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THE
SPRITE

a monthly newsletter of
THE 9900 USER'S GROUP, INC.

A voluntary organization for the sharing of knowledge and resources of people having interests in, or ownership of 9900 processor based Home Computers.

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The Bulletin Board is available to all callers at no charge. Common courtesies prevail. The BBS is up most days 9AM - 11PM. The phone # for the BBS is 609-435-7301.

INTRODUCTION:

Here we are at the end of our 2nd year. Over a year after TI left us all adrift. We're still here! Not doing too bad actually. We still need to support the 3rd party developers. From what I've recently heard we may all be around a little longer. I hope everyone had a very fine Christmas and that the new year will have good times and happiness for all.

Now, let's get on to some of the stuff that newsletters are made of. So what do you think of 256k of storage for your 99/4A? It will be able to do a directory of any disk and NOT lose the program currently in memory! Nice. I could sure use that for my BBS. What I REALLY need is the capability to CALL and RUN subprograms at will. In other words allowing me to use the MERGE command as a STATEMENT!!! That would be nice! I could then have segments of my program on disk and use them when I need them. I just don't have the time to develop the assembly language program to do that. Ok all you hot shot assembly language programmers get with it. Remember, the requirements are to be able to run an Extended Basic program and load in a subprogram also written in Extended Basic and utilize it along with the 'Executive' still in memory. Of course the 256k RAM Disk will help. The company talking about this is out in California and I hope they go for it! Supposedly this new RAM Disk can hold programs, but can they be MERGED with an already RUNNING program?

Guess what came in the mail the other day? Magazines from Home Computer Magazine. I almost fell over when I saw the box. They have changed their style slightly in that the pages are no longer glossy and have restructured the subscription term to 10 issues a year. The magazine was packed with programs. However I found myself looking for advertisements. Sigh. I know they come out in a separate flyer but old habits are hard to break. After all, at this end of the magazine we are all consumers aren't we? I would say they are barely hanging in there and are a hair away from being bi-monthly.

Let's get on to other things. We have lot to put out this newsletter!

PASSING VARIABLES: via TINS, Nova Scotia

We all know that in Extended Basic, the SIZE command returns the number of bytes left for programming and the variable storage left. Character codes for displayable characters (127 thru 143), however, are stored in a SEPARATE protected area of memory. This is why you observe no difference in the memory available for programming after you define a character in this range. Assembly programmers will

recognize this as being the Pattern Generator Table (NOT to be confused with the Screen Image Table).

Since this area is not affected by a program it can be used to pass variable values between programs! Variable data need only be coded into a 16-character hexadecimal string (a pattern identifier). CALL CHAR is used to store this value. When the new program is loaded via the RUN statement you then use CALL CHARPAT to retrieve the string of data. REMEMBER these are STRINGS! If you are working with constants you must convert them to a string with the STR\$ statement before using the CALL CHAR and CALL CHARPAT statements and then change them back to constants with the VAL statement. For more info get a hold of "Transferring Variables in TI Extended BASIC!" by Patrick Parrish in COMPUTE's TI Collection Volume 1.

MODIFICATIONS: adding 'wonder switches' via the 'Eight by Eight', Huntsville, AL.

Just installed another switch on my 99/4A. Pretty soon this thing is going to look like a porcupine! I understand most of the switches I've installed can be implemented through software. Also, if you want to do some of this switching in XB or Assembly Language you can. Me. I prefer to just flip a switch or two. I don't have to think much to do it that way.

This last switch (a GROM PORT Reset line disable) makes a total of 3 which I have installed so far. Two of these are on the Speech Synthesizer, the third and most recent one is installed in the console. Now as usual, I nor the User's Group, can take responsibility for any damage come due to the use of this information. In other words, proceed at your own RISK.

ED NOTE: This same warning is reiterated by The 9900 Users Group. Incorporate these projects at your own risk.

The reset disable switch (Fig 1) is installed in series with the reset line on the GROM PORT (Cartridge Port) inside the console. This pictorial should be self explanatory. The reset disable, or just the 'reset switch' can be used by itself for resetting your console in the event of a lock-up. By just turning the reset line OFF then back ON. This has the same effect as turning the console off and then on. It performs a system reset and saves wear and tear on the console power switch and the consoles components from the effects of the power being turned on and off.

When used with the system (hold) switch this will allow you to turn the reset line OFF. Remove the module that you currently have in the GROM PORT and replace it with any other module and reactivate the computer without getting the title screen or resetting the computer! I will leave it up to you to decide what uses you wish to put these two switches to.

However, I will say that these two little switches will open a very large door to the 99/4A and it's peripherals plus some secrets that have been sought after for a long time.

Oh - the (Hold Switch) - thought you'd never ask! Actually, this was the second switch I installed, which I put in the speech module (it's easier to work on). See Fig 2. This figure should also be self explanatory. So, have fun and happy investigating.

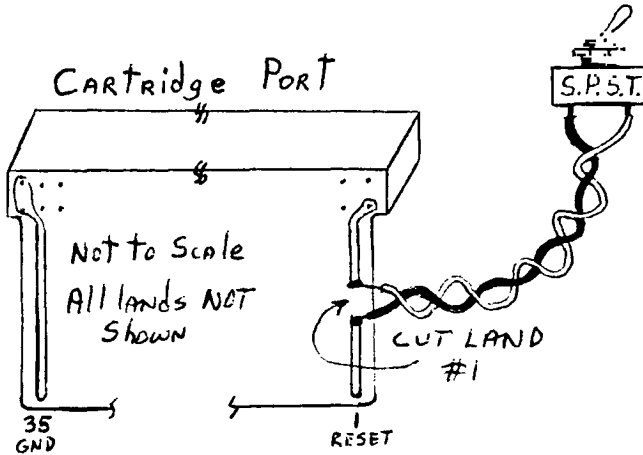


Fig. 1

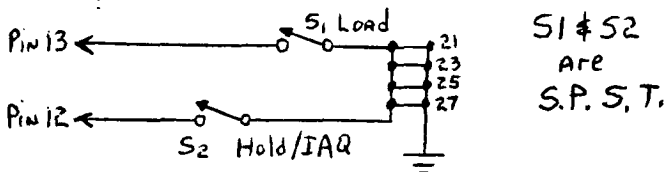
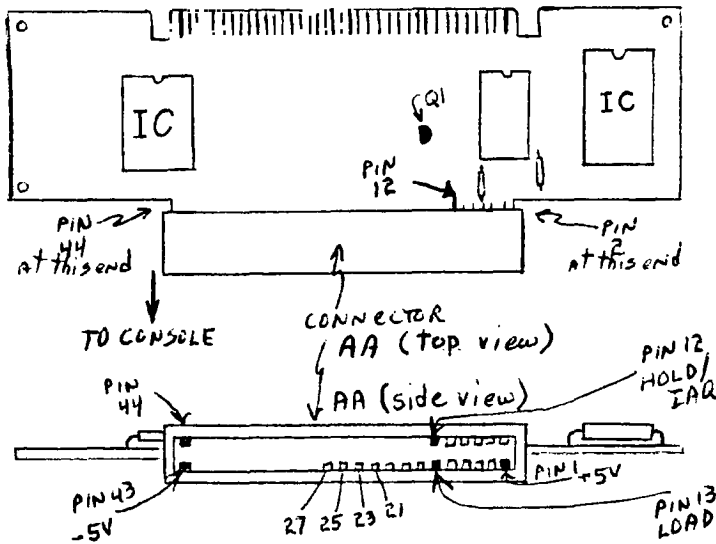


