NHUG NEWSLETTER - PO BOX 7199 HEIGHTS STATION - CONCORD, NH 03301

OFFICERS' CORNER

Much of the September meeting was taken up with announcements of new products which have been offered to the USER GROUPS at reduced prices or responses to our inquiries on others.

First, the RESTON order for KIDS & THE TI99/4A and SPRITES, a TURTLE, & TI LOGO was placed on schedule and we are anticipating its delivery by the October (Wednesday the 31st) meeting.

We hope you enjoyed Ellen Rule's review of Steve Davis' book, PROGRAMS FOR THE TI HOME COMPUTER, which appeared in the September NHUG NEWSLETTER. Shortly after publication, we received notification from Steve Davis Publishing that PROGRAMS FOR THE TI... and INTRODUCTION TO ASSEMBLY LANGUAGE FOR THE TI HOME COMPUTER are currently available as a 2 for 1 special, i.e., for each copy that we order, we will get a second copy of the same title free! We, therefore, are offering these books at half price to the MEMBERSHIP. This offer is only good until 11/05/84.

PROGRAMS FOR THE TI HOME COMPUTER....$10.00 postpaid
INTRO TO ASSEM LANGUAGE FOR THE TI...$11.00 postpaid

Davis also announced the availability of disk versions of some of the best programs from PROGRAMS FOR THE TI... . Each disk contains six programs plus an instruction booklet, for $19.95 each. All programs have been enhanced to take advantage of the features of the disk system, memory expansion, and extended BASIC. (The original versions were written for 16K BASIC users.)

VOLUME 1: GAMES & ENTERTAINMENT includes these programs: Murder, Lucky Seven, Echo, Adventure in Oz, Tarot, Numerology

VOLUME 2: HOME MANAGEMENT & UTILITIES includes: Mail-Writer, Personal Banking, Disk Lister, TI-tles, Keyword Article Search, User Directory

WORDWARE Publishing, Inc. has forwarded us a complimentary copy of their 1984 edition of LEARNING TI99/4A HOME COMPUTER ASSEMBLY LANGUAGE PROGRAMMING by Ira McComic (see page 5 for a description). This book will be available at the meetings for your inspection. Wordware is offering USER GROUP MEMBERS a discount of 10% toward the purchase of this book which retails for $16.95.

Ridge Services has offered club MEMBERS the opportunity to purchase THE PROFESSIONAL FOOTBALL SELECTION PROGRAM, which normally retails for $35, at the reduced rate of $25. The price includes a T-shirt emblazoned with, "I BEAT MY BOOKIE WITH THE RIDGE SYSTEM!". This pro football point spread analyzer is an Extended BASIC program which is available on either tape or disk. A total of three copies must be ordered in order to qualify for the discount.

We requested further information from the following:

TRIOT+ SOFTWARE - PO Box 115 - Liscomb, IA 50148. We were interested in their CATALOG COMMENTS & DISK ENVELOPE DESIGNER program. This is one of the best ways that we know of to index your disk files.

We received a response from TRIOT (along with sample outputs) within four days of our inquiry!

FOUNDATION COMPUTING - 74 Claire Way - Tiburon, CA 94920. We inquired about their 80 Column Card. They have not and will not manufacture a run of the Version 1 cards. When they announced the product they received so many inquiries and suggestions about other features that TI users wished to have included, that Foundation abandoned the first run and concentrated on the improvements. They will be contacting us shortly to let us know what the Version 2 cards will do and when they will be available. Keep tuned! They also included further info on their 128K cards.

Our inquiries to QUALITY 99 SOFTWARE (Wash.DC) resulted in a brochure. Milton Bradley responded with misinformation, but did provide further data on the MBX system. BEL AYR SOFTWARE (Canada) has not responded (it's been over a month). INNOVATIVE ELECTRONICS AND COMPUTING (Denver), manufacturers of cable assemblies, enclosed a brochure listing the hardware available for the TI99/4A. Their overstock price list includes low prices for cassette cables, DS/DD disk drives, and RS232 cards.

Noteworthy catalogs and/or product news received since the last newsletter include:

TRITON PRODUCTS CO. - 1-800-227-6900. Their newest brochure includes super prices on Q*BERT, POPEYE, & MINER 2049er along with reduced prices for many "TI" cartridges.

