw-A-Bit.................$49.95
Print-A-Bit............... 24.95
Combination of both....... 69.95


```
***********************************************
***********************************************
****     C L U B     O F F I C E R S     ****
***********************************************
***********************************************
```

Marshall Gordon   President
Gary Matthews   Vice President
Elise Gordon   Secretary/Treasurer
In transition   Newsletter Chairman
We need one   Program Chairman
Bob Willis   Library Chairman/BBS Sysop
We need one   Education Chairman
We need one   Recruitment Chairman

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***********************************************
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EAST SIDE CHAPTER (ESCUG)

Ralph Danson   President
Bill Dickinson   Vice President
Pat Hester   Secretary/Treasurer
Robert Murphy   Librarian

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***********************************************
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SOUTH SIDE CHAPTER

Billy Glass   President
Dennis Hawkins   Vice President
Bob Orr   Secretary/Treasurer

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***********************************************
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Double-Density FORTH
by J. W. Vincent

This article is intended for all TI FORTH users who have (or plan on having) double density and/or double sided disk capabilities. While the techniques described should work with any disk controller capable of double density, the author's CorComp 9900 Disk Controller card is the only one that has been tested. The purpose of this article is to illustrate both how to access the additional screen capacity and how to modify the FORTH words and disc to be compatable with the new format and Disk Manager. Throughout this article lowercase letters used in a FORTH definition will indicate a variable value to be entered. The following terms will be used to refer to the various formats a FORTH disc may have.

    90 SCRN or SSSD   - the original 90 screen single sided single density format
    180 SCRN   - either a SSDD or DSSD disc when comment applies to both
    360 SCRN or DSDD -   a double sided double density disc
                SSDD - a single sided double density disc
                DSSD - a double sided single density disc

The first step is to use Disk Manager to format (initialize) a 180 or 360 SCRN disc. Next, you must copy FORTH from the 90 SCRN disc to the new 180 or 360 SCRN disc. The disc copy feature of CorComp's Disk Manager will do this properly for you. If you have two drives, the FORTH-COPY word in the -COPY screens will also do it properly (do 0 DISK_LO ! first). However, if you are using TI's Disk Manager II, after copying the three files you must use FORTH to copy screens 1 to 9 because Disk Manager II puts them in the wrong place! To do this, enter the following for each of the nine screens.

    n BLOCK UPDATE (where n is the screen number to be read from old disc)
    FLUSH   (after inserting the new disk - note: up to five screens may be entered at a time)

Now edit screen 3 of your new disc and add the following commands:

    x DISK_SIZE ! (where x = 180 or 360 as approprate)
    y DISK_HI   ! (where y = x times 1, 2, 3, or 4 depending on the number of drives you have)

Unfortunately, TI FORTH does not provide a method for configuring each drive individually. Therefore, the user must be cognizant of which screens are available on each drive when there are differences between them. At this point, FORTH can be booted and it will recognize the full capacity of your 180 or 360 SCRN disc. You can create, edit, list, and load from screens greater than 89. However, neither Disk Manager nor FORTH-COPY will recognize this disk as having more than 90 screens. To fix this problem you must modify the -COPY screens (39 and 40), the disc header (sector 0) and, the SYS-SCRNS file header (sector 4). First edit screen 39. Change

the value 90, which appears once in DTEST and twice in FORTH-COPY to 180 or 360 as appropriate. Next, edit screen 40 as follows:

    Line 3 - change 168 to 2D0 for 180 SCRN or 5A0 for 360 SCRN
    Line 4 - change 944 to 1244 for SSDD or DSDD (no change for DSSD)
    Line 5 - replace entire line with:
            DUP 10 + 2028 SWAP ! DUP 12 + a SWAP ! DUP 14 + 24 0 FILL
            where a = 0201 for DSSD, 0102 for SSDD, or 0202 for DSDD
    Line 10 - change 165 to 2CD for 180 SCRN, or 59D for 360 SCRN
    Line 13 - change 4016 to C02C for 180 SCRN, or C059 for 360 SCRN

Next edit screen 33 to modify the FORMAT-DISK word to:

    : FORMAT-DISK 1+ a 33616 ! 18 SYSTEM ;
    (where a = 258 for DSSD, 513 for SSDD, 514 for DSDD)

Finally, you need to create a word that will modify the header sectors on your new disc. This word only needs to be executed once since copies of this disk, once it's modified, will not require modification. Here is the way to do it:

    HEX 0 DISK_LO !   (removes disc fence)
    : DD-FORTH 0 BLOCK UPDATE   (read screen 0 and mark as updated)
            DUP A + a SWAP !   (a = 2D0 for 180 SCRN, 5A0 for 360 SCRN)
            DUP C + b SWAP !   (b = 944 for DSSD, 1244 for SSDD or DSDD)
            DUP 10 + c SWAP !   (c = 2028 for all versions)
            DUP 12 + d SWAP !   (d = 201 on DSSD, 102 on SSDD, 202 on DSDD)
            38 + C8 FF FILL   (flag all sectors as in use)
            1 BLOCK UPDATE   (read screen 1 and mark as updated)
            DUP E + f SWAP !   (f = 2A0 for 180 SCRN, 570 for 360 SCRN)
            DUP 1C + g SWAP !   (g = 4D20 for 180 or 360 SCRN versions)
            DUP 1E + h SWAP !   (h = 2805 for 180 SCRN, 5205 for 360 SCRN)
            20 + i SWAP !   (i = F029 for 180 SCRN, F059 for 360 SCRN)
            FLUSH ;   (write modified screens to disc)
    DECIMAL DD-FORTH   (execute it)

Now your new high capacity copy of FORTH is fully compatable with Disk Manager, the FORTH format, copy, test, and header words and your double density and/or double sided disk drives and controller. Enjoy!

