NEW HAMPSHIRE 99ERS
SEPTEMBER 1985
NEWSLETTER

<<<RANDOM RAMBLINGS>>>

Effective immediately our new address is:

NEW HAMPSHIRE 99'ERS USER GROUP, INC.
PO Box 5991
MANCHESTER, NEW HAMPSHIRE   03108-5991

Travelling 50 miles (round-trip) to our former PO Box in Concord was simply getting out of hand (and gas)!

*****OUR NEXT MEETING HAS BEEN RE-SCHEDULED AT A NEW LOCATION!*****

Because of a change in venue, the September meeting has been re-sheduled to Wednesday October 2nd. The location will be in the RIB ROOM at the BONANZA STEAK HOUSE in Bedford. It is conveniently located at BEDFORD SQUARE on Route 3 (across from the CAROUSEL), just 0.8 miles north of Jordan Marsh. There is ample parking and the room is large and well lit. The meeting will begin promptly at 7:30 pm. Come earlier and enjoy dinner. Mention NH99UG when you order.

Because of the upcoming holidays, future 1985 meetings will be held at the beginning of the each month.

The proposed revisions to the constitution will be voted on at this time (they were included in the August NEWSLETTER). If you cannot attend the meeting and want to show you care, sign the enclosed proxy and mail it back to us by 09/29/85. If you agree with the proposed revisions, appoint any one of the officers as your agent. If you don't agree please so state. Your vote counts!

Because of last minute scheduling conflicts, we were forced to bow out of this year's COMPUTER FAIRE (9/26-9/29). No club monies were lost, however.

Copies of the DISK MANAGER 1000 went briskly at the last meeting. Sorry we ran out of labels. They are included, herein, for all those who missed out.

We have members who are interested in purchasing used TI wares. RS232 and 32K cards are high on the list. We also have had requests for P Cards. Contact: The Editor - NH 99UG - POX 5991 - Manchester, NH 03108-5991 (603/472-3369).

According to Will Hadey of Navarone Industries, new documentation for their DBM is available to registered users at NO CHARGE. Call or write: Navarone Industries - 19968 El Ray Lane - Sonora, CA 95370 (209)/533-8349).

<<<SPECIALS>>>

UNISOURCE ELECTRONICS, INC. - POB 64240 - Lubbock, TX 79464 (1-800/858-4580). Announced a very limited time offer on the AXIOM GP100TI Direct Connect Printer...$120 + S&H (No, that's not a misprint...$120). "Just plug it in and start printing!". It includes special printer addendum for the TI. Quantities are limited.

TEX-COMP - POB 33084 - Granada Hills, CA 91344 (1-818/366-6631). This month they are featuring AIRLINE a strategy game with color graphics for 1-4 players from Adventure International...$5 + S&H. Specify cassette or disk. XB required.

STRUCTURED PROGRAMMING IN BASIC

by Ellen Rule, NH 99'ers Users Group

When I first started programming, my usual method of operation was to sit down at the console and start hacking away -- what better way to transfer ideas directly from brain to computer! Of course, my programs were gargantuan in size and it was practically impossible to modify or even track the variables. Most of the time my programs ran, 'though many "collected dust" in the diskette file as a result of my frustration. Then, I took a course in Pascal, an event that changed my life, or at least my programming style! You see, structured programming involves planning and organizing so that a program flows logically from one step to another. (Pascal is so structured that it doesn't even allow "goto" jumps, the crutch of the impulsive programmer!) All I had to do was transfer the knowledge and techniques from Pascal to BASIC and I had it made.

What is structured programming? Why is it important? Structured programs are understandable and easy to follow. They are easier to write, correct, and modify than haphazard code. They are more efficient to use because they run faster and take up less space in memory. Sold?

So where do you start? Structured programming uses subroutines or subprograms to carry out certain programming tasks such as initialization of variables, input, processing, and output. Error-handling can also be performed through the use of subroutines. One main program block coordinates these tasks and calls them as they are needed. The most wonderful thing about structured programming, in my estimation, is that I can STILL bring my raw ideas to the terminal and start keying away!