UNISOURCE - 1-800-858-4580. Their latest price list includes PERSONAL REPORT GENERATOR ($19.95) and CONGO BONGO for only $12.95!

DATA FLEX SOFTWARE - 4420E 100N - Marion, IN 46952. Data Flex announced DFX-PRINT, a bit image screen print utility, which they claim is the most universal, the most useful, and the easiest to use of all currently available screen printing utilities for the TI. They sent some sample printouts which are quite good.

The brochures for all these products are available for your inspection at the meetings. If you cannot attend and would like further info call or write: H.M. LaBonville - 121 Camelot Drive RFD5 - Bedford 03102 (472-3369).

At this time we would like to thank the COMPUTER SHOPPER (Titusville, FL) for listing our club in their monthly publication. By the way, CS has compiled Randy Holcomb's series, "Innermost Secrets of the TI99/4A" into book form. In it Randy explains the innerworkings of the 99, the architecture of the TMS9900 microprocessor, and gives assembly language programming tips and more. It is well worth the $5.95/copy charge. Copies of the order blanks will be available at the next meeting.

Please mention that you belong to a USER GROUP when ordering from any company... it helps us and it helps you.

REMINDER: Our meetings are generally held on the last Wednesday of the month. The next MEETING will be held in the function room of PABLO'S at 7:30 pm on WEDNESDAY, OCTOBER 31st. The November meeting has been scheduled for Wednesday, November 28th. Please mark your calendars accordingly!

SEE YOU THERE!!

TALKING to YOUR TI/EPSON PRINTER   Richard J. Bailey
        (and having it listen)   68A Church Street
                                                    Gonic,N. H. 03867

     Assuming that you have your printer connected to your computer and
the whole system is finally working, you'll probably start listing
programs to check the printer operation.   Next you'll think about
sending the printout of a really neat program or an article you've
written to this newsletter. The normal print mode really doesn't look
that great so you decide to experiment with sending printer control
codes to modify the printout. Seeing LIST "RS232.BA=2400.DA=8" doesn't
allow print modification, you have to send the printer control codes
before trying to list your program. In the following examples I've
used RS232.BA=2400.DA=8 but you must use the correct name for your
printer. If you have a different make of printer, the ideas presented
here are still useful but the printer control codes will be different.
To list your program in the immediate mode type:
     OLD DSK1.YOURPROGRM [ENTER]
     OPEN #1:"RS232.BA=2400.DA=8" [ENTER]
     PRINT #1:CHR$(27);"E" [ENTER]
     CLOSE #1 [ENTER]
     LIST "RS232.BA=2400.DA=8" [ENTER]
     Note that you can say LIST "RS232.BA=240.DA=8":100-200 to just print
lines 100-200 if you want. CHR$(27) is the ASCII code for ESCAPE ,
ESCAPE "E" is the printer control code for emphasized print. You could
use   CHR$(27);"E" or   CHR$(27);CHR$(69) or   CHR$(27)&CHR$(69) or
CHR$(27)&"E" (or CTRL U FCTN R CTRL U E with TI-WRITER). These are all
interpreted by the printer to be the code for emphasized print. The
printer control codes are listed in the printer manual, the CTRL
control codes in the TI-WRITER manual on pages 98 and 146, and the
ASCII character codes in most TI reference manuals.
     A simpler method of sending control codes to the printer is to have
a program with all the codes you would want to use selectable by
function so you wouldn't have to look up the control codes every time
you want to use them. If properly written the program could print test
lines , or text you input, to allow you to check what the printout will
look like.   An example of the printout from such a program is at the
end of this article. If you want more information on getting a copy of
this extended basic printer set-up program, please contact me.
     Sending control codes within a basic program is relatively easy. If
you have a program that prints to the screen in many cases you can
change the PRINT statements to PRINT #1: statements and output your
text to the printer. You have to OPEN a file before you try to print
to it or you'll get an ERROR message and you should always reset the
printer to the normal print mode and close the file when you are
through. The EPSON printer has a master reset code but with the TI you
must reset each code individually. An example of a program that will
read and print the first 10 lines of a file created by the TI-WRITER or
any DIS/VAR 80 file is:
     120 OPEN #1:"DSK1.FILENAME"
     130 OPEN #2:"RS232.BA=2400.DA=8"
     140 PRINT #2:CHR$(27);"E"
     150 FOR I=1 TO 10
     160 LINPUT #1:A$
     170 PRINT #2:A$
     180 NEXT I
     190 PRINT #2:CHR$(27);"F"
     200 CLOSE #1 :: CLOSE #2 :: END