FORTH
One Drive Disk Copiers

This months programs consist of two single disk drive system, disk copiers. The first and the simplist will format your disk and in six (6) passes copy any disk. Well almost any disk. This will copy disk that are protected and disks that Disk Manager will not recognize. This procedure is to enable you to make backup copies not to hand them around.

First boot up FORTH with the Editor/Assembler Module then at the cursor enter '-EDITOR'. After the Editor loads enter '41 EDIT'. You should have a blank Forth screen on your monitor labeled SCR #41, this is one of the few Forth Screens that were not used.

Now type in the copy of Screen #41 exactly as it shows below. Check very carefully for errors as you go and once again at the end on the entering, if your sure that you entered the Screen correctly then press 'FCTN' and '9' (back). At the cursor type 'FLUSH' and press 'ENTER'. This will save the Screen to your disk.

```
    SCR #41
       0 ( HALF-FAST ONE-DRIVE DISK COPIER -- C.  SCHRAM 4/28/84 )
       1 ( COLD Load this screen and DUPLICATE )
       2 BASE->R DECIMAL -SYNONYMS 0 VARIABLE BIG 15358 ALLOT
       3 : ?# EMPTY-BUFFERS 0 BLOCK 10 + @ 256 1024 */MOD SWAP 0= 0= + ;
       4 : PAK CR ." PRESS ANY KEY" 52 GPLLNK KEY DROP CR CR ;
       5 : LMD ." LOAD MASTER DISK" PAK ; : LCD ." LOAD COPY DISK" PAK ;
       6 : DUPLICATE CLS 0 0 GOTOXY LMD 0 DISK_LO ! ?# DUP DUP
       7 DISK_SIZE ! DISK_HI ! LCD
       8 ." ...FORMATING COPY DISK..." 0 FORMAT-DISK
       9 0 DO CLS 0 0 GOTOXY LMD
      10 I 15 0 DO DUP I + DUP . CR BLOCK BIG I 1024 * + 1024 CMOVE LOOP
      11 CLS 0 0 GOTOXY LCD
      12 15 0 DO DUP I + DUP . CR BLOCK BIG I 1024 * + SWAP 1024 CMOVE
      13 UPDATE FLUSH LOOP
      14 DROP 15 +LOOP 1 DISK_LO ! ; R->BASE
      15
```

Now comes the moment of truth, enter 'COLD' when FORTH reboots enter '41 LOAD', if there is an error you will find out now. If there is no error, I suggest you follow the directions and make a back up copy of your FORTH disk.

If you get a few 'words' and a '?' then there is an error on Screen 41. Enter 'COLD' to reboot and '-EDITOR' and check out your Screen 41. Correct the ? error and then 'FLUSH' the corrected Screen and go on from there.

If you can spare a disk here are two more Screens to change then the program will autoboot everytime you boot this FORTH disk.

On Screen #3 change lines 0 and 1 and add lines 12 and 13 as follows :

```
    SCR #3
       0 ( WELCOME SCREEN )  BASE->R HEX 10 SYSTEM    ( Clear Screen )
       1 0 0 GOTOXY ." Loading Forth Copier " CR 10 83C2 C! ( QUIT OFF )
       2 DECIMAL ( 84 LOAD ) 20 LOAD 16 SYSTEM   MENU

      12 41 LOAD
      13 CR CR CR ."READY... TYPE 'DUPLICATE' " CR CR CR CR
```

On Screen #20 delete lines 9-15 and replace them with the ones below:

```
       9
      10
      11
      12           FORTH SINGLE-DRIVE
      13              DISK COPIER
      14
      15              C. Schram
```
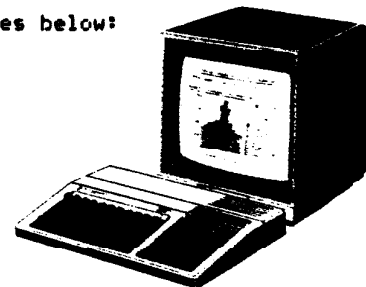
For thoses of you who want a little faster version. The program below shown on Screens 30,31, and 32 do not format your disk but will complete a copy in three passes.

Follow the instructions above, copy the three screens carefully. After each screen enter 'FCTN' and '9' (back), and then 'FLUSH' to copy it to disk before you go on to the next Screen.

```
SCR #30
   0 ( 3 Pass Disk Copy - Doug Smith ) BASE->R DECIMAL  FORGET MENU
   1 : CLS 16 SYSTEM ; : VMBW 2 SYSTEM ; : VMBR 6 SYSTEM ;
   2      0 VARIABLE AREA  15360 ALLOT 0 VARIABLE PL
   3 : TX CLS 5 10 GOTOXY 52 0 33660 C! 10 SYSTEM ;
   4 : M1 TX ." INSERT COPY DISK-PRESS ANY KEY " KEY DROP ;
   5 : M2 TX ." INSERT  MASTER - PRESS ANY KEY " KEY DROP ;
   6 : PR    ." ENTER W TO COPY DISK IN DRIVE 1 " ;
   7 : M3 TX ."        COMMAND COMPLETED " CR CR CR ."     " PR ;
   8 : PU PL @ 20 + PL @ 5 + DO I BLOCK AREA 2 + I PL @ 5 + - 1024
   9      * + 1024 CMOVE LOOP ;
  10 : BU PL @ 5 + PL @ DO I BLOCK UPDATE LOOP M1 FLUSH ;
  11 : DR PL @ 10 + PL @ 5 + DO AREA 2+ I PL @ 5 + - 1024 * + I
  12      BUFFER 1024 CMOVE UPDATE LOOP FLUSH PL @ 15 + PL @ 10 + DO
  13      AREA 2+ I PL @ 5 + - 1024 * + I BUFFER 1024 CMOVE UPDATE
  14      LOOP FLUSH PL @ 20 + PL @ 15 + DO AREA 2+ I PL @ 5 + -
  15      1024 * + I BUFFER 1024 CMOVE UPDATE LOOP FLUSH ;   --)
```

```
SCR #31
   0 ( 3 Pass Disk Copy cont. )
   1 : BPU PL @ 28 + PL @ 20 + DO I BLOCK 5120 I PL @ - 20 - 1024
   2      * + 1024 VMBW LOOP PL @ 28 + BLOCK 3072 1024 VMBW
   3      PL @ 29 + BLOCK 1122 1024 VMBW ;
   4 : BDR PL @ 25 + PL @ 20 + DO 5120 I PL @ - 20 - 1024 * + I
   5      BUFFER 1024 VMBR UPDATE LOOP FLUSH PL @ 28 + PL @ 25 +
   6      DO 5120 I PL @ - 20 - 1024 * + I BUFFER 1024 VMBR UPDATE
   7      LOOP 3072 PL @ 28 + BUFFER 1024 VMBR UPDATE
   8      1122 PL @ 29 + BUFFER 1024 VMBR UPDATE FLUSH ;
   9 : PAS M2 . BPU PU BU BDR DR ;
  10 : CHR 2048 98 255 20 SYSTEM 3072 1024 255 20 SYSTEM ;
  11 : CY  0 PL ! 30 / 2+ 1 DO I PAS 30 PL +! LOOP
  12      SP! M3 CR CR CHR ABORT ;
  13 : W    89 CY ; ( Note: Or 29 CY , 59 CY copies part of the disk )
  14 0 DISK_LO ! 0 33730 C! ( QUIT ON )
  15 R->BASE      TX PR
```

```
SCR #32
   0 ( Instructions for 3 pass Single Drive Disk Copy
   1
   2    This program does not require any - (dash) Options to be
   3 Loaded into memory. It will automatically clear out any that ma
   4 be loaded, since it requires almost all of the available memory.
   5 After you are finshed copying your disks place your Forth system
   6  disk in drive one and type in COLD and press ENTER, to reload t
   7  Forth system back into memory. To copy an entire single sided
   8 disk type W and press ENTER, then follow the prompts on the
   9 screen untill the command is done.
  10
  11            Given Free To Public Domain
  12                  Doug Smith
  13                5021 Nicholas Rd.
  14                Waldorf, MD 20601
  15                   301 645-1432
```

On Screen #3 change lines 0 and 1 and add line 12 as follows:

```
0 ( Welcome Screen ) BASE->R HEX 10 SYSTEM (Clear Screen )
1 0 0 GOTOXY ."Loading 3 Pass Disk Copier "

12 30 LOAD
```

On Screen #20 delete lines 9-15 and replace them with the ones below:

```
   9
  10
  11      3 PASS SINGLE DRIVE DISK COPIER
  12
  13        Given Free to Public Domain
  14              Doug Smith
  15           Waldorf, MD 20601
```

I'd like to thank C.Schram of the St. Louis U.G. for the half-fast copier and Doug Smith for the 3 pass copier. Thanks, also go to Bill Knecht and Larry Pipkin of HUG (The Huston Users Group) for the auto-load portions of the program. Gentlemen you have all done a very fine job.

                              Marshall
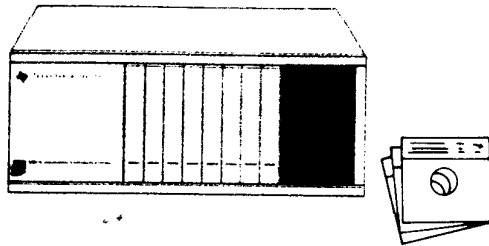
The following article is reprinted from the June issue of 4A
FORUM, the newsletter of the Central Iowa 99/4A Users Group.

                                                               SECTOR 0
```
Hex      Dec          Meaning (of the 256 bytes in the sector)
=====    =======      ==================================================
00-09     0-  9       The disk name you assigned
0A-0B    10- 11       Number of sectors initialized (ex >0168 = 360)
0C       12           Number of sectors per track (ex >09 = 9)
0D-0F    13- 15       TI identifier - "DSK" or >44534B
10       16           Copy protection (ex >20 = none, >50 = protected)
11       17           Number of tracks (ex >28 = 40)
12       18           Number of sides (ex >01 = single, >02 = double)
13       19           Disk density (ex >01 = single, >02 = double)
14-37    20- 55       not used
38-64    56-100       } This is a bit map of all the sectors on the disk
66-92   102-146       } Use depends on if the disk is SS, DS, SD, or DD
94-C0   148-192       } 1) Take each byte (45 bytes for 360 sectors)
C2-EE   194-238       } 2) Convert to bits (8 bits per byte)
                         3) Reverse the order of the 8 bits
                         4) If the bit is "0" then the corresponding
                            sector (0 to 359) is free.  If the bit is
                            "1" then the sector is used.

65,93   101,147       }
C1,EF   193,239       } not used
F0-FF   240-255       }
```
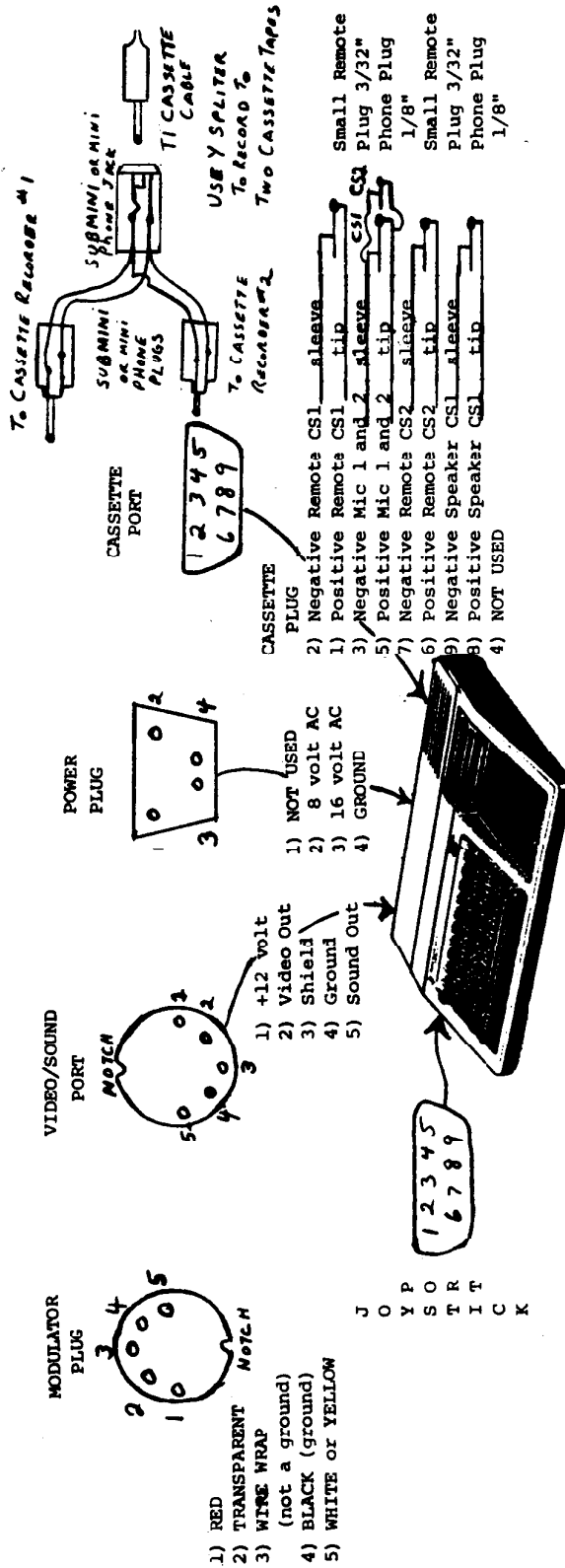--

                                                               SECTOR 1
```
Hex      Dec          Meaning
=====    =======      ==================================================
00-01     0-  1       Tells sector of 1st "alphabetic" file directory
02-03     2-  3       Tells sector of 2nd "alphabetic" file directory
  :         :         ("alphabetic" means that if the filenames were
  :         :         sorted this would be the 1st, 2nd, etc filename)
FC-FD   252-253       Tells sector of the 127th "alphabetic" file dir.
FE-FF   254-255       0000 is always after the last filename (if there
                      was only one file then 0000 would be at >02-03)
```

                                                             SECTORS 2-33
```
Hex      Dec          Meaning
=====    =======      ==================================================
00-09     0-  9       The file name that you used
0A-0B    10- 11       not used
0C       12           File Type    bit 0 - 0=fixed     1=variable length
                                   bit 4 - 0=none      1=write protected
                                   bit 6 - 0=display   1=internal format
                                   bit 7 - 0=data      1=program file
0D       13           Number of records per sector (n/a for program)
0E-0F    14- 15       Number of sectors per file
10       16           End of file offset in last sector (n/a for fixed)
11       17           Record size (n/a for program)
12-13    18- 19       Number of records per file (n/a for program)
                      note - the bytes are reversed (ex >0102 = >0201)
14-1B    20- 25       not used
1C       26           Sector where file is located } repeats as needed
1D-1E    27- 28       Number of sectors following   } to use any sector
                      note - the bytes are flipped (ex >12 = >2001)
```
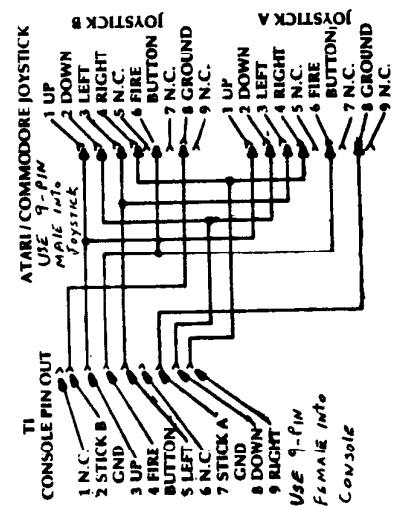--

W I R I N G   D I A G R A M S   A N D   P I N   P O S I T I O N S

All plug and port numbers are as if you were looking straight into them.
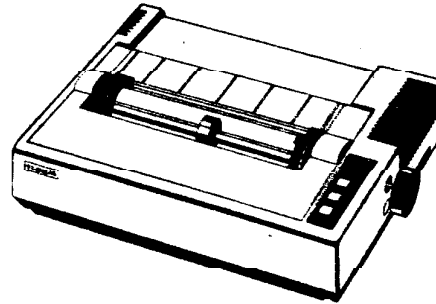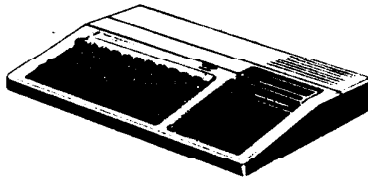Now you have something to use if a wire breaks or you want a weekend project.

MARSHALL

MODULATOR PLUG

1) RED
2) TRANSPARENT
3) WIRE WRAP
   (not a ground)
4) BLACK (ground)
5) WHITE or YELLOW

VIDEO/SOUND PORT

NOTCH

1) +12 volt
2) Video Out
3) Shield
4) Ground
5) Sound Out

POWER PLUG

1) NOT USED
2) 8 volt AC
3) 16 volt AC
4) GROUND

CASSETTE PORT

1 2 3 4 5
6 7 8 9

CASSETTE PLUG

2) Negative Remote CS1   sleeve
1) Positive Remote CS1   tip
3) Negative Mic 1 and 2   sleeve
5) Positive Mic 1 and 2   tip
7) Negative Remote CS2   sleeve
6) Positive Remote CS2   tip
9) Negative Speaker CS1   sleeve
8) Positive Speaker CS1   tip
4) NOT USED

To Cassette Recorder #1

SUB MINI or MINI Phone Jack

TI CASSETTE CABLE

SUB MINI or MINI PHONE PLUGS

USE Y SPLITTER To Record To Two Cassette Tapes

To Cassette Recorder #2

Small Remote Plug 3/32" Phone Plug 1/8"

Small Remote Plug 3/32" Phone Plug 1/8"

CS1 CS2

TI-99/4A LIGHTPEN

The TIL 404 Photo-Transistor is attached to
one end of the wire and inserted into a Felt-
Tip or Ball Point Pen Case. It should be held
in place by silicone glue. Use RG 174/U
coaxial cable for wire. The other parts can
be connected at the 9pin connector end and
wraped in tape to hold them.

USE 9 PIN "D" CONNECTOR FEMALE

JOYSTICK

TIL 404

R1. 470KΩ

R2. 47KΩ

T2 2N2907

C1 0.047μF

PIN3

PIN7

T1

TI CONSOLE PIN OUT

1 N.C.
2 STICK B
3 UP
4 FIRE
BUTTON
5 LEFT
6 N.C.
7 STICK A
GND
8 DOWN
9 RIGHT

Use 9-Pin Female into Console

ATARI / COMMODORE JOYSTICK

USE 9-PIN MALE into Joystick

JOYSTICK B
1 UP
2 DOWN
3 LEFT
4 RIGHT
5 N.C.
6 FIRE
BUTTON
7 N.C.
8 GROUND
9 N.C.

JOYSTICK A
1 UP
2 DOWN
3 LEFT
4 RIGHT
5 N.C.
6 FIRE
BUTTON
7 N.C.
8 GROUND
9 N.C.

The following is reprinted from the Hoosier User's Group June 84 HUGGER's Newsletter.

KEY CODE / TOKENIZED BASIC CODE CHART

Compiled by Don Donlan

COMMAND	ASCII/Hex	Key
Marks EOL	0)00	
AID	1)01	FCTN 7
BREAK/INTRUPT	2)02	FCTN 4
DELETE CHAR.	3)03	FCTN 1
INSERT	4)04	FCTN 2
QUIT/RESET	5)05	FCTN =
REDO/REPEAT	6)06	FCTN 8
ERASE A LINE	7)07	FCTN 3
Cursor Left	8)08	FCTN S
Cursor Right	9)09	FCTN D
Cursor Down	10)0A	FCTN X
Cursor Up	11)0B	FCTN E
PROC'D	12)0C	FCTN 6
Carriage Rtrn	13)0D	ENTER
BEGIN	14)0E	FCTN 5
BACK	15)0F	FCTN 9
#DLEscape	16)10	CTRL P
#DC1 (X-ON)	17)11	CTRL Q
#DC2	18)12	CTRL R
#DC3 (X-OFF)	19)13	CTRL S
#DC4	20)14	CTRL T
#NAKnowledge	21)15	CTRL U
#SYNc idle	22)16	CTRL U
#ETBlock	23)17	CTRL W
#CANcel	24)18	CTRL X
#End of Medium	25)19	CTRL Y
#SUBstitute	26)1A	CTRL Z
#ESCape	27)1B	CTRL .
#File Separatr	28)1C	CTRL ;
#Grp Separator	29)1D	CTRL =
Cursor Char.	30)1E	
Edge Char.	31)1F	
Blank/Space	32)20	Space
	33)21	!
	34)22	"
	35)23	#
	36)24	$
	37)25	%
	38)26	&
	39)27	'
	40)28	(
	41)29	)
	42)2A	*
	43)2B	+
	44)2C	,
	45)2D	-
	46)2E	.
	47)2F	/
	48)30	0
	49)31	1
	50)32	2
	51)33	3
	52)34	4
	53)35	5
	54)36	6
	55)37	7
	56)38	8
	57)39	9
	58)3A	:
	59)3B	;
	60)3C	<
	61)3D	=
	62)3E	>
	63)3F	?

COMMAND	ACSCII/Hex	Key
Upper Case..	64)40	@
	65)41	A
	66)42	B
	67)43	C
	68)44	D
	69)45	E
	70)46	F
	71)47	G
	72)48	H
	73)49	I
	74)4A	J
	75)4B	K
	76)4C	L
	77)4D	M
	78)4E	N
	79)4F	O
	80)50	P
	81)51	Q
	82)52	R
	83)53	S
	84)54	T
	85)55	U
	86)56	V
	87)57	W
	88)58	X
	89)59	Y
	90)5A	Z
	91)5B	[
	92)5C	\
	93)5D	]
	94)5E	^
Underline	95)5F	_
Grave Accent	96)60	`
Lower Case..	97)61	a
	98)62	b
	99)63	c
	100)64	d
	101)65	e
	102)66	f
	103)67	g
	104)68	h
	105)69	i
	106)6A	j
	107)6B	k
	108)6C	l
	109)6D	m
	110)6E	n
	111)6F	o
	112)70	p
	113)71	q
	114)72	r
	115)73	s
	116)74	t
	117)75	u
	118)76	v
	119)77	w
	120)78	x
	121)79	y
	122)7A	z
	123)7B	{
	124)7C	|
	125)7D	}
	126)7E	~
Delete Char.	127)7F	

COMMAND	ASCII/Hex	Key
DEF	137)89	CTRL I
DIM	138)8A	CTRL J
END	139)8B	CTRL K
FOR	140)8C	CTRL L
LET	141)8D	CTRL M
BREAK	142)8E	CTRL N
UNBREAK	143)8F	CTRL O
TRACE	144)90	CTRL P
UNTRACE	145)91	CTRL Q
INPUT	146)92	CTRL R
DATA	147)93	CTRL S
RESTORE	148)94	CTRL T
RANDOMIZE	149)95	CTRL U
NEXT	150)96	CTRL V
READ	151)97	CTRL W
STOP	152)98	CTRL X
DELETE	153)99	CTRL Y
REM	154)9A	CTRL Z
ON	155)9B	CTRL .
PRINT	156)9C	CTRL ;
CALL	157)9D	CTRL =
OPTION	158)9E	CTRL 8
OPEN	159)9F	CTRL 9
CLOSE	160)A0	
SUB	161)A1	
DISPLAY	162)A2	
%IMAGE	163)A3	
%ACCEPT	164)A4	
%ERROR	165)A5	
%WARNING	166)A6	
%SUBEXIT	167)A7	
%SUBEND	168)A8	
%RUN	169)A9	
%LINPUT	170)AA	
	171)AB	
	172)AC	
	173)AD	
	174)AE	
	175)AF	
"THEN	176)B0	CTRL 0
"TO	177)B1	CTRL 1
"STEP	178)B2	CTRL 2
"Comma (,)	179)B3	CTRL 3
"Semi-cln(;)	180)B4	CTRL 4
"Colon (:)	181)B5	CTRL 5
"Rt. Paren.)	182)B6	CTRL 6
"Lt. Paren. (	183)B7	CTRL 7
"Ampersand &	184)B8	FCTN ,
	185)B9	
"%OR	186)BA	FCTN /
"%AND	187)BB	CTRL /
"%XOR	188)BC	FCTN 0
"%NOT	189)BD	FCTN ;
=	190)BE	FCTN 8
< Less Than.	191)BF	FCTN H

COMMAND	ASCII/Hex	Key
Flag Line No	201)C9	
EOF	202)CA	
ABS	203)CB	
ATN	204)CC	
COS	205)CD	
EXP	206)CE	
INT	207)CF	
LOG	208)D0	
SGN	209)D1	
SIN	210)D2	
SQR	211)D3	
TAN	212)D4	
LEN	213)D5	
CHR$	214)D6	
RND	215)D7	
SEG$	216)D8	
POS	217)D9	
VAL	218)DA	
STR$	219)DB	
ASC	220)DC	
%PI	221)DD	
REC	222)DE	
%MAX	223)DF	
%MIN	224)E0	
%RPT$	225)E1	
	226)E2	
	227)E3	
	228)E4	
	229)E5	
	230)E6	
	231)E7	
%NUMERIC	232)E8	
%DIGIT	233)E9	
%UALPHA	234)EA	
%SIZE	235)EB	
%ALL	236)EC	
%USING	237)ED	
%BEEP	238)EE	
%ERASE	239)EF	
%AT	240)F0	
BASE	241)F1	
? TEMPORARY	242)F2	
VARIBLE	243)F3	
RELATIVE	244)F4	
INTERNAL	245)F5	
SEQUENTIAL	246)F6	
OUTPUT	247)F7	
UPDATE	248)F8	
APPEND	249)F9	
FIXED	250)FA	
? PERMANENT	251)FB	
TAB	252)FC	
# (FILE NUM)	253)FD	
%VALIDATE	254)FE	
2 MARK EOF	255)FF	

COMMAND	ASCII/Hex	Key
Null	128)80	CTRL
ELSE	129)81	CTRL A
!!	130)82	CTRL B
! (REM)	131)83	CTRL C
IF	132)84	CTRL D
GO	133)85	CTRL E
GOTO	134)86	CTRL F
GOSUB	135)87	CTRL G
RETURN	136)88	CTRL H

COMMAND	ASCII/Hex	Key
=) Grtr Than.	192)C0	FCTN J
"+	193)C1	FCTN K
"-	194)C2	FCTN L
"*	195)C3	FCTN M
"/	196)C4	FCTN N
"^	197)C5	FCTN O
" undefined	198)C6	FCTN Y
Flag Quoted$	199)C7	
Fl Unquoted$	200)C8	

\# Used in Pascal. Useful information found in the Users Reference Guide page III-2.

% Used in Extended BASIC.

? Little used parameters related to disk files. See the TI Users Reference Guide, page II-121.

" Compiled from MicroCompendium. Other information compiled from past issues of 99'er Magazine.

WHERE TO PURCHASE SOFTWARE

At our last meeting we discussed some of the new hardware and software that was now available. We also read from several of the catalogs that are available, and I was asked for the address of these firms. So here they are for your best information you should write for some of these catalogs.

Let me also say that at this time prices have never been lower TI has reduced the price to their suppliers and they in turn are passing some darn good buys on to you. But the products and no longer being manufactured, so if you want something now is the time to buy....

TI turned over all of their remaining item to Triton Products Company they are supossed to have the best supply.

        TRITON PRODUCTS COMPANY
            P.O. Box 8123
       San Franciso, Ca 94128
        (800) 227-4777

The company that advertises 'THE EVERYTHING BOOK',TENEX COMPUTER EXPRESS may just be right.

        TENEX COMPUTER EXPRESS
           P.O. Box 6578
       South Bend, IN 46660
        (800) 348-2778

My favorite even if they did't send me my new catalog. TEX COMP, they seem to have the largest collection of third party hardware/software.

            TEX COPM
         P.O. Box 33084
     Granada Hills, CA 91344
        (818) 366-6631

Last but not least, and one of the better supplied 99/4A product houses, UNISOURCE ELECTRONICS, INC.

      UNISOURCE ELECTRONICS, INC.
          P.O. Box 64240
       Lubbock, TX 79464
        (800) 858-4580

One last word about purchases, after you've gotten the latest cataloge please remember that when you order by mail, and I believe that all of the above firms are honest and trustworthy, if something goes wrong you have to mail it back and wait for it to arrive back here. That can be two-three weeks. We in Atlanta are fortunate to have two local supply houses, I don't know how the prices compare, but if you need an immediate exchange or an answer to a problem they are local, you can get to them and you can call and ask questions. Don't think that a few dollars savings is the only criterion for purchasing products.
                    Marshall
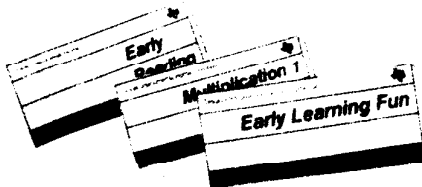
N O T I C E S

The Nominating Committee finalized the candidates for the elections to be held at the January meeting.
Following is a list of those nominated as Officers and those who have volunteered to serve in the following positions:

Position	Name
President	Gary Matthews
Vice President	Ralph Danson
Sec/Treasurer	Billy Glass
Newsletter Chairman	Marshal Gordon
Librarian/BBS Sysop	Bob Willis
Publicity	Bill Kleinsorge
Programs Pat Cameron	Jim Hubbard

Ballots will be included in the December Newsletter to be either mailed in or dropped into the ballot box at the January meeting. Those willing to help with any of the four committees please jump right in and do so.

****

The following is a compilation of some suggestions and helpful hints from various sources which were graciously supplied to us by Winston Yancey. To Winston go our most sincere thanks for this contribution to the newsletter.

For those interested in amateur radios, there is a "NET" for TI owners. It is KD8LR (Bob). The net meets every Wednesday night on 3.927 MHZ at 10:00 PM EST.

Here are some interesting Pokes to try:
(-32768,0) puts you in BASIC from Ext. BASIC
(-32352,0) will make the screen transparent.
(-32272,0,"",-30945,0) will change to 40 col.
(-32766,0) will put you in bit map mode.

The following program will send a file created by the word processor through the modem:

```
100 INPUT "SAVED DV80 FILE NAME ==>":FN$
110 OPEN #1:"DSK1."&FN$,INPUT,DISPLAY,
      VARIABLE 80
120 OPEN #2:"DSK1.LOGON",OUTPUT,DISPLAY,
      VARIABLE 163,SEQUENTIAL
130 IF EOF(1) THEN 240
140 LINPUT #1:X$
150 IF LEN(X$)=0 THEN 130
160 B=POS(X$," ",1)-1
170 C=INT(VAL(SEG$(X$,1,X)))-(Y6)
180 D=VAL(SEG$(X$,1,X))-(Y6)
190 X=X+1
200 A=LEN(X$)-X+1
210 X$=CHR$(Y)&CHR$(Z)&SEG$(X$,X,LEN(X$))
      &CHR$(0)
220 PRINT #2:X$
230 GOTO 130
240 PRINT #2:CHR$(255)&CHR$(255)
250 CLOSE #1::CLOSE #2
260 STOP
```

To use this program: 1. create your file in the word processor. 2. save the file to disk. 3. change to extended BASIC. 4. run this program. 5. log on to your mainframe. 6. when you are ready to begin typing your text, press ctrl 0 (this will bring you to the title screen, but the mainframe won't realize that).
7. press the number 3 key three times (this will select the default settings on the TEII and will transmit the saved file from the word processor).

Thanks again Winston.
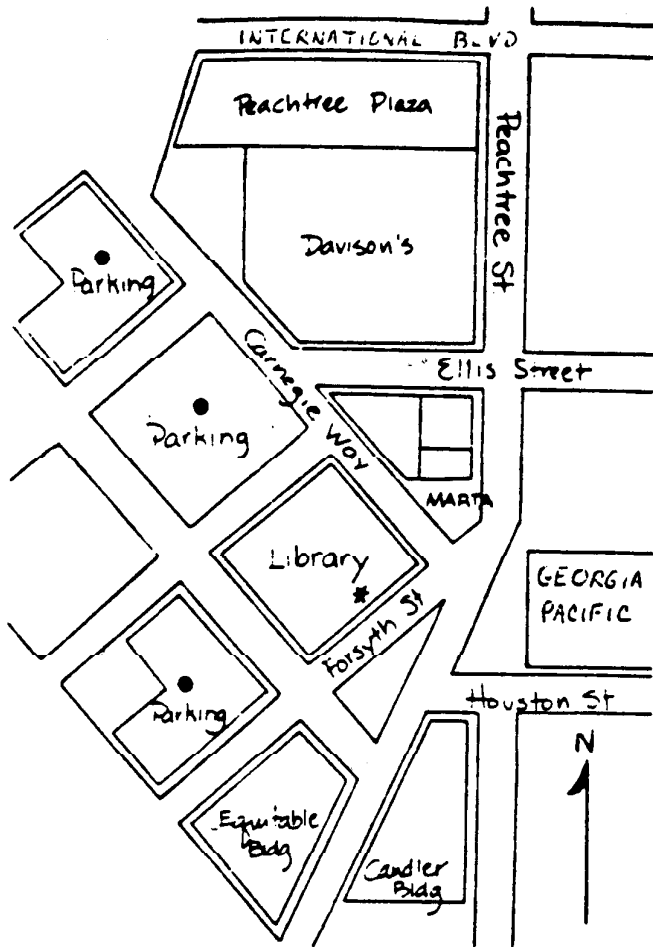
NEXT **M**EETING:
SUNDAY, **D**EC. 16
ATLANTA **P**UBLIC **L**IBRARY
3:00 P.M.

FOR MORE DETAILS, CALL 953-2013

(**A** **D**ONATION WILL BE REQUESTED -
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