OFFICAL NEWSLETTER OF THE
TIDEWATER 99/4 USERS GROUP INC.
51 GAINSBOROUGH PL.
Newport News, Va. 23602

JAN-FEB
1988

A Non-Profit Virginia Corporation
dedicated to educating and
enlightening TI-99/4 users
to the full potential
of home computing.

Dues FREE
DALLAS TI HOME COMPUTER GROUP
P. O. Box 29863
Dallas TX 75229

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MEETING NOTICE

The Southside Chapter meets every first and third tuesday of each month at E.C.P.I. (Electronic Computer Programming Ipstitute) located at 5555 Greenwich Road in Virginia Beach. Educational classes start at 6:30 P.M. followed by the regular meeting and discussion groups at 7:30 P.M.. Please note these dates and times on your calender.

The Peninsula Chapter meets every second Tuesday of each month in room 101 at Warwick High School located at 51 Copeland Lane in Newport News. Formal meetings begin at 7:30 P.M. with informal discussion before and after the meeting. The Library is open to members during informal sessions. Please note these dates and times on your calender.

PROGRAM CHAIRMAN SPEAKS

As the new program chairman for the Peninsula chapter, I would like to give some information on the programs scheduled for the remainder of the year. The first program presented was Funlwriter (Feb. '88) which generated a lot of interest as only about half of the group was using this program. In the coming months we plan to examine graphic software packages, "Freeware" of various types and utility programs. Multiplan, TI-Writer and other cartridges will be discussed. There will be tips on basic programming, too.

There will be hardware demonstrations and improvements that you can do to your computer-the alpha lock key fix and installing a reset bottom just to mention a few. If you have problems with your console locking out, a cleaning of the console port as well as the cartridges will help.

I am open to suggestions for programs or projects that any member would like to see or help present. Come on by and let's work together to get the most out of our computers.

The TI was orphaned in '83 but since then she has not only survived but has grown to become a beautiful lady who can strut her wares (software and hardware that is) with the best of them. Occasionally I will be giving a few lines in the newsletter to let you know how things are going.

Thank you and Happy Computing.

Howard R. Ingram
Peninsula Chapter

SOUTHSIDE NOTES

Due to the unavailbilty of a room at ECPI, it was decided the meetings will remain on the first and third tuesdays until further notice. Planning for the T.I. User's Group Pinic is now happening at the meetings. If you have any suggestions, we would like to here them. At the next meeting Feb 16 Ken Woodcock is donating a 300 baud modem (as is) as a door prize. You could be the lucky winner of this coveted gift.

The TECHIE BBS

It has been a couple of years now that we lost a vital link that connected the local TI community together in between our regular bi-monthly meetings. I'm speaking of Joe Randell, former member of the Tidewater 99/4A Users Group and operator of the Tidewater User Group Bulletin Board System (TUG). For me personally, this left a huge void, due to the fact that I could not attend meetings and keep abreast of current events and advances of the 99/4A. Well the opportunity arose and we thought we would give it another shot.
The TECHIE Bulletin Board System, written by Monty Schmidt is now online and here to fill that void!

TECHIE is mainly aimed at the TI user and full of information concerning your TI99/4A and GENEVE 9640. There are message bases for the TI, GENEVE, APPLE, COMMODORE, IBM, ATARI, HARDWARE, FORSALE and more. Xmodem Upload and Download capabilities, with a full DS/DD disk dedicated to download files. The What's New selection will keep you informed of new technologies, manufacturer releases, and things that others are doing with their computers. You can enter and retreive messages for direct input to others that use TECHIE. You can even make your messages private (MAIL), as to insure the person that you are sending it to, is the only one that reads it. Zeditorial file is a place where minds are spoken and equal space is given for conflicting veiws. Ken's Corner is a regularly updated selection written by Ken Woodcock guiding us through programming and personal hardware developement for TI users.

These are only 6 of the 27 MAIN MENU options currently available on TECHIE. TECHIE is extremly FRIENDLY and easy to use. Constantly, updated and changed as per User request, which is to say "We want TECHIE to be your BBS".
TECHIE is online from 7pm. to 7am. MON thru SAT. and all day SUNDAYS and HOLIDAYS. It supports 300 and 1200 baud rates, with NO MEMBERSHIP FEES or time limits.

Dial: 486-5937

If you do not have a modem and are interested in being able to access TECHIE, just contact me at the above number between 8am. and 5pm. or any of the officers of the user group listed at the beginning of this newsletter, and we will be happy to assist you in finding and installing a new or pre-owned modem, and get you online!

Also if TECHIE gets a favorable response, a dedicated line will be installed, so TECHIE can be accessed 24 hours a day.

Jim Brushwood

CORRECTIONS by Ken Woodcock

In my haste to get my articles into last month's newsletter, some errors crept in. This was due in part to the fact that my first submission was lost and the 2nd time arround I mistakenly used an interim copy.
In the article entitled " - MORE FLEXABILITY IN USING PRBASE - ", I listed a short Extended Basic program which would create the file descriptor record information to be copied to the PRBASE data disk. The program functions ok except that the number following the word - RELATIVE - needs to be doubled. Use 692 (instead of 346) for SSSD disks, 1412 for DSSD and 1418 for DSDD. This is because each record in PRBASE is 256 bytes long which requires 2 128 byte blocks.
In the article " - Selecting Your Colors in MY-WORD - ", there are 6 color combinations (not 5) which are indicated by hex codes 87F4 87F3 8717 87F1 87F6 871A (I left the 87F1 out) and they start at byte >80 (not >xx).
One small typo in the article " - How to use your 256K Horizon Ramdisk with GENEVE - ". Byte 180 is >B4 (not >64).

Sorry but on my calculator the B is lower case and looks like a 6 . . . . WELL,,, IT DOES!!!

ANOTHER NOTE ON PRBASE by Ken Woodcock
In using double density data disks with PRBASE, an interesting phenomina occured: the program would not stop at the last used record but continued on to the highest posible record - 708 (ver 2.1). Using DISK UTILITIES I found that sectors on a disk initialized single density are filled with >E5 while sectors on a double density disk contain >D7. Apparently PR-Base looks for the first sector with >E5E5 as the first two bytes to signal the first unused sector. I am trying to get the source code to try to modify that trait. An interm fix is to copy unused sectors from a single density disk to the unused sectors of the double density disk.

NEW PRODUCT NEWS: THE TMS-9999/BS CHIP
BY KARL SCHUNEMAN, PORT HURON, MI
TAKEN FROM CALL SOUNDS, JUNE, 86

Soon to be available is a new microprocessor chip that can be incorporated into the TI99/4A computer. Our research staff has been able to uncover a list of new opcodes that distinguish the 9999/BS as a major breakthrough in computer technology. The list is presented here for your information.

ABBA - PLAY SWEDISH ROCK
JTZ - JUMP TO ZAXXON PROGRAM
ADGB - ADD GARBAGE
KAL - FLY OVER RUSSIA
BAD - BARK AT DOG
MDB - MULTIPLY AND DROP BITS
BBL - BRANCH ON BURNED-OUT LIGHT
MWK - MULTIPLY WORK
BAH - BRANCH AND HANG
NOPE - REFUSE TO DO ANYTHING
BFEI - BEG FOR EXPANSION INTERFACE
OCD - OPEN COMMODE - DOOR
BLI - BRANCH AND LOOP INFINITE
PAS - PRINT AND SMEAR
BPB - BRANCH ON PROGRAM BUG
PIP - PULVERIZE INTERFACE PERIPHERAL
BPO - BRANCH IF POWER OFF
PSD - PERFORM SAFETY DANCE
BPM - BEGIN PIRATE MODE
RBT - READ AND BREAK TAPE
BRN - BURN UP HUG CHIP
REST - REST FOR 12 CYCLES
CFP - CALL FOR PROGRAMMER
RPM - READ PROGRAMMER'S MIND
CLD - TRY TO COOL DOWN HUG CHIP
RRT - RECORD AND RIP TAPE
CMS - CATCH MOUSE
RTR - REFUSE TO RUN
CRN - CONVERT TO ROMAN NUMERALS
RWD - REWIND DISK
CSD - CREATE STATIC DISCHARGE
SINK - SINK INTO I.C. SOCKET
DAO - DIVIDE AND OVERFLOW
SRZ - SUBTRACT AND RESET TO ZERO
DEVO - START NEW WAVE (SINE)
SSD - SEEK AND SCRATCH DISK
EIP - ERASE IF PIRATED
STI - SELL TI STOCK
ERS - ERASE READ-ONLY STORAGE
TLK - START SPEECH SYNTHESIS
ETOY - EMULATE COMMODORE-64
TPR - TEAR PAPER
HFA - HIRE FROM ATARI
TRS - TRASH PROGRAM
HCF - HALT AND CATCH FIRE
WED - WRITE AND ERASE DATA
HFC - HIDE FROM CHILDREN
WID - WRITE INVALID DATA
HFP - HIDE FROM PINTO
WOJ - WEAR OUT JOYSTICK
HIC - HELP INTEL CHIP
XBRA - GOTO ZOO
IAD - ILLOGICAL AND
XIO - EXECUTE INVALID OP CODE
IBM - INTERRUPT BAD MNEMONICS
XOR - EXECUTE OPERATOR
IOR - ILLOGICAL OR
XPR - EXECUTE PROGRAMMER
JOF - JUMP ON FLOOR
JOM - JUMP ON MOTOROLA
JOT - JUMP OFF TABLE CNP - CALL NATIONAL PARTS
RTM - RETURN TO MOTOROLA
CPB - CREATE PROGRAM BUG
RTT - RETURN TO TI
CPM - CORRECT PROGRAM MANUAL
RSD - READ AND SCRAMBLE DATA