Fig 2

The GORILLA-GUIDE to TELECOMMUNICATION: PART III
(or, How to get on-line without making a monkey of yourself)
by Barry T. Bolenc, [71366,542]; (TI4439)

The very last choice on the set-up screen is marked "AUTO LOG-ON" and followed by "FILE=LOGON." This for a data file on disk which we will discuss in a later article (maybe), and is best left alone until you are comfortable using the TEL module without this feature. Just press "ENTER" for now. The screen should clear, the disk drive should come on and spin while the system looks for a disk file named DS41.LOGON, and then you should hear a BEEP when everything is ready. This should take about 3-4 seconds. If you don't have a disk drive, no problem, it should beep right away.

You say the computer didn't beep? It reset to the nice TITLE SCREEN with the color bars! You forgot to turn on the RS232 unit, or the P/E BOX then, or maybe you turned them on AFTER you turned on the console. Just turn off the console, turn on the RS232 and turn on the console again. While we're at it, let's just make sure the MODEM is turned on. If not, just turn it on. No need to turn everything else off and start over for that. It is on? OK.

* NOW FOR THE BIG STEP - WE'RE READY TO DIAL THE PHONE! *

CHAP 6 - CALLING A LOCAL BBS:

Read this section all the way through BEFORE you actually try doing it. I will explain things as we go along from time to time, and you don't want to tie up your phone (or the BBS system) while you read a paragraph of explanation before you can go on to the next step.

Pick up your phone and dial 435-7301. This is The 9900 User's Groups BBS. Note: The Delaware Valley user's Group BBS # is 322-3999. If you get a busy signal you can either wait and try again later, or move on to the next example.

The phone may ring one or two times before the MODEM on the other end answers. YES, I said the MODEM answers - what you are calling is a system equipped with one of the \$300 and up modems with all the 'bells & whistles' such as auto/answer and auto/dial. Most of the time there will not be a person sitting at the other end of your call. The program and modem of the 'HOST SYSTEM' are set up to answer the phone and start the session AUTOMATICALLY. You will hear the phone taken 'off-hook' at the other end, but no one will say "HELLO?". Instead, you will hear a high-pitched, steady TONE. This is the carrier tone! Once you have that, put the phone handset into the cups of your acoustic modem, or flip the switch on your direct-connect modem. (If you use a direct connect modem, you should now be able to hang up the phone).
should be able to tell if you are 'connected' or not by

Continued on Pg 5

TIPS FROM THE TIGERCUB

#16

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156 Collingwood Ave.,
Columbus OH 43213

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These Tips are being mailed, together with my new catalog #5, to every Users Group that I know of. I hope that you will make both the Tips and the catalog available to your membership. I am sorry that I cannot take out paid ads in your newsletters, but to advertise in each one of them would cost me more than I have made in the past 6 months, and I would not get enough business to break even.

If you would like to continue receiving these Tips, put me on the mailing list for your newsletter, and give me some indication that my Tips are really reaching your members and not going into someone's private file. If I receive enough business from this mailing to pay for its cost, I will then continue to send you my Tips. If not, this will be the last issue of the Tips from the Tigercub.

Copies of my catalog are available for \$1.00, which is deductible from your first order. I have over 130 absolutely original quality programs in Basic, many of them now also available in XBasic, on cassette or disk for only \$3.00 each plus \$1.50 per order for cassette, package and postage, or \$3.00 for diskette, package and postage (higher overseas). I give one-day service, I give bonuses for repeat orders, I give bonus programs on diskette orders.

In addition, any User's Group member who mentions his/her users' group when sending me an order before 1 Jan. 1985 may deduct 10% from the cost of the programs.

Tips from the Tigercub #1 thru #14 are now available, with more added, as a diskfull of 50 programs, routines and files for only \$15 postpaid.

I have also now completed my NUTS & BOLTS disk of 100 XBasic utility subprograms in MERGE format, ready to merge into your own programs, for just \$19.95 postpaid.

In The last Tips, I mentioned that I wished I knew who to credit for that remarkable routine to redefine the cursor. Dave Peden has written me that credit should be given to Terry L. Atkinson of 28 Savona Ct., Dartmouth, NS B2W 4R1 CANADA.

And I would like to strongly recommend that you support the 99'ers Users Group Association, 3535 So. H st., #93, Bakersfield CA 93304. They are a strictly non-profit group, devoting a lot of time and effort to helping us all, and they publish a great newsletter..

Every Tips must include a bit of music, and my grandson has requested that I pass this one on to all other two-year olds.

```
100 !ALPHABET SDNG - by Jim Peterson
110 DIM N(21)
120 CALL MAJORSCALE("C",N())
130 CALL SCREEN(5):: DISPLAY
  AT(24,1)ERASE ALL:"READY -
  TYPE THE ALPHABET" :: CALL M
  AGNIFY(2)
140 CALL KEY(3,K,ST):: IF (S
  T<1)+(K<65)+(K>90)THEN 140 :
  : CALL SPRITE(#1,K,16,96,120
  ):: IF K=87 THEN GOSUB 220 E
  LSE GOSUB 200
150 IF (K=90)$(FLAG=0)THEN 1
  60 ELSE 140
160 FLAG=1 :: M$="C115566D5C
  443322D1" :: T=150
165 FOR J=1 TO 18 :: CALL SP
```

```
RITE(#J,64+J,INT(11#RND+6),9
6,128,J#5,J#5)
170 X=ASC(SEG$(M$,J,1)):: IF
  X>58 THEN T=150+(X-64):: 60
  TO 190
180 X=X-48 :: CALL SOUND(T,N
  (X),0)
190 NEXT J :: FLAG=0 :: CALL
  DELSPRITE(ALL):: GOTO 140
200 Y=VAL(SEG$("115566544332
  22215543325332",K-64,1))
210 CALL SOUND(500,N(Y),0)::
  RETURN
220 CALL SOUND(500,N(S),0)::
  CALL SOUND(500,N(S),5):: CA
  LL SOUND(500,N(4),0):: RETUR
  N
230 SUB MAJORSCALE(K$,N())
240 F=VAL(SEG$("110123131147
  165175196",POS("ABCDEF6",K$,
  1)#3-2,3))
250 C$="10101101010110101101
  0101101011010101"
260 FOR J=1 TO 36 :: IF SEG$
  (C$,J,1)="0" THEN 280
270 X=X+1 :: N(X)=F#1.059463
  094^(J-1)
280 NEXT J :: SUBEND
```

Lines 230-280 of that routine are an example of the kind of handy-dandy subprograms you will find on my Nuts & Bolts disk.

We haven't had a Tigercub Challenge for some time, so -

How can you store a hundred or more values of any size, positive or negative, integer or non-integer, even in exponential notation, without dimensioning an array or opening a file?

Now, how can you link your program to another by a RUN statement, thereby losing all data, and recover those values? Yes, I know you can save them on the screen and read them back, but can you find a better way?

Here's a little demo program of how motion can be created by the repetitive redefinition of characters. I call it ETERNITY.

```
100 CALL CLEAR :: CALL SCREE
  N(2):: CALL COLOR(1,16,1)::
  CALL CHAR(33,"",34,"",35,"",
  36,"")
120 FOR R=1 TO 12 :: CALL HC
```

```

HAR(R,R+4,33,26-R#2):: NEXT
R
150 FOR K=13 TO 24 :: CALL H
CHAR(R,29-R,34,(R-12)*2):: N
EXT R
180 FOR C=5 TO 16 :: CALL VC
HAR(C-4,C,35,34-C#2):: NEXT
C
210 FOR C=17 TO 28 :: CALL V
CHAR(29-C,C,36,C#2-33):: NEX
T C
225 FOR J=0 TO 7 :: A$(J+1),
B$(8-J)=SEB$( "00000000000000
",1,2#J)&"FF" :: NEXT J
230 C$(1),D$(8)=RPI$( "80",8)
:: C$(2),D$(7)=RPT$( "40",8)
:: C$(3),D$(6)=RPT$( "20",8)::
C$(4),D$(5)=RPT$( "10",8)
240 C$(5),D$(4)=RPT$( "08",8)
:: C$(6),D$(3)=RPT$( "04",8)
:: C$(7),D$(2)=RPT$( "02",8)::
C$(8),D$(1)=RPT$( "81",8)
250 FOR C=2 TO 15 :: FOR J=1
TO 8 :: CALL CHAR(33,A$(J),
34,B$(J),35,C$(J),36,D$(J)):
: NEXT J :: CALL SCREEN(C)::
NEXT C :: GOTO 250

```

Next, I would like to share with you a gem of a "why didn't I think of that" routine which John Taylor sent me.

```

100 ! 28 COLUMN TEXT ROUTINE
IN EXTENDED BASIC (EASILY
CONVERTED TO BASIC) BY JULIE
PACK, B.U.G., P.O. BOX 1402
PALM BAY, FL 32906
110 ! ENHANCED BY JET
SHOALS 9Y'ERS, P.O. BOX 2928
MUSCLE SHOALS, AL 35662
120 CALL CHAR(64,"00282828")
130 ! PROGRAM TO COPY STARTS
HERE
140 CALL CLEAR :: X=-1
150 RESTORE
160 IF X)=21 THEN X=1 :: CAL
L WAIT
170 READ MESS$
180 IF MESS$="P" THEN DISPLA
Y AT(X+2,1):Z$ :: X=X+4 : Z
$="" :: GOTO 160
190 IF MESS$="ZZZ" THEN DISP
LAY AT(X+2,1):Z$ :: CALL WAI
T :: END
200 IF LEN(Z$)>0 THEN MESS$=
Z$&"&MESS$
210 X=X+2
220 IF X)=21 THEN X=1 :: CAL
L WAIT

```

```

230 IF LEN(MESS$)<29 THEN DI
SPLAY AT(X,1):MESS$ :: Z$=""
:: GOTO 160
240 FOR A=1 TO 29
250 I=POS(MESS$, " .A)
260 IF (I=0 OR I>29)AND A=1
THEN A,J=29 :: GOTO 290
270 IF I=0 OR I>29 THEN A=29
:: GOTO 290
280 J,A=I
290 NEXT A
300 IF X)=21 THEN DISPLAY AT
(X,1):SEB$(MESS$,1,J-1):: X=
-1 :: CALL WAIT :: GOTO 320
310 DISPLAY AT(X,1):SEB$(MES
S$,1,J-1)
320 IF SEB$(MESS$,J,1)=" " T
HEN I=1 ELSE I=0
330 Z$=SEB$(MESS$,J+1,163)::
MESS$=Z$ :: IF LEN(Z$)>28 T
HEN X=X+2 :: GOTO 240
340 GOTO 160
350 DATA "THIS SHORT ROUTINE
WILL ENABLE YOU TO WRITE LO
NG TEXT MATERIAL IN YOUR DAT
A STATEMENTS SO YOU WON'T HA
VE TO WORRY ABOUT COUNTING"
360 DATA "THE LENGTH OF YOUR
SENTENCES ALL THE TIME. TH
IS ROUTINE WILL AUTOMATICALL
Y EDIT YOUR TEXT TO FIT A 28
COLUMN SCREEN."
370 DATA "A SUGGESTION- IT I
S A GOOD IDEA TO PUT A QUOTE
AT THE BEGINNING AND END OF
THE DATA STATEMENTS SO YOU
WON'T HAVE TO WORRY ABOUT"
380 DATA "COMMAS LIKE THIS ,
,, AND THEY WILL REMAIN IN Y
OUR TEXT PROPERLY."
390 DATA "THIS ROUTINE WILL
ALSO CLEAR THE SCREEN (WHEN
FILLED) AND CONTINUE READING
YOUR DATA AND DISPLAYING YO
UR TEXT ON THE NEXT SCREEN."
400 DATA P
410 DATA " TO START A NEW P
ARAGRAPH ENTER THE LETTER @P
@ AS A SEPERATE DATA STATEME
NT, THEN INDENT YOUR TEXT ON
YOUR NEXT NEXT DATA"
420 DATA "STATEMENT 2 OR 3 S
PACES (IF DESIRED).",P,"TO S
KIP LINES",P,"JUST ENTER @P
@",P,"WHERE EVER YOU WANT TO
",P,"SKIP."
430 DATA P,"MAKE SURE THAT Y
OUR VERY LAST DATA STATEMENT

```

```

IS @ZZZ@, AND JUST REPLACE
THESE DATA STATEMENTS WITH"
440 DATA "YOUR OWN.",P,"YOU'
LL ALSO FIND THIS ROUTINE IS
MOST USEFUL WHEN CONCATENAT
ING STRINGS, E.G., @ELIZAE T
YPE PROGRAMS-",P
450 DATA "AN EXAMPLE:",P,"A$
=@JACK AND JILL WENT UP@",P"
$=@THE HILL TO FETCH A@",P"
=@PAIL OF WATER.@",P"D$=A$&B$
&C$&D$".PRINT D$,P
460 DATA "JACK AND JILL WENT
UP THE HILL TO FETCH A PAIL
OF WATER.",P,P,P,"HAPPY PRO
GRAMMING!"
470 DATA ZZZ
480 SUB WAIT
490 DISPLAY AT(24,8):"PRESS
ANY KEY"
500 CALL KEY(0,K,S):: IF S=0
THEN 500 ELSE CALL CLEAR
510 SUBEND

```

Thank you, Julie and John. This is becoming one of the most useful routines on my utility disk. I was preparing a disk of PD programs for our UB library. Some of them needed extra instructions, so I typed them out on TI-writer, so that people could run them off on their printer. Then I remembered that some folks don't have printers. So -

```

50 CALL CLEAR :: INPUT "FILE
NAME? DSK1."?:F$
60 DIM B$(150):: OPEN #1:"DS
K1."&F$,INPUT, DISPLAY ,VAR
IABLE BU
70 A=A+1 :: LINPUT #1:B$(A)
80 IF EOF(1)=1 THEN B$(A+1)=
"ZZZ" ELSE 70
and change line 170 to -
170 @=@+1 :: MESS$=B$(@)

```

And there you have a quickie program to check out those DIS/VAR 80 files that show up on your disks under filenames that you can't remember using.

MEMORY FULL IN LINE 32767

looking at the modem. Most modems have what is called a "Carrier Detect" light. This should now be lit, and stay lit until you end your session and disconnect.

What's that? You called, got the carrier, did everything else - and the system on the other end HUNG-UP after about 30 seconds! Ok, you either took too long a time to get your modem on, or you set up your modem to ANSWER instead of ORIGINATE. The 'auto/answer' feature of the modem on the other end will generally wait 30 seconds to receive the ORIGINATE tone from your modem. If it does not get this tone within that time, it will automatically hang up and reset the program of it's system. If you flipped the ORIGINATE/ANSWER switch on your modem to ANSWER by mistake, you're sending the wrong tone and the other modem behaves exactly the same as if you had not answered it in time (or at all).

Ok. Now, if we've done everything right, we are 'ON/LINE'! Most BBS's will start sending you something right away. Wait a few seconds to see if this is the case. Otherwise, some systems requires you to hit the "ENTER" key once or twice to let them know you are there! **Ed Note:** This scheme of hitting 'ENTER' or sometimes 'ESC' is often used by the HOST to determine your BAUD rate before the session begins. Our BBS will begin transmitting as soon as your proper carrier is detected. When I upgrade to 300/1200 Baud I will employ this scheme.

After the initial screen is presented that pertains to who we are and the Copyright statement the next screen will have system parameters. The system will then ask for a User #. Here you will enter NEW if this is your first time into the system. You will then be asked to supply your name and location you are calling from. You will also need to supply a valid phone #.

NOTE If you are using a TV, and find that the first 1 or 2 letters of each line are being printed too far to the left on your screen so that you can't read them, Hang-up and start over. This time when you get to the line of the TEI set-up menu which asks for the "COLUMN WIDTH", choose 38 or 36 to correct this. Then proceed as above.

Ed Note: It is not always necessary to break the phone line connection (hanging up) to reset TEII parameters. If you hit FCTN-QUIT you will of course return to the Main Title Screen. You will NOT however lose you 're connection (or link). Simply reenter TEII but DO NOT select default. Select Terminal Emulator II selection, make your entries and press ENTER. When you get back to the communications mode you should still be connected to the HOST system.

MICROpendium:

If you're looking for a good comprehensive source of

information the MICROpendium is for you. They are getting bigger and better. They're subscription rate is \$12 for 12 issues. For First Class add an extra \$3.50 to the basic subscription price. This 'extra' cost is worth it. Send you're check or money order to: MICROpendium at P.O. Box 1343, Round Rock, TX 78680. Don't delay, information is the key to our survival!

ASCII TEXT to MERGE FORMAT program: via MANNERS NEWSLETTER

I've had a few requests for converting TI Writer type files into runnable programs. Of course the DIS/VAR 80 file to be converted must be a program listing such as what follows. Have fun

```

100 ! *****
110 ! *
120 ! * ASCII TEXT FILE *
130 ! * TO *
140 ! *
150 ! * MERGE FORMAT *
160 ! *
170 ! *****
180 !
190 !
200 !
210 ! SUBFILES
220 !
230 ! 7/1/84
240 !
250 !
260 DEF P(M$)=POS(M$," ",1)-1
270 !
280 ! *****
290 ! * TITLE SCREEN *
300 ! *****
310 !
320 CALL CLEAR
330 DISPLAY AT(2,1):"ASCII FILE REFORMATER" :: DISPLAY
AT(3,1): RPT*("#",22)
340 DISPLAY AT(8,1):"DO YOU NEED INSTRUCTIONS? "&
CHR$(30):: CALL KEYANS(XK,XR):: CALL hChrR(8,29,XK)
350 IF XR=1 THEN GOSUB 980
360 DISPLAY AT(12,1):"INPUT FILE? DSK1." :: ACCEPT
AT(12,17)SIZE(-12)BEEP:INFILE$
370 DISPLAY AT(14,1):"OUTPUT FILE? DSK1." :: ACCEPT
AT(14,17)SIZE(-12)BEEP:OUTFILE$
380 DISPLAY AT(16,1):"ARE LINE #'S INCR BY TEN? "&
CHR$(30):: CALL KEYANS(XK,XR):: CALL hChrR(16,29,XK)
390 !
400 !
410 ! *****
420 ! * SET UP FILES *
430 ! *****
440 !

```

```

450 OPEN #1:"DSK"&INFILE$,INPUT
460 OPEN #2:"DSK"&OUTFILE$,OUTPUT,VARIABLE 163
470 !
480 CALL CLEAR :: PRINT "One Moment....":
490 !
500 !
510 ! *****
520 ! * MAIN LOOP *
530 ! *****
540 !
550 LINPUT #1:A1$
560 IF A1$="" OR LEN(A1$) < 3 THEN 540
570 IF EOF(1) < 0 THEN 620
580 LINPUT #1:A2$
590 IF XR=0 THEN 620
600 P2=P(A2$):: IF P2(1) THEN P2=1
610 IF SEG$(A2$,1,P2)() STR$(VAL$(SEG$(A1$,1,P(A1$)))
+10) THEN A1$=SEG$(A1$&RPT$(" ",80),1,80)A2$ :: GOTO 570
ELSE 640
620 IF SEG$(A2$,1,1)=CHR$(13) THEN A1$=SEG$(A1$&RPT$(
" ",80),1,LEN(A1$))&SEG$(A2$,2,LEN(A2$)-1):: GOTO
570
630 !
640 GOSUB 860
650 !
660 A1$=A2$
670 IF EOF(1)=0 THEN 570
680 IF SEG$(A1$,1,1) < CHR$(13) THEN GOSUB 860
690 !
700 ! *****
710 ! * CLOSE FILES *
720 ! *****
730 !
740 PRINT #2:CHR$(255)&CHR$(255)
750 CLOSE #1 :: CLOSE #2
760 PRINT "The File: ";SEG$(OUTFILE$,3,
LEN(OUTFILE$)-2): "Has been created."
770 PRINT "Do Another File? " :: CALL HCHAR(23,20,30)::
CALL KEYANS(XK,XR):: CALL HCHAR(23,20,XK)
780 IF XR=1 THEN 190
790 CALL CLEAR :: END
800 !
810 !
820 ! *****
830 ! * CREATE MERGE FILE *
840 ! *****
850 !
860 B=P(A1$)
870 C=INT(VAL$(SEG$(A1$,1,B))/256)
880 D=VAL$(SEG$(A1$,1,B))-(C*256)
890 E=LEN(A1$)-B
900 PRINT A1$
910 A1$=CHR$(C)&CHR$(D)&SEG$(A1$,B+1,LEN(A1$))&CHR$(0)
920 PRINT #2:A1$ :: RETURN
930 !
940 ! *****

```

```

950 ! * INSTRUCTIONS *
960 ! *****
970 !
980 CALL HCHAR(8,1,32,512)
990 CALL CENTER("INSTRUCTIONS",9)::
CALL CENTER("-----",10)
1000 FOR PAGE= 1 TO 6
1010 FOR LINE=12 TO 21 STEP 2
1020 READ M$
1030 CALL FILL(LINE,0,M$)
1040 NEXT LINE
1050 CALL CONTKEY
1060 CALL HCHAR(12,1,32,416)
1070 NEXT PAGE
1080 RETURN
1090 !
1100 DATA This utility will read any ASCII text file and
turn it into a MERGE file ready to load and run in
TI-BASIC.
1110 DATA Any text file stored in DIS/VAR 80 format can
be used as the input file. The input file can be a
file retrieved with the TEII.
1120 DATA or data written with TI writer, etc.
1130 DATA If the input file is written using TI-writer
you must remove all (CR)'s *BEFORE* using this
merge program.
1140 DATA If the input file contains lines of 80+ length
a "CR" *MUST* be the 1st character of the extended
line.
1150 DATA If the line numbers of the input file are
increments of 10 *BEFORE* using this program- answer yes
1160 DATA to the second question prompt.
1170 DATA After this program has created the merge file
you must load the merge file and remove the one extra space
1180 DATA at the start of each line before it will run
1190 DATA then save the program.
1200 !
1210 !
1220 !
1230 ! *****
1240 ! * *
1250 ! * S U B P R O G S *
1260 ! * *
1270 ! *****
1280 !
1290 !
1300 SUB KEYANS(XK,XR)
1310 CALL SOUND(150,1100,0)
1320 CALL KEY(3,XK,XS):: IF XK=76 THEN XR=0 ELSE IF
XK=89 THEN XR=1 ELSE 1320
1330 SUBEND
1340 SUB CONTKEY
1350 DISPLAY AT(24,2):"Press Any Key to Continue" ::
CALL SOUND(150,1200,0)
1360 CALL KEY(3,K,S):: IF S=0 THEN 1360
1370 SUBEND

```



```

1380 SUB CENTER(M$,R)
1390 C=INT((28-LEN(M$))/2):: DISPLAY AT(R,C):M$
1400 SUBEND
1410 SUB FILL(R,I,M$)
1420 FOR X=1 TO LEN(M$)
1430 IF LEN(M$)=28-I THEN 1450 ELSE IF SEG$(M$,X,1)=" "
    THEN M$=SEG$(M$,1,X)&" "&SEG$(M$,X+1,LEN(M$)-X)
    :: X=X+1
1440 NEXT X :: GOTO 1420
1450 DISPLAY AT(R,29-LEN(M$)):M$
1460 SUBEND

```

BULLETIN BOARD STATUS: call 609-435-7301

The BBS is hanging in there Ok I guess. I've made some more mods and have now included what we have of our Library listing to date, a Help segment, you will now be qued as to where you left off during the reading of messages. Progress is good. Use is below average though. However, that could be due to poor advertisement I guess. We'll see how it fares after Christmas. If YOU don't use it it will go away just like the dinosaurs. Leave messages! I won't. Otherwise the BBS will only have my views. That's not what it's for. I do THAT here! Get a modem, there's a lot of communicating going on!

The BBS was down for a few days while I patched another problem caused by a surge or static discharge etc. It was a real nasty. I got no error print outs but the system went into a kaleidoscope of activity. I've made a couple of changes to keep that from knocking the BBS down for more than a day. This last time was 3 days over Christmas. There's no way to totally prevent things of that sort but each event is a learning session. The big key was to move all files on one disk and all messages to the 2nd disk and REMOVE the system disk after load up was accomplished.

SO WHAT ELSE IS NEW!!!

PUT IT HERE, IN YOUR NEWSLETTER!!

NEW BOOK:

By popular demand, Computer Snooper has compiled the "Innermost Secrets of the TI99/4A", Randy Holcomb's series into book form. It is \$5.95 (I incorrectly gave a much higher figure at the meeting!) and digs into the TMS9900 microprocessor, gives tips for assembly language and has a disassembly of the RS232 DSR ROM.

HINTS and KINKS:

The TRIUMPH OVER 'FUNCTION QUIT' -

Many things have happened since we were set adrift and one of the best was the 'turning-off' of FUNCTION QUIT. Many however can't recall where to CALL LOAD. That value has been in a 1000 different newsletters. That's NOT what this article is about. All right, for those who are just itching to know it's CALL LOAD(-31805,16). That disables function quit. However, what if you didn't do that or your computer locks-up and your forced to go to the main title screen. There is hope. I hope also that you have 32k RAM and either Ed/Assem, Mini-Mem, or Ext/BASIC. You can also do this with the CorComp Disk Controller Card from BASIC!!

There are 2 locations in the PAD that are pointers to the first and last lines of a program. These values are the 'ends' of the line number table. Each entry in the line number table is 4 bytes, 2 for the line #, and 2 for the location where that line # is in memory. The 'line #' and the associated 'statements' are in DIFFERENT locations in your computer.

When you FCN-QUIT to the main menu only the pointers and other values in PAD (CPU RAM in your console) are cleared. Everything else, line number table and statements are still untouched in the 32k RAM. This is true as long as you don't power down the Expansion Memory.

The first thing you do is perform a call peek on your resident program as follows: CALL PEEK(-31952,A,B,C,D) and then PRINT A:B:C:D. Copy these values on a sheet of paper for later reference. Do this from the IMMEDIATE Mode rather than 'in' a program. Now, if you find yourself at the title screen for whatever reason all you have to do is CALL PEEK(-31952,167,23,154,32) for example, using of course the values you initially peeked. Enter LIST and voila! Your program, right where you left it.

If perchance you have modified your program since you peeked the initial values don't fret too much. All you have to do is DECREASE the 2nd byte by 4 (what was peeked as value B) for EACH LINE NUMBER you added. If you don't remember how many lines you entered then proceed by trial and error. If you have deleted the BEGINNING part of your program then DECREASE the 4th byte by 4 (what was peeked as value D).

The best thing to do with this information is to put in a small 3 or 4 line simple program and experiment with it until you have the feel of what is happening. Next month we'll show you a good use for this. In the meantime get proficient at this technique because next issue we get serious. Have fun!

NEW MAGAZINE: Mini-Mag 99 via Lenigh 99'er Computer Grp

S.O.S. Publishers is preparing a new mini magazine. Exclusively for the TI-99/4A users, Mini-Mag 99 will include feature articles, "new" product reviews, book reviews, news items, etc.

To receive your first FREE issue write to:

S.O.S. Publishers
21777 Ventura Blvd. #203
Woodland Hills, CA. 91364
(818)704-0145.

Don't miss out! The first issue will be out January 20, 1985.

PRODUCT REVIEW: Super-Sketch by Larry Wittenberg

Still have some Christmas shopping left? Tommy and Sue are still in need of software for the computer? Well have I got something really nice for them. The other day we picked up a Super Sketch developed by Personal Peripherals, Inc. of Irving, Texas.

I did not even get it unpacked before my two girls took over and started to draw a picture without even checking out the instructions that came with it. It's that easy to use. There are 15 different colors you can select along with a texture option that allows for you to creat 15 new colors when mixing with the background color. There is a >Swap< command that will let you swap a color that you previously used with another color. The >Fill< command will let you automatically paint in any large area with just one command.

There are a few other menus worth mentioning here. They are the >Brush< command which will give you 9 different widths to work with other than the standard fine point. The last menu was the >Expert< command which I found to be very interesting. It allows you to draw lines, rays and boxes both vertically and horizontally between to points that you select. This menu also contains the commands to save and retrieve you picture on tape.

Another neat thing about this sketch pad is that you don't need your keyboard for any work at all. Everything is handled by using 4 buttons on top of the tablet and moving the control arm that you draw with.

When I finely got to use this I thought I had the answer to all my graphic problems but to my dismay I found only a few answered. Still it is a great tool for all to use including people like me who can't draw a straight line even with a ruler.

The only two disadvantages I found where not being able

to dump to a printer and save to a disk drive. Although you can save to a cassette unit. We did here a rumor that there is a updated version coming out soon. It sure would be nice if it had these routines added to it.

This neat Super Sketch can be had for about \$50.00 locally.

INFOCOM Hints:

Every month I try to give all of you adventure fans a few hints to the three Zork adventures from Infocom. I also found a neat pocket book called "The Forces of Krill" a Zork adventure series pocketbook. Ask if you would like to buy one for a measly \$2.00

Zork I:

1. Birds leave these things in trees, but don't open it. (Also brought by Easter Bunny)
2. In the Gallery is a treasure. Put it where you would keep treasures.
3. Cyclops are known to have a taste for hot pepper sandwiches.

Zork II

1. In the Gazebo there are many tools to work with.
2. Topiary Stay away or you'll be dinner.
3. Want to kill a dragon? Lure him south and use karate and some fancy fencing.
4. Don't forget to return to the lair of your friend when you dispose of him and open the treasure chest.

Zork III

1. Don't climb the endless stairs else you won't be endless.
2. Old men are known to like cliff bread (really?)
3. Sailors are friendly chaps when on flat oceans. Why not say hello.

LINK LISTS: A Data Structure Scheme by Walter M. Dehmer

Two problems with using sequential storage schemes are that a fixed amount of storage must allocated for data, and to insert data into a particular location in a sequential storage structure, such as an array, may require large amounts of data to be shifted to accomodate the new data, thus slowing down data oriented programs. Link list is a dynamic storage scheme that solves these problems. A link list is a set of locations called "nodes" which are chained

so that each node points to other nodes. Basically, a node contains two fields, an "information field" containing data (character or numeric) and a "next address field" that gives the location of the next node.

A simple link list is made up of nodes consisting of an information field and a single next address field. A queue can be considered a simple link list. Double link lists require two next address fields in each node. Multi link lists use multiple next address fields. Data can be stored anywhere in memory as long as it is in node form and points to the next valid node. Inserting and deleting nodes simply requires changing the value in the next address field.

To implement a simple link list in basic requires two arrays, call them INFO and NEXT. Data is stored in INFO and indexes to the INFO array are stored in the NEXT array. Initially the indexes stored in NEXT array will be sequential, but as deletions and insertions are made to the list this will change. A special symbol or character string is used in the next address field of the 1st node to mark the end of the list. The increased memory required for insertion, deletion and create node procedures to use link list is a trade off for faster data manipulation. There are many algorithms associated with link lists, their development and implementation are an interesting aspect in data structure concepts.

EXT. BASIC ARTICLE: by Nick C. Santorineos via WDCTIUG

1. Sprites are user-defined graphics, which are able to appear anywhere on the screen, and move fast and smoothly in high resolution. Once set in motion, they move continuously without any additional programming effort until they are deleted or until program terminates.

2. Motion is initiated by the user by simply selecting the starting point of the sprite on the screen (row -X- and column -Y- coordinates) and by specifying the direction of travel, as well as the speed (velocity) by which the sprite will move.

3. The electronic circuit, responsible for sprite generation is called "TMS9918A Video Display Processor (VDP)". Unlike other computers, the VDP allows the creation of any possible pattern by the user through a relatively simple process. It allows 28 sprites to be present on the screen, and monitors all of their attributes constantly, such as direction, coincidence, ect.

4. The VDP is also capable of accepting external video (such as inputs from VCR or VBP) and produce "mixed" sprites (sometimes called Movable Object Blocks -MOB'S). The TI-99/4A has no provision for for such applications at the present time, but the potential for educational and game

applications are great, and a number of "hackers" and "third party" manufactures and programmers are working seriously in that direction. This procedure of external video input is called "simultaneous video mixing".

5. The VDP considers the screen as a 32-level (plane) display, and numbers these planes 0-31. The first two of these planes are the "multi-color and patterns" and the "backdrop". The first is used for textual and fixed graphic images, while the second is slightly larger, forming a rectangular frame around the other elements of the display.

6. Sprites can be generated on any of these planes (28 maximum). Although there may be a number of sprites generated, only 4 can be visible on the same horizontal row at the same time. The others are there, and will become gradually visible as one of the "visible" sprites starts moving away from that row. If this is attribute of the VDP is programmed properly, it can create "shadows", as well as many other "real life" images.

7. The TMS9918A VDP operates in 4 modes:

a. Pattern Mode (Graphics 1)

In this mode the screen is divided into a 24-row (X-coordinate) by a 32-column (Y-coordinate) grid. Each grid square is an 8 x 8 matrix of dots called "pixels" and each matrix can have any 2 the standard 15 colors (the background color for sprites is always 1 - transparent). When 2 sprites move into the same screen coordinates, the sprite on the "lower" plane will progressively cover the sprite on the "higher" plane, thus creating the illusion of passing in front of it, generating a three-dimensional effect.

b. Bit Map Mode (Graphics 2)

In this mode each of the 8 horizontal rows within the 8 x 8 matrix can have 2 unique colors.

c. Text Mode

In this mode the screen is a 2-color single plane, with no sprites allowed. There are 24 rows by 48 columns of 8 x 8 grid matrices (squares). ASCII characters are formed in a 5 x 7 grid, with 2 pixels between rows and characters.

a. Multicolor Mode

This mode divides the pattern plane into an unrestricted 48-row by 64-column color square display, comprised of 4 x 4 pixel grids. Each of these grids is allowed to take any of the 15 standard colors, or be made transparent.

8. Sprites are available only under Extended Basic or Assembly Language. The latter is by far more versatile. The sprites can move a lot faster with smaller memory requirements.

B. SPRITE GENERATION

1. Each character is an 8 x 8 pattern stored in memory (64 pixels). A sprite is just a character with address

capabilities. It can be generated as a single 8 x 8 pixel character, or it can be made larger in 3 different ways:

- a. A 16 x 16 pixel pattern, called "double-sized unmagnified".
- b. By magnifying the existing sprite by a factor of 4.
- c. By utilizing both the above methods combined, to produce a sprite 16 times its normal size.

2. This variable size feature allows the sprite to "grow" or "shrink" at will, with minimum programming effort and great display effects.

3. Extended Basic provides a large number of sub-programs that directly or indirectly affect sprites. Following is a short description of the function of these sub-programs. A programmer should study them at length, and experiment with the short programs provided in the Extended Basic Manual, before attempting any serious programming applications.

- a. CALL CHAR used to form (plot) any standard (character) or non-standard (graphic) pattern.
- b. CALL CHARPAT returns the hexadecimal code that represents the character pattern.
- c. CALL CHARSET restores the standard character pattern to the character code that was redefined.
- d. CALL CLEAR clears the screen from all character patterns.
- e. CALL COINC returns a value of -1 if there is a coincidence between 2 or more sprites.
- f. CALL COLOR assigns the desired color(s) to the specified character group.
- g. CALL DELSPRITE removes one or more sprites from the screen.
- h. CALL LOCATE moves the specified sprite to a new set of coordinates.
- i. CALL MAGNIFY sets the size and magnification factor of the sprite(s).
- j. CALL MOTION changes the motion of the sprite(s).
- k. CALL PATTERN changes the pattern of a sprite to a pattern of another sprite (or character). If the sprites involved have similar patterns, this is a great way to produce the illusion of "secondary animation" like turning wheels, etc.
- l. CALL POSITION returns the screen coordinates that a sprite currently occupies.
- m. CALL SCREEN sets the screen background color.
- n. CALL SPRITE specifies the existence of the sprite(s) and assigns number, color, velocity and starting location.

THE COMPUTER OPERATOR (Anonymous)

This poem is from the Atlanta 99/4A Computer Users Group and they got it from Ed York of the Cin-Day Users Group (how

did I miss it then??) and Ed got it from the Feb '84 issue of the 'MELBOURNE TIMES', the newsletter of the Melbourne, Australia TI-99/4A Users Group. I think this is an excellent time for this poem anyway. It let's us reflect a little. You also can note, newsletters get around and information comes from all sorts of locations throughout the world. Ok, here it is. Enjoy.

THE COMPUTER OPERATOR

Fleet winging, heart singing, he trots through the door,
so happy to be amidst the clatter and roar.
Computer and printer, the job as a whole,
is heaven to him, provides food for his soul.

No other, his mother, his kids nor his wife,
receives such devotion, gives meaning to life.
To enter the center is life's greatest joy,
providing a pleasure that surely won't cloy.

Pulsating, awaiting his gentle commands,
the rig seems to recognize capable hands.
Confident, competent, he flits here and there,
getting things ready to go on the air.

Drives counted, tapes mounted already to go,
he pauses a moment, his features aglow,
serenely, routinely, he pushes the start,
and its just then, things fly apart.

One tape, then another, gives out whistles and screams,
the printer goes mad, spewing paper in reams.
The lights on the console give a fireworks display,
and in a momentary panic his feet turn to clay.

His heart begins pounding and surely must burst,
as the whole craxy rig acts like something accursed.
For what seems an eternity but is only a flash,
his feet bogged down in a glutiness mass.
he's unable to move and unable to speak,
as the computer goes dead with a pitiful squeak.

Head ringing, eyes stinging, he goes for the switch,
knocking down the power on his beautiful witch.
Benumbed, feeling stuned, not yet able to guess,
the calamitous cause of this horrible mess.

Traumatic, dramatic, the snock is profound,
for fully a minute he utters no sound.
Then walking, hands shaking, his temper gives way,
and curses start flying, I'm sorry to say.

He curses the mainframe, the tape drives as well.
He curses the card reader, consigns it to hell.
He curses the printer, he curses the punch.

He curses the console, and then on a hunch,
he curses the program, and while still untiring,
he curses the diodes, transistors and wiring.

Star Micronics Inc.
3 Oldfield Ave.
Irvine, CA. 92714

He curses the present, he curses the future,
he curses the day he saw a computer.
At last, quite exhausted, he falls to the floor,
unable to utter one little curse more.

Bedeviled, disheveled, his face chalky white,
eyes bloodshot, tongue lolling, a pitiful sight.
It's over, all over, the battle is done,
twixt man and machine, the computer has won!

Muttering, stuttering, completely insane,
he mumbles this warning again and again,
IDIOTS, IDIOTS, CAN'T ANYONE SEE?
THAT ANYTIME NOW YOU MAY END UP LIKE ME.....

MULTICOLOR TI MULTIPLAN: via Lehigh 99'ers

Know-it-alls can't read or won't, experts read only what they need to. But back on page 12 of the MULTIPLAN manual there's a tip for all. The page looks like the typical idiot's reminder and if you scan the page, it seems to say turn it all on, select Option 2 and press ENTER when you have the disk in place.

But wait! Lookit number two. READ number two. (Thank Pat Leibensperger; she didn't read it either but she's a hunt and peck typist and bumped the space bar on the way to ENTER.)

GEMINI-10 USERS:

If you own a Star Micronics Gemini-10 dot matrix printer, and you have had problems with the printer not completely printing the first character or two after start-up, read on.

This problem only seems to occur after the printer has been OFF for awhile. The problem is in the print head and is corrected by replacing it. Call Star Micronics California Support Group at (714)768-4340 and they will send you a new head (no...for your printer silly!). Installation instructions are in the owners manual. You have to pay return postage for the old one. Thanks goes to Dick Carraro for this tip. This tip via the Brevard Florida Users Group.