Suppose that I want to write a program that will print out 3x5 recipe cards (okay, guys?) after I key in the ingredients and the directions. Once the output is determined, the input module can be tailored to produce the kind of information needed. Subprograms and block structure make it easy to split the overall problem into smaller, more manageable subproblems. Stepwise refinement (going from large to small) and modular programming are the techniques used to accomplish this task. So, thinking "stepwise", first I'll input the ingredients, then the directions, then I'll output the finished product to the printer. So the start of my program looks like this:

```
10 REM RECIPE CARD PROGRAM
100 REM INITIALIZE VARIABLES
200 REM INPUT INGREDIENTS
300 REM INPUT DIRECTIONS
400 REM PRINT CARD
500 END
```

Now, I can see that I am performing the same operation twice (the user input) and I can probably use the same code for both operations. (A good way to tell if a subroutine is doubly-useful is if you find yourself keying in similar lines over again.) Also, I might want to give the user the chance to change any erroneous input, so utilizing a piece of code more than once might be helpful again. Now we'll add some lines and see how the program grows:

```
10 REM RECIPE CARD PROGRAM
100 REM INITIALIZE VARIABLES
110 GOSUB 1000
200 REM INPUT INGREDIENTS
210 GOSUB 2000
215 REM ALLOW CORRECTIONS
220 GOSUB 3000
300 REM INPUT DIRECTIONS
310 GOSUB 2000
315 REM ALLOW CORRECTIONS
320 GOSUB 3000
400 REM PRINT CARD
410 GOSUB 4000
500 END
1000 REM INITIALIZE VARIABLES
2000 REM USER INPUT
3000 REM CORRECTIONS
4000 REM PRINTER OUTPUT
```

Now, each of the subroutines must be broken down into smaller tasks, just as the task "prepare dinner" may be split into "prepare the salad", "prepare the main course" and "prepare dessert." Depending on the occasion and the number of dinner guests, the tasks may need to be divided among several cooks; so might we further split the subroutines into smaller modules. In this process, we might find that the input we are asking for starting at line 100 is so different in form from that desired at line 200 that we need to make separate input routines. However, we still might use the same "Is input okay?" section for both routines. Within the routines we might find it useful to access the same piece of code more than once. For example, in order to have the printer actually draw the outline of the card so the user can cut it out of the printer paper, the five inch line will need to be repeated for every horizontal line of the card's formation. If the card ends up being a "double fold" card, this routine will be used several times. Subroutine time again!

A clearly written program, with good documentation, can save you lots of trouble when, months from now, you decide that you want to make some changes. Or, you may want to transfer that nifty input routine or some other subprogram you developed to another program. Instead of relying on your memory, you'll just read the documentation, make the necessary modifications, and you're on your way to writing another readable, efficient program!

REVIEW OF THE EPSON LX-80 (SPECTRUM) PRINTER

Richard J. Bailey
68A Church Street
Gonic, N. H. 03867

The RX-80 looked and acted like the MX-80 it replaced but the LX-80 is mechanically far different from its predecessors. Externally its length and width are the same but it's only 3.5 inches high (minus the plastic paper release lever that sticks up) and the front third of the case slopes down to 2.5 inches making the overall shape look like a typewriter without the keyboard. Gone is the transparent lid on the front that allows you to see what is being printed; it was replaced with a beige plastic lid. The ribbon cartridge is about 3.5 inches square and is much easier and neater to load than the MX/RX cartridge. The printer comes with built-in friction feed but a snap-on tractor feed is available. Given a choice, I'd prefer tractor feed built-in like on the TI version of the MX but if you want to do single sheets or if exact registration isn't a necessity you won't find this an objection. The paper bail that holds the paper against the roller has plastic ends instead of the metal ones on the MX/RX so they won't stand up as well. The cheaply made paper guide and soperator obviously won't stand much abuse.

The location of the optional RS-232 card has been moved to the left side of the back directly over the parallel interface connector which I think is an improvement. The keypad on the right front has three keys like the other EPSONs but they function differently. Besides ON LINE, FF, LF, and two test modes, these keys can perform 6 type mode selections similiar to the "FINGERPRINT" modification kit for the MX. This added feature allows you to set up or change print styles without going through the computer.

The print head is 9 pin and most characters print within a 5/72 by 7/72 inch block. Besides the usual ASCII characters, there are 30 special graphic characters, or you can create your own with the usual 8 bit pin firing. The near letter quality print is similiar in style to a standard typewriter and should be a welcome addition to people interested in word processing. Specified print speed is 100 char/sec but I clocked it at 80. The MX does an actual 66 char/sec.

Conclusion

Mechanically the LX-80 has obviously been cost reduced. If you're not rough on equipment then the LX-80 should hold up almost as well as the MX/RX printers. Print and functionally it outperforms the MX/RX and electronically it looks the same high quality. If the discount price is cheap enough (aprox. $220) then this may be the printer you're looking for.

** PERSONAL DATA MANAGEMENT **

JHB SOFTWARE

Review by - Jim Jagielski
New Hampshire 99er's User Group

Personal Data Management by JHB Software is a program package which contains three diskettes: DVECTOR SYSTEM, ADRS SYSTEM, and ADRSLINK SYSTEM.

The DVECTOR SYSTEM disk contains several Database programs which permit the user to create, edit, manipulate, and print user defined databases. Users can create databases of up to 350 records and 125 items. I found creating and editing the database to be very easy. The sorting and printing capability of the program really enhances it. Another nice feature of the program is an "escape" key which will display the main menu so that the user can go directly and quickly to a certain functional program. This "escape" key routine is written in assembly language code which I found to be very interesting.

The ADRS SYSTEM disk contains several programs which creat, edit, sort, and print an address list or address book. The printing capability of the program provides the user with an interesting printing option if you have an Epson or compatible printer. It will print out a part or all of your address file in an address book format. Users can select one of three page size options for printing this address book: 8-1/2 X 11, 6 X 9-1/2, or 5-1/2 X 8-1/2. If you have an Epson or compatible printer, I'm sure you will like this printing feature. The interactive search in this program is also a very nice feature.

Lastly, the ADRSLINK SYSTEM disk is basically a supplement to the ADRS address book program. This disk contains programs that allow you to create a mailing list file from the address file which was created by the ADRS diskette. The mailing list file can then be printed on labels with the use of this program.

Overall, I enjoyed using this package. I found it to be well documented (with tutorial), easy to use (all three system disk's programs are menu driven), speed of execution is very tolerable, and user friendly to name just a few plus's.

JHB Software has made us a special offer; they will sell our group this package for only $19.95. With the purchase of these disks, JHB Software will permit us to make copies for any interested member of our group. Because of the low price, and the many uses of the Data Management package, I find the offer very hard to turn down. If you are interested in these items, please inform one of our group officers. If our group decides to purchase the package, you will be able to pick-up a copy for much less than $19.95.

JHB Software is also planning to release new programs in the near future such as utilities making use of the DVECTOR program for bookkeeping, specialized printing, graphing and linkage to Multiplan. If you are interested in the progress of these programs you can write to:

JHB SOFTWARE
P.O. Box 920952 Suite 345
Houston, TX 77292-0952

```
Version  1.5
 !"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmno
 !"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnop
 "#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopq
 #$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqr
 $%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrs
 %&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrst
 &'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstu
 '()*+,-./0123456789:;< >?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^ `abcdefghijklmnopqrstuv
```

GREEN MONITOR BLUES, PART II
by Paul Lanoie / Richard Bailey NH 99'ers UG.

Back in March I explained that using a monochrome monitor with the TI/99 4A will lead to less than great results. Unless you stay with black and white outputs for your text and screen, the screen will appear grainy, causing a loss of resolution. I said then that what was needed was some kind of hardware fix to modify the output from your TI, to a signal that the monitor would like.

>>>>> Announcing the COLOR KILLER FOR THE TI/99 4A <<<<<, a hardware modification for the console, that will let you select color or, black and white output from the TI/99 4A.

This modification adds a capacitor and a switch to your console, (cheap and easy). One switch position yields a normal color output from your console, the other yields an output that has no color. Connect the console to a color TV with the switch in this position and you will see a black and white picture. Connect to a monochrome monitor and you will get the picture that I have been after all along; a nice display with different levels of brightness representing the range of colors. And best of all, you still have the sharpness and resolution available from a monitor in displaying text.

A technical explaination. First let me say that both Bailey and I consider the workings of a television to be in the realm of "magic". However some very persistent research has led to the following conclusion. The Video Display Processor in the console puts out what is called a "composite video" signal to your monitor, or to your r.f. modulator if you're using a tv. This signal, when in color, contains what is called the "color burst". When the signal is black and white the " color burst" is not present. So then, the objective of a hardware modification is to get rid of the color burst portion of the "Composite Video" signal.

Now, pick up your Radio Shack electronics data book (RS#62-2040), and you find out that the color burst portion of "Composite Video" is a signal with a frequency of 3.579545 MHZ. Go to the schematic of the 99/4A and see that the output of the VDP (9918A) is on pin 36. Connected to pin 36 is an item called L202. This is an induction coil, often called a choke. What you do is add a 100 PF capacitor in parallel with this choke. The results is a tuned circuit that will kill the 3.579545 MHZ portion of the video signal. Put a switch on the back of your console in series with the added capacitor, and you will now have a switch selectable "Color Burst Filter".