WEFAX NEWS - UPDATE #4

WEFAX IS HERE!

The following was prepared by one of our own and covers the background surrounding his success producing Weather pictures with the TI computer. Several pictures were displayed during the first meeting in December. Wefax news - # 1-3 were issued in the FEB/MAR 87 and the JUN 87 issues. Background, sources of information and other data

were presented in these issues.

Weather Fasimile Software Information.

by Allen Leibrand

Do you have a general coverage short wave receiver? Do you have a dot matrix printer? Do you have a T.I. Home computer? If you have all three of these and a soldering iron, you too could be printing weather fasimile maps and pictures in the confort of you own home. If you don't you could benefit from the information developed with this research.

First we will cover the basic weather fasimile fundamentals. Fasimile is the art of sending pictures over a medium, such as radio. These pictures can be A.P. wire photos, satilite photos, or dipliction maps.

The image is sent as varying audio tones which change frequency with if the particular bit is white or black or a shade of gray. The image is scanned every half second, or two times a second.

So the first question you are thinking is how do I hook my radio to my computer? You will have to build an interface. At the time of this article there are two designs avalible. Both are still in the experimental stages of their development. One of these "The Device" is of my own design and I will write another article at a later date when I work out all the bugs...

The interface is only half the work. It won't work at all without software. The interface will provide a digital representation of the frequency of the signal coming from the radio. This takes the form of a four binary digit number. With four binary digits, you can have a number from 0 to 15 or 16 shades of gray. This data is then fed into the joystick port to be interpeted by the computer. The fifth line into the jotstick will be used for feeding in a sync signal.

The sync signal is a on/off signal generated from the interface to signal the computer when to preform a sweep.

At the beginning of the Fax transmission, the sync signal is aligned with the incoming picture By the computer looking for a black bar with a white pulse. When this condition exists, The computer will read the #2 joystick and in doing so will reset the clock which sends the sync signal.

Now the clock sync signal is aligned with the incoming picture. For printing a 960 pixel wide picture, we need to do a sweep every third line. The clock will be set for cycling every 1.5 seconds or .75 hertz. The computer will wait until the sync line is low. When this occurs, the computer will sample the four lines of the joystick #1, receiving a number, 0 to 15, or >0 to >F. This data is stored in a manner in memory in such a way so it can be sent directly to the printer.

The number 0 to 15 is converted into a zero or a one by a using a "maybe table" Simply put if the number scanned is a zero there is a 100% chance the pixel will come out as white. If the number is two, the chance of the pixel being white is 15/16 and so fourth. This gives a form of grayscale.

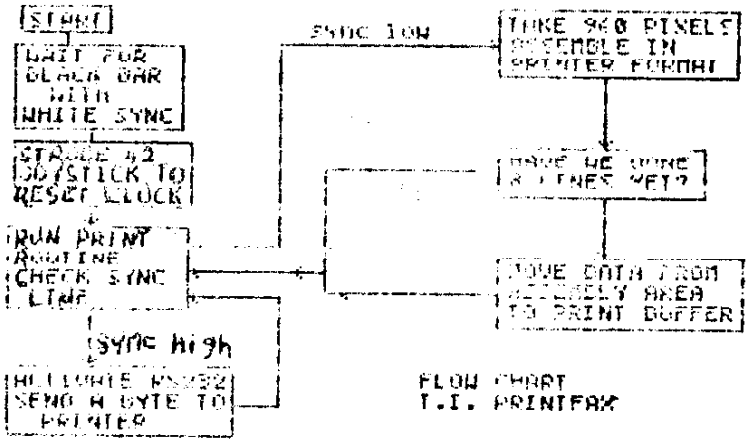
After 960 pixels or one line the computer checks to see if it has done eight lines. If eight lines are ready the data is sent to a print buffer in memory. If eight lines are not ready, the print buffer is checked to see if there is data to go to the printer. If not, the program goes to checking the sync line waiting to take another sweep.

By this time you may be wondering how the program can read both a up and down indication or a right and a left indication at the same time? Or how we can control the printer routine without getting hung up ang losing control of the timing of the program? Normally this can't be done using the built in DSRLNK or KSCAN subroutines, but who says we must use these aids. The simple fact is these devices are controlled by the CRU control lines. By setting or clearing these bits the joystick or the RS232 card can be manually controlled.

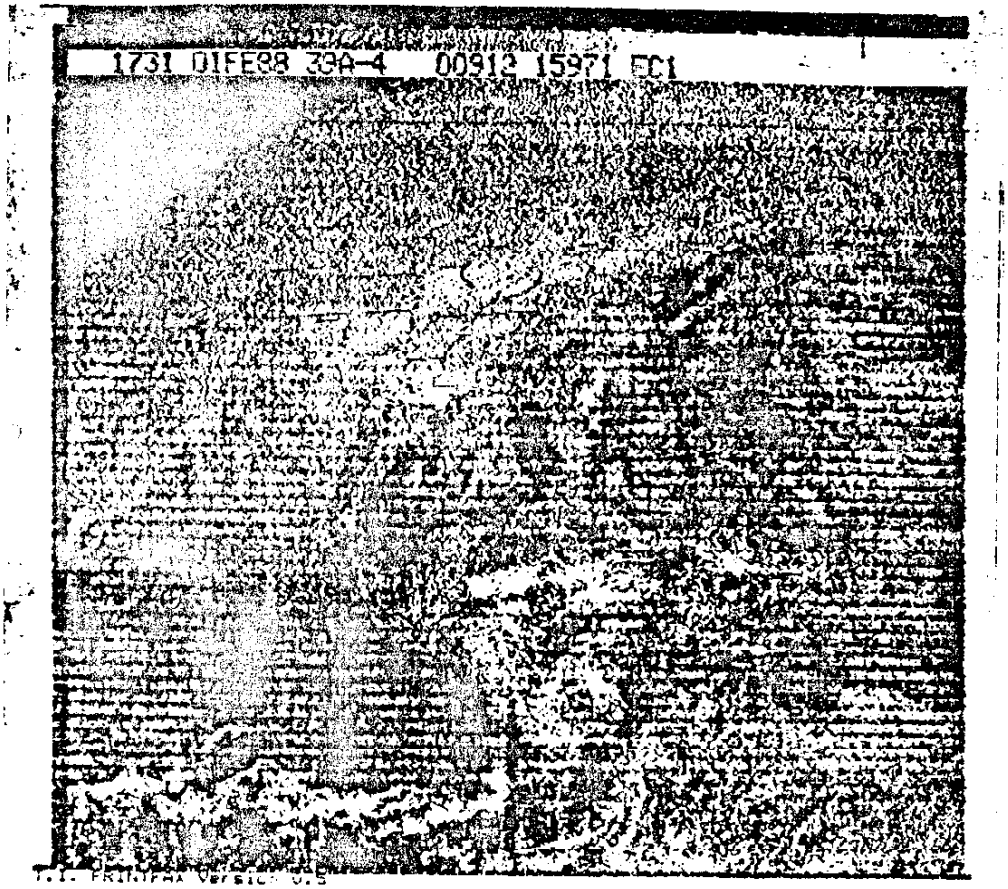
When data is present in the print buffer, the printer routine is accessed between line sweeps. First the RS232 card is turned on. This is done by

Setting the first CRU bit at the card's CRU address. Then the light is turned on by setting another bit. Then another bit is set for initilizing the PIO port as an output. A byte of printer data is moved to address >5000. This puts the data on the line for the printer to read. The strobe line to the printer is set low by clearing a CRU bit. This tells the printer to read the data on the PIO port.

When the printer receives the data the busy line goes low then high and this is detected by again reading the CRU bits. At this time the printer has now received one byte of data. The sync line of the interface is now checked to see if it is time to take in another line of data. If it is not time yet the printer routine will send one byte of data, again and again until the buffer is empty.



FLOW CHART
T.I. PRINTFAX



For more information about WEFAX
Contact:

Allen Leibrand
4168 S. Military hwy.
Chesapeake, Va. 23321
Or Phone 485-5809

MORE ON PR-BASE by Ken Woodcock.

Now that PR-BASE is accessable from XB, I decided to try it out. Everything seemed to be working fine until I started printing a phone list. Then I found that the name, phone #, act on some records all ran together, not separating spaces while other records printed properly. After a little more experimenting I once again booted DISK UTILITIES for a look at the data disk. What I found was that some records had >20 (decimal 32), the space character, for the bytes where no input had been made while other records had >00 instead. Now on the screen the both show as blanks but the printer knows the difference; it doesn't even bother to move the print head when it gets a >00. So, no spaces. Not knowing which version of PR-BASE puts zeros instead of spaces, (I started this data file using ver 1.0 then 2.0 and now use 2.1) I added a new record and checked. RATS!! Version 2.1 is guilty! (I suspect that 2.0 is too). This meant that conditions had to be compensated for after reading the record in to the EX-BASIC program. There are several alternatives: TABs could be used in the print # statements but not all printers recognize TABs. I wrote a short XB subroutine to check each character in the string and replace the zeros with spaces but it was sooooo slow. Assembly Language to the rescue! The routine listed below works very quickly and will suffice until PR-BASE is modified to put in real spaces instead of zeros.

```
*************************************************
* ROUTINTE TO CHECK A STRING OF CHARACTERS      *
* FOR >00 AND REPLACE THEM WITH A SPACE         *
*******by  Ken Woodcock************************
*     CALL LINK("CHECK",X$)  from XBASIC        *
*************************************************
        DEF  CHECK
STRASG EQU >2010
STRREF EQU >2014
STATUS EQU >837C     status byte
GPLWS  EQU >83E0     GPL workspace
ZERO   BYTE >00      byte to search for
SPACE  BYTE ' '      replacement byte
FF     BYTE >FF      maximum string length
       EVEN          start pgm on even byte
SAVE   BSS  2
WS     BSS  32       program workspace
BUFF   BSS  256      buffer for the string
CHECK  MOV  R11,@SAVE  save return address
       LWPI WS       use program workspace
       CLR  R3
       CLR  R4
       CLR  R0      \ use the STRREF routine to
       LI   R1,1     \ get the string from XB
       LI   R2,BUFF   |and put it into the
       MOVB @FF,@BUFF /buffer. the 1st byte of
       BLWP @STRREF  /BUFF has string length
       MOVB @BUFF,R4  string length to R4
       SRL  R4,8      move MSByte to LSByte
A1     INC  R3       R3 is counter
       C    R3,R4    have we checked all bytes?
       JH   RETURN   yes, back to XB
       CB   @ZERO,@BUFF(R3) no, check this one
* R3 is added to the starting address of the
* buffer and that byte compared to zero
       JEQ  A2       it is zero-change it
       JMP  A1       not zero-go to next one
A2     MOVB @SPACE,@BUFF(R3) space for zero
       JMP  A1       go to next byte
RETURN BLWP @STRASG  pass string back to XB
       MOV  @SAVE,R11 get return address
       CLR  @STATUS   clear status byte
       LWPI GPLWS
       RT             return to XB
       END
```

An Extended Basic equivalent is:

```
1000 X=POS(X$," ",1)::IF X=0 THEN RETURN
1010 X$=SEG$(X$,1,X-1)&" "&SEG$(X$,X+1,255)
::GOTO 1000
```