FILENAME is, of course, the name of the file you want to read. Different files must have different file numbers if they are to be opened at the same time. Check the OPEN statement in the TI extended basic manual for more information.

One interesting note on using PRINT # is that the screen is file Ø. Changing line 170 to PRINT #0:A$ will print to the screen. If you add the following lines to the previous program:

    100 INPUT "SCREEN OR PRINTER? S/P" :SP$
    110 IF SP$="S" THEN Z=0 ELSE IF SP$="P" THEN Z=2 ELSE 100

and change line 170 to PRINT #Z:A$ and you get a program that will print a DIS/VAR 80 file to either the screen or a printer.

If you have a long program that is opening and closing printer files and/or sending control codes to the printer in several places throughout the program, try the following method:

    270 OPEN #2:PRINTER$
    340 PRINT #2:EMPHASIZED$;DOUBLESTRIKE$
    970 PRINT #2:RESETPRINTER$ :: CLOSE #2 :: END

Use lines similar to these as needed in your program but near the beginning, before any of the lines that use them, have a line to define these names. For example:

    190 PRINTER$="RS232.BA=2400.DA=8" :: EMPHASIZED$=CHR$(27)&"E" ::
    DOUBLESTRIKE$=CHR$(27)&"G" :: RESETPRINTER$=CHR$(27)&CHR$(70)

The advantage of this method is that to change the printer name or any of the control codes requires that you change one line instead of searching through your whole program to see where you've used these codes. Also if you look at the program 6 months from now PRINT #2:EMPHASIZED isn't as cryptic as PRINT #2:CHR$(27);CHR$(69) . Note that the printer codes in the definitions cannot use the semicolon because it would be interepreted as a print separator-you must use & .

To send control codes with the TI-WRITER you can use the transliteration command. For instance, to send the emphasized print code, include .TL 124:27,69 at the begining of your TI-WRITER file. This redefines character 124 (¦) to be the combination of CHR$(27)&CHR$(69) or ESCAPE E for emphasized print so every time you use ¦ you will turn on the emphasized print mode. Just make sure you don't redefine a character (like an A ,CHR$(65)) that you need to use later or every occurance of that character will be interpreted as the control code. You can define one character to be several codes if needed like .TL 124:27,69,27,71 for emphasized-double strike.

I hope that you have found the information in this article interesting and useful and that it inspires you to write an article on something you've tried that others might benefit from. Most of my ideas come from other articles and programs with occasionally a spark of originality.

This is a line in the NORMAL print mode on the EPSON printer at 80char/line.
EMPHASIZED print "smears" horizontally and DOUBLE-STRIKE "smears" vertically.
DOUBLE-STRIKE EMPHASIZED printing is near letter quality but is slow.
With COMPRESSED print you can get up to 132 characters on one line if you use OPEN #2:RS232.BA=2400.DA=8",VARIABLE 132
DOUBLE-WIDTH DOUBLE-STRIKE EMPHASIZED!!
COMPRESSED DOUBLE-WIDTH OPEN #2:"RS232.BA=2400.DA=8",VARIABLE 66
ITALICS DOUBLE-STRIKE EMPHASIZED print mode
SUBSCRIPT ITALICS is hard to read if you use lower case.
SUPERSCRIPT print looks the same as SUBSCRIPT unless it's on the same line.