The sketches for this change are shown here, the schematic on the left and the pictorial of the right-rear corner of the main circuit board on the right, thanks to Dick Bailey's ability with the GRAPHX software. By the way, the cost of this modification is about 70 cents for the capacitor (Radio Shack 272-152), plus $1.69 for the switch (Radio Shack 275-624 or 275-613).
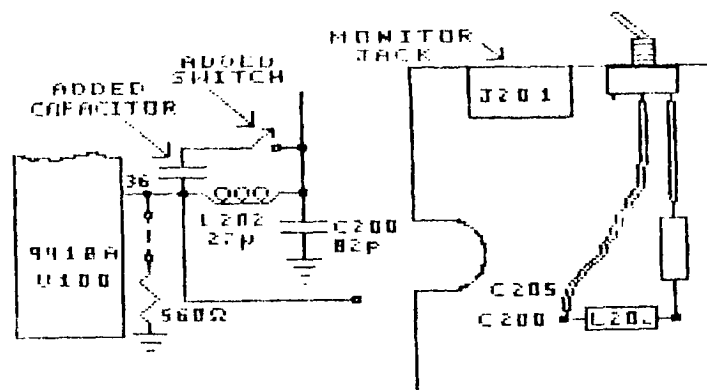
BACK TO BASICS

Here is a short and extremely fast routine to 'shuffle' a deck of cards:

*** THESE LINES SET UP THE ARRAY ***

```
10 DIM DECK(52)
20 FOR X=1 TO 52
30 DECK(X)=X
40 NEXT X
```

*** HERE IS THE SHUFFLE ***

```
100 FOR X=1 TO 51
110 Y=INT(RND*(53-X))+X
120 TEMP=DECK(X)
130 DECK(X)=DECK(Y)
140 DECK(Y)=TEMP
150 NEXT X
```

*** THAT'S IT! ***

FOR SALE

TIGERCUB SOFTWARE
156 Collingwood Ave.
Columbus, OH 43213

Distributed by Tigercub Software to TI-99/4A Users Groups for promotional purposes and in exchange for their newsletters. May be reprinted by non-profit users groups, with credit to Tigercub Software.

The entire contents of Tips from the Tigercub Nos. 1 through 14, with more added, are now available as a full disk of 50 programs, routines and files for just $15.00 postpaid!

Nuts & Bolts is a diskfull of 100 (that's right, 100!) XBasic utility subprograms in MERGE format, ready for you to merge into your own programs. Contents include 13 type fonts, 14 text display routines, 12 sorts and shuffles, 9 data saving and reading routines, 9 wipes, 8 pauses, 6 music, 2 protection, etc., and now also a tutorial on using subprograms, all for just $19.95 postpaid!

And I have about 140 other absolutely original programs in Basic and XBasic at only $3.00 each!(plus $1.50 per order for casette, packing and postage, or $3.00 for diskette, PPM) I will send you my descriptive catalog for a dollar, which you can then deduct from your first order.
                TIJ
        UDS!TDFIFA
            BJIF
            JDIF
            SURS
            STSA
            SFBF
            TRA

The above is a long division problem in the proper format, with each numeral replaced by a letter. Can you solve it?

My program TC-41 Long Division Cryptograms, will generate an infinite number of such puzzles for you, and help you to solve them - and it only costs $3.00. It took me a week to program, and I've sold 12 copies in 2 years! Doesn't anyone like to exercise their brains anymore?

TIGERCUB CHALLENGE

```
100 FOR J=1 TO 7 :: READ M$
:: PRINT M$ :: NEXT J
30000 DATA AAAAAAAAAAAAAAAAAA
AAAAAAAAAAA,BBBBBBBBBBBBBB,BB
BBBBBBBBBBBB,CCCCCCCCCCCCCC,
        DDDDDDDDDDDDDD
30010 DATA "TESTING",,,,,,,,
,,,,,,,,,,,,,,,,,,,,,"TEST
ING""
>RUN
AAAAAAAAAAAAAAAAAAAAAAAAAAAAA
BBBBBBBBBBBBBB,BBBBBBBBBBBBBB
CCCCCCCCCCCCCC
        DDDDDDDDDDDDDD
"TESTING"
,,,,,,,,,,,,,,,,,,,,,,,,,,,
""TESTING""

* READY *
```

Can you run this program and get these results? You won't even be able to key in that last DATA item! So, how was this programmed? No, there are no redefined characters!

Do you need something educational? Here is a little routine to give the plural endings for most words. I will leave it to you to develop further - and see if you can teach the computer the plurals of PANTS, TOOTH, MAN, FUNGUS, DATA and the other inconsistencies of the English language.

```
100 REM PLURAL ENDINGS
   by Jim Peterson
110 INPUT W$
120 Z$=SEG$(W$,LEN(W$),1)
130 Y$=SEG$(W$,LEN(W$)-1,2)
140 ON POS("EFHSXYZ",Z$,1)+1
 GOTO 270,150,190,180,250,25
0,220,250
150 IF SEG$(W$,LEN(W$)-2,2)<
>"IF" THEN 270
160 PL$=SEG$(W$,1,LEN(W$)-2)
&"VES"
170 GOTO 280
180 IF (Y$="CH")+(Y$="SH")TH
EN 250 ELSE 270
190 IF (Y$<>"LF")*(Y$<>"RF")
*(Y$<>"AF")*(W$<>"HOOF")THEN
 270
200 PL$=SEG$(W$,1,LEN(W$)-1)
&"VES"
210 GOTO 280
220 IF (Y$="AY")+(Y$="EY")+(
Y$="OY")+(Y$="UY")THEN 270
230 PL$=SEG$(W$,1,LEN(W$)-1)
&"IES"
240 GOTO 280
250 PL$=W$&"ES"
260 GOTO 280
270 PL$=W$&"S"
280 PRINT PL$
290 GOTO 110
```

If you want to turn that into a quiz, change line 110 to READ W$, change line 280 to PRINT W$;" PLURAL?": :. Add lines -

```
281 INPUT Q$
282 IF Q$<>PL$ THEN 285
283 PRINT : :"RIGHT!": :
284 GOTO 110
285 PRINT : :"WRONG! PLURAL
OF ";W$;" IS ";PL$: :
300 DATA BOX,WATCH,WIFE,BOY
```

(And as much more as you want)

Just one more optional refinement to my Menu Loader. If you want to use a filename ending in an asterisk for those Basic programs which will not run in XBasic, this change will keep you from loading and crashing them.

```
420 CLOSE #1 :: IF SEG$(P6$(
K),LEN(P6$(K)),1)="*" THEN D
ISPLAY AT(12,1)ERASE ALL:"RE
```

TURN TO BASIC AND LOAD BY":"
TYPING OLD DSK1."&P6$(K)":: S
TOP

The idea of a program that writes a program has stirred up a little interest, so here's another. This routine will aid you in formatting your screen text into neat 28-column lines, and will save the text in program lines of DATA statements. When you are ready to save, type @@@ and enter as the last line, then NEW and MERGE DSK1.LINEFILE

```
100 !LINEWRITER
   - by Jim Peterson
130 CALL CLEAR :: OPEN #1:"D
SK1.LINEFILE",VARIABLE 163 :
: LN=30000
140 FOR R=1 TO 24 :: DISPLAY
 AT(R,1)SIZE(1):" " :: ACCEP
T AT(R,0)SIZE(-28):A$ :: IF
A$="@@@" THEN 180 :: B$=B$&C
HR$(200)&CHR$(LEN(A$))&A$
150 X=X+1 :: IF X/4=INT(X/4)
THEN 160 ELSE B$=B$&CHR$(179
):: GOTO 170
160 GOSUB 210 :: LN=LN+10
170 NEXT R :: X=0 :: CALL CL
EAR :: GOTO 140
180 IF B$="" THEN 200 :: IF
SEG$(B$,LEN(B$),1)=CHR$(179)
THEN B$=SEG$(B$,1,LEN(B$)-1)
190 GOSUB 210
200 PRINT #1:CHR$(255)&CHR$(
255):: CLOSE #1 :: END
210 PRINT #1:CHR$(INT(LN/256
))&CHR$(LN-256*INT(LN/256))&
CHR$(147)&B$&CHR$(0):: B$=NU
L$ :: RETURN
```

Here's something for "JET" and Danny and Gene and all the rest of my friends in Alabama - and in all the rest of Dixie. You've never seen fireworks quite like these before!

```
100 CALL CLEAR :: PRINT TAB(
5);"ALABAMA 4th of JULY": :
: : : : : : :"programmed by
Jim Peterson" :: FOR D=1 TO
200
110 NEXT D :: RANDOMIZE
120 DIM S$(12),A$(16),S(16),
```

```
SX$(15)
130 DATA 196,220,247,262,294
,330,349,392,440,494,523,587
,659
140 FOR J=4 TO 16 :: READ S(
J):: NEXT J :: FOR SET=2 TO
14 :: CALL COLOR(SET,1,1)::
NEXT SET :: CALL SCREEN(2)
150 DATA 00,18,24,3C,42,5A,6
6,7E,81,99,A5,BD,C3,DB,E7,FF
160 FOR J=1 TO 16 :: READ A$
(J):: NEXT J
170 FOR CH=40 TO 136 STEP 8
:: FOR L=1 TO 4 :: X=INT(16$
RND+1):: B$=B$&A$(X):: C$=A$
(X)&C$ :: NEXT L
180 SX$(CH/8-4)=B$&C$ :: CAL
L CHAR(CH,B$&C$):: GOSUB 350
:: B$=NUL$ :: C$=NUL$ :: NE
XT CH
190 FOR J=1 TO 12 :: FOR L=1
TO 6 :: X$=CHR$(INT(13$RND+
5)$8):: B$=B$&X$&X$ :: C$=X$
&X$&C$ :: NEXT L
200 S$(J)=B$&C$ :: B$=NUL$ :
: C$=NUL$ :: NEXT J :: CALL
MAGNIFY(2)
210 FOR J=1 TO 12 :: DISPLAY
AT(J,3):S$(J):: NEXT J :: X
=1 :: FOR J=13 TO 24 :: DISP
LAY AT(J,3):S$(J-X):: X=X+2
:: NEXT J :: CALL DELSPRITE(
ALL):: FOR D=1 TO 200 :: NEX
T D
220 DATA 1,11,7,1,9,7,2,7,4,
2,4,7,1,7,4,1,4,8,1,4,9,1,4,
10,2,11,7,2,7,11,2,11,7,2,9,
4
230 DATA 2,12,5,2,5,12,3,12,
7,1,11,7,3,12,5,1,11,7,1,12,
5,1,13,4,1,14,5,1,15,10
240 DATA 6,16,7,1,14,9,1,11,
7,6,14,4,1,11,7,1,9,4,6,11,6
,1,8,6,1,9,7,6,7,4
250 DATA 1,11,7,1,13,4,2,14,
9,2,16,11,3,15,4,1,14,9,2,12
,10,4,14,10,2,12,7,6,15,10,2
,12,8
260 DATA 6,15,6,1,11,6,1,13,
4,2,14,9,2,16,14,3,15,11,1,1
4,9,2,12,10,2,13,7,3,14,10,1
,12,10
270 DATA 2,11,7,2,9,4,3,14,9
,1,9,5,2,9,4,4,8,4,2,9,4,6,7
,4,2,9,4,6,8,4,2,12,5
280 DATA 2,11,7,2,9,4,3,14,7
,1,16,7,2,15,10,4,14,9,2,9,4
,6,7,4,2,9,4,6,8,4,2,12,10
290 DATA 2,11,7,2,9,4,3,16,1
1,1,14,9,2,15,4,2,14,7,2,14,
```

```
9,6,14,11
300 FOR N=1 TO 96 STEP 3 ::
READ T,A,B :: CALL COLOR(A-2
,A-2,1):: CALL COLOR(B-2,B-2
,1):: FOR TT=1 TO T :: CALL
SOUND(-999,S(A),0,S(B),5)::
NEXT TT
310 CALL COLOR(A-2,1,1):: CA
LL COLOR(B-2,1,1)
320 NEXT N :: RESTORE 220 ::
 FOR N=1 TO 252 STEP 3 :: RE
AD T,A,B :: CALL COLOR(A-2,A
-2,1):: CALL COLOR(B-2,B-2,1
):: FOR TT=1 TO T :: CALL SO
UND(-999,S(A),0,S(B),5):: NE
XT TT
330 CALL COLOR(A-2,1,1):: CA
LL COLOR(B-2,1,1)
340 NEXT N :: FOR J=5 TO 30
:: CALL SOUND(-999,S(A),J,S(
B),J):: NEXT J :: RESTORE 22
0 :: FOR CH=40 TO 136 STEP 8
 :: GOSUB 350 :: NEXT CH ::
GOTO 190
350 CALL MAGNIFY(1):: CALL S
PRITE(#CH/8-4,CH,13$RND+3,20
0,128,-30,RND$20-RND$20):: R
ETURN
```

The Home Computer Magazine,
Vol. 4 No. 3, had a
program called Elementary
Addition and Subtraction,
which generates random
numbers between 1 and 5 for
elementary math practice.

The first time I tried
it, it asked me for the
answer to 1 + 1. When I
answered correctly, it
produced another random
problem - 1 + 1 again!

This is known as the
idiotic computer syndrome,
and it helps us to remember
that our computers are still
no smarter than their
programmers!

Fortunately, this bit
of idiocy is easy to cure.
Try this -

```
100 RANDOMIZE
110 X=INT(5$RND+1)
120 IF X=X2 THEN 110
130 X2=X
140 PRINT X;
150 GOTO 110
```

Do you see how it
works? The first time you

get a number, X2 will equal
0 because it has never been
given a value. X will be
selected as a number between
1 and 5. Let's suppose it
is 2. Line 120 compares it
with X2; 2 is not equal to
0, so the program continues
to line 130, where X2 now
picks up the value of 2,
then on to print the value,
and back to 110. Now,
suppose that the random
factor in line 110 picks 2
again. Line 120 finds that
2=2, X=X2, and sends the
program back to 110 to pick
a different number.

If you want to avoid a
repeat until after two
times, change line 120 to
read 120 IF (X=X2)+(X=X3)THE
N 110 and add a line 125 X3=
X2 .

For a longer series
without repeating, it might
be better to use this
method.

```
100 A$="ABCDEFGHIJ"
110 FOR J=1 TO 10
120 RANDOMIZE
130 Y=INT(RND$LEN(A$)+1)
140 X=ASC(SEG$(A$,Y,1))-64
150 A$=SEG$(A$,1,Y-1)&SEG$(A
$,Y+1,LEN(A$))
160 PRINT X
170 NEXT J
180 GOTO 100
```

That will give you a
random series of 1 through
10 and then repeat with a
different random series.
Adjust the number of letters
in the string A$, and the
corresponding "TO" value in
110, for whatever you
require.

Several newsletters
recently have published
articles on the "program
that you never run" -
because it consists entirely
of REM statements!

For instance, you can
keep a list of the members
of your users group, using
their membership number for
the program line number,

followed by REM (or ! in
XBasic) and their name and
address. For a printed
list, just LIST the program
to the printer. To change
someone's address, or to
delete a deadbeat who
doesn't pay his dues, just
edit the program. You can
also LIST the program to
disk to create a DIS/VAR 80
file which you can then load
into TI-Writer and use its
editing features,
FindString, etc.

The same method can
give you a tickler file, or
appointment calendar, which
is just as good as some
rather complex disk filing
programs written for this
purpose. Just use the month
number (1-12) and date
(always in two digits,
01-31) for the line number -
1008 !buy birthday pres
sent for wife!
1009 !wife's birthday!
1010 !apologize to wife for
forgetting birthday
You can schedule
several things in one
program line -
1011 !get haircut/change oil
in car/pinch secretary......
- but it might be better
to add an extra digit (0-9)
to the line number and
schedule separately -
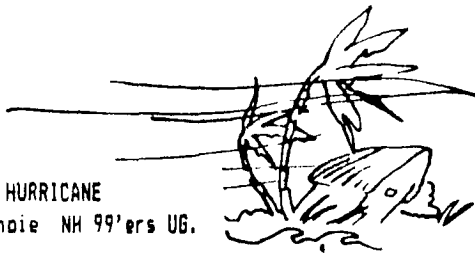10110 !get haircut
10111 !change oil
Then, if something
doesn't get done, just use
the REDO key to change the
line number and reschedule
it for another date. You
can print out a list of the
day's chores by simply LIST
"PIO":7010-7019 (did you
know you could do that?)

MEMORY FULL IN LINE 470

- Jim Peterson

TAMING THE PEB HURRICANE
by Paul G. Lanoie NH 99'ers UG.

How do spell relief? Q-U-I-E-T. Are you as tired of listening to that P.E.Box fan as I was? If you are then read on. The fan in the PEB can be tamed, in fact with the correct changes, it can be removed. Before getting into details however, let's take a tour of the PEBox.

With your PEB in front of you, take the cover off and look inside. In the middle, you see the plug in expansion cards. On the left side is the metal box containing the power supply for the entire PEBox. This of course, is where the culprit fan is located. The metal box on the right contains the disk drive.

In front of the expansion cards is an area about an inch or so wide. This space is an air duct. The fan blows air out of the power supply box, drawing in air from this inch wide area. Cool air enters the PEB from behind the expansion cards in the back of the PEB. See the holes directly behind the cards.? Note that virtually no air passes through the disk drive enclosure. The disk drive does not need any quantity of forced air, since the power supply for the drive is not in the drive enclosure. By the way, don't put a filter behind the fan. You'll only be cleaning the air re-entering the room.

Now, if you were to take one of the expansion cards apart, you would see that the voltage regulators for the individual cards are on the cards themselves. It is these voltage regulators that create the largest amount of heat in any electronic device. Because of this fact, the case of the expansion card is bolted directly through the voltage regulators. The case on each individual expansion card, acts as the heat sink for for the voltage regulators on that card. So don't even think of taking the cases off the expansion cards to let the PC board get more air. However, the excess size of these cases will allow you to remove the fan from the PEB if you choose that option.

With the voltage regulators for the PEB expansion cards on the cards themselves, the only regulators needed in the power supply enclosure are the ones for the disk drive. These are mounted directly on the power supply board. As it turns out, these regulators can be moved from the power supply card to the back of the PEB, allowing you to remove the fan altogether. Sound scary? Well let me say this. I have been troubleshooting industrial electronics for many years now, and I can assure you that the cooling system in the PEB is an overkill. If you can get the regulators off the power supply board, and get them to the outside backplate of the PEB, then you have removed the main reason for the fan. The rest of the PEB will get enough cooling from the numerous holes in the case. (Well, as long as you don't live in the outback down under.) This approach is Dick Bailey's idea and it will be explained further in an article to follow. I agree with Dick's idea and it is of course, the ultimate in QUIET; no fan. I take credit for bugging Dick about the PEB noise. He eventually cracked and did something about it.

Another approach to the problem is to get a slower running fan. As you saw at the July NHUG meeting, Bailey had installed a different fan in his PEB. This unit was a DC muffin style fan, rated 24 volts DC. He is powering it with the unregulated 18 volts DC available in the PEB power supply. The results is that the 24 VDC fan runs slower on 18 VDC than it would if saw a full 24VDC. And slower means quieter. The fan used is a Matsushita Electric (Panasonic) Panaflo model FBP-08B241. One advantage of this fan is that it uses the same mounting studs as the original.

Now, let's use the original fan in the PEB, and slow it down instead. There are a number of ways to do this, but here is the one that I am using at this time. Simply add a 15 watt lightbulb in series with the fan motor. Mount a bulb socket to the outside of the PEB, wire it in series with the motor, and you have it; one slowed down fan motor and night-light, all in one. The ultimate speed of the motor is controlled by the size of the bulb. A bulb any bigger than 25 watts however, will get the speed back up to the hurricane level. This modification is accomplished by taking the PEB apart, pulling one fan wire off the fan, and bringing it out to the bulb socket then back to the fan. Mount the socket on the outside of the PEB. I used a porcelain socket that can be mounted with two 6-32 screws. Other than the socket, you'll need a couple of feet of no.18 wire and 6 inches of plastic wire sleeving. The sleeving adds extra protection to the wires as they pass through the case of the PEB. The whole job takes about an hour. You may have to get the socket from one of the electrical supply houses in your neighborhood. It's not the type used much in houses any more, so the local hardware store may not have it. Still, we are only talking a couple of bucks for this item. I'll see if I can get a part no. for you later. The circuit diagram is provided compliments of Dick Bailey.

By the way, if you're beginning to get the idea that Dick and I spend a lot of time talking about the TI, we do. We both work for the same company, and most coffee breaks are spent hacking over ideas.

WIRE BULB
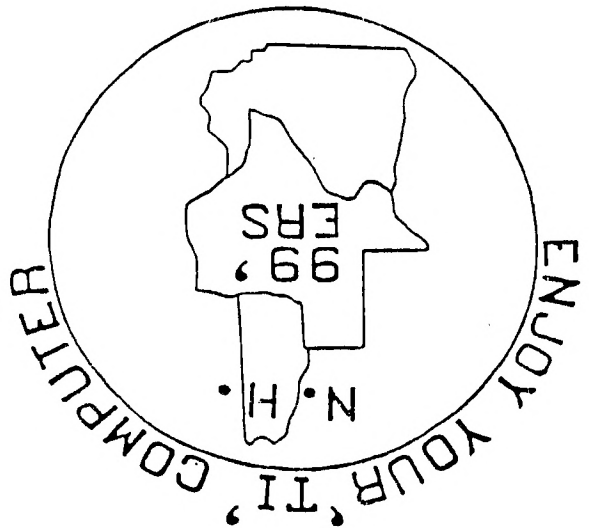IN SERIES
WITH YOUR
PEB FAN
MOTOR
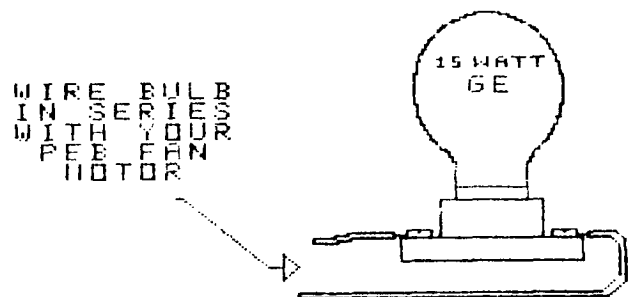
15 WATT
GE

Member Chris Ferris reports that he recently installed a EG&G ROTRON Sprite Fan (#SU2C7) in his unit. It is rated 115VAC @ 50/60Hz - 6/5 Watts - .07/.06 Amps. The fan is 3.12" sq X 1.64" deep and fits nicely onto the existing posts. It is available for $10 + S&H thru Jameco Electronics - 1355 Shoreway Road - Belmont, CA 94002.

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