There are also two addendums available. One is a translation of all the programs in their manual into 99/4A BASIC. The 2nd is a listing of programs for the 99/4A using the Gemini Printer. If you would like a copy write to (or call the number listed above):

TERMINAL EMULATOR VICTORY GARDEN:

Say wha? Almost everyone knows what a Terminal Emulator is don't they? How about a Victory Garden? That was a special place for growing things during WWII when all foodstuffs were needed desperately to support the war effort. Well, if you look around we seem to have done the same sort of thing with communications programs. That is, Terminal Emulators. That's the item (software or firmware) that allows us to communicate with other computer systems. The very first was the infamous TEII. Many of us would rather forget it. But... we remember it well. As pioneers in detecting secrets came along they developed software that allows us now to communicate with a whole host of other systems. Here is a quick rundown of a few out on the market. Some are commercial, some are public domain and some are dumb! (Nice pun hun?)

TE-III	300/1200 baud, 24k download, autodial.
TE-1200	300/1200 baud, 12k download, spooler.
PTERM-99	300/1200 baud, 24k download.
TERMINAL X	300/1200 baud, 20k buffer. (Public Domain) written by Steve Sostrom.
TE 911	300/1200 dump terminal.
T99	300/1200 dump terminal.
TE 30	300/1200/4800/9600 baud. ????

All of the above have been utilized but the TE-30 program. Does anyone have information on that one? The 9600 baud must be awesome! Who would you communicate with though? Getting a clean phone line would be impossible under normal conditions. Rental for a clean line would clean out your bank account.

TEXNET: The SOURCE

TEXNET is a special interest area on The Source. For a long time it has been adrift and had no direction. The following article seems to indicate that it has been taken 'under new management' and is in good health.

The following is via the Lehigh 99'ers:

"I have recently had the honor of testing the new TEXNET on the SOURCE. Armed with a special ID and password, I valiantly tried every section possible and I must say that I am impressed!! The new commands are much easier to use and the response time is 'light years' faster. Some commands for TEXNET can be executed from the command level of the Source without ever entering TEXNET. I did complain that our group (Ed Note: Lehigh 99'ers) was listed as being in Wescoville and not at the current (for better than 1 yr) address. I managed to download several programs from the software exchange with

little trouble. There is also a software store 'online' for your software purchases. The new improved version of TEXNET should be available for access soon, I hope!!!"

NEW REGULAR MEMBER RATES EFFECTIVE:

Due to the eagle increasing his rates for transport we are now forced to do same. Look at the stamp on this newsletter to see what we mean. The new rates will be \$15.00/year **EFFECTIVE AT THE NEXT MEETING!!!!**

MEETING DATES:

MONTH	GENERAL MEETING	SPLINTER MEETING
JAN	29	10
FEB	26	12
MAR	27	13
APR	30	15
MAY	29	14

MEETING AGENDA:

7:00PM - 7:15PM	Introduction and new news.
7:15PM - 7:45PM	Not firm as of this writing.
7:45PM - 8:00PM	Open Question time. Door Prizes!
8:00PM - 9:00PM	Free Period. Get together. Join the Group, order from the Group, buy from the Group.
9:00PM	End Session. See ya next month!

CHARTER MEMBER DUES!!!

It's that time of year again. Charter Member dues are payable by the JANUARY meeting!! If you miss you must pay the NEW RATE to reinstate!

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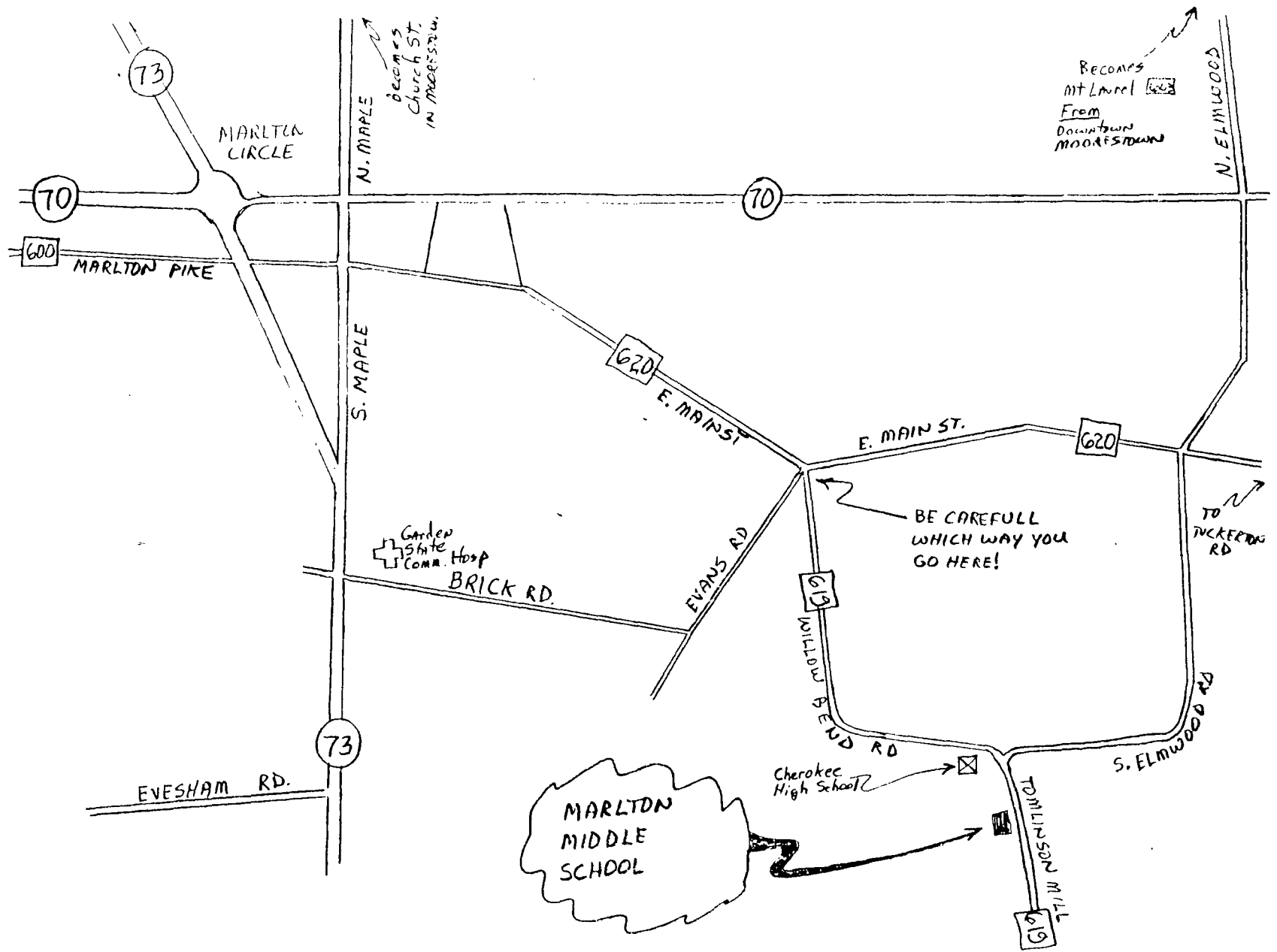
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