SUBSCRIPT COMPRESSED is useful for small labels but remember to change line spacing to 18/216"

AMATEUR RADIO AND COMPUTERS
by Paul R. Wells--WA3HFL

Probably a lot of you in the Delaware Valley Users Group are aware of amateur radio. It has been around for a long time, since before WWI as a matter of fact. You may have a mental image of a 'ham' as a wierd sort of person whose interest in the outside world consists mainly of what new country he can talk to. This image while true of a few hard-core types whose primary interest in the hobby is mainly competitive in where he is on the DXCC Honor Roll (a list of operators whose total number of confirmed contacts with foreign countries amount to 300 or more), is not true of the amateur radio community at large. Amateurs also have been at the forefront of new uses of computers in communications. We, as 'hams' have been keenly aware of the potential of the 'micro' for some time. The computer has revolutionized certain aspects of our hobby.

Computers are capable of decoding morse code and sending morse code with a accuracy not possible before now. Computers also can send and recieve teletype messages. A more esoteric use has been the use of micro-computers in controlling our amateur radio satelites...that's right, we amateurs have actually put several communications 'birds' up. At our next meeting, look around....chances are that you'll be sitting near a ham!

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The Delaware Valley Users Group
Newsletter
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NEWSLETTER CORRESPONDENCE
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Please send all Newsletter related ideas, articles, hints, etc. to:

Helene M. LaBonville
121 Camelot Drive RFD5
Bedford, NH 03102
472-3369

THE FOLLOWING WAS REPRINTED FROM:
HOME COMPUTER USERS SPOTLIGHT
The Milwaukee Area 99/4 Users Group

Double Sided FORTH
by J. W. Vincent

So you have double sided disk drives on your TI 99/4A. When you got your copy of TI FORTH from the user group you immediately tried copying it to a double sided disk using Disk Manager II, didn't you? Didn't work so hot did it? Well this article will show you what to do to make TI FORTH work with your double-sided drives.

TI FORTH uses direct sector addressing to read/write screens to disk. Each screen is 1024 bytes or four single density sectors long. To be compatable with the Disk Manager module and normal file I/O for initial loading of the FORTH program, the FORTH disk uses the standard disk header and directory sectors. Since there are only three files on the disk, this means sectors zero through four are allocated to this overhead operation. The first file, FORTH (actually just a short assembly language

loader program) begins in sector 22 (hex) as usual. It is followed by the actual FORTH program file which is also handled via normal I/O routines and occupies up to sector 4C. SYS-SCRNS occupies all remaining sectors on the disk, for single sided thats 138 (hex). Thus the file SYS-SCRNS takes up not only the sectors from 4D to the end of the disk, but also has an extent that takes up sectors 5 to 21 (hex).

Now since TI FORTH uses direct sector addressing, it expects screen 3 (the boot screen) to be in sectors C thru F. If you use Disk Manager to copy these three files from a single sided disk to a double sided disk, the Disk Manager is able to put the whole SYS-SCRNS file on disk contigously. No extents are required, thus what was at sector 5 to 21 is now at sector 168 to 184. Is it any wonder FORTH acts strange? The boot screen only contains garbage!

To remedy this situation we must copy a single sided disk, sector for sector, to a double sided one, and then doctor sectors zero and four to comply with the Disk Manager's standards. Then to use the extra capacity we will update a couple screens. Your first step however, must be to initialize a double sided disk using the Disk Manager II. Next load FORTH and set DISK_LO to zero. Load the -COPY screens and use the command FORTH-COPY to dupe your single sided FORTH to the double sided disk. If you don't have two drives, use Disk Manager to copy all three files but then use FORTH to copy screens 1 thru 9. Here's the technique:

    n BLOCK UPDATE   where n is screen
                     number to be read
                     from old disk

    FLUSH   writes screen to
                     new disk, moves

up to 5 screens
at a time

Now, edit screen 3 to add the following commands:

    180 DISK_SIZE ! (supports double
                      sided capacity
                      per disk)

    360 DISK_HI !   (supports two
                      double sided
                      drives)

Next time you boot FORTH it will recognize screen 175 as part of disk 1 and screen 185 as part of disk 2. Now let's fix the commands in the -COPY screens. Edit screen 39. The value 90 appears once in DTEST and twice in FORTH-COPY. Change all three occurances to 180. Next edit screen 40 with the following:

Line	Current	Change to
3	168	2D0
5	2000	2028
5	12 + 26	12 + 0201 SWAP ! DUP 14 + 24
10	165	2CD
13	4016	802C

Now let's make our FORTH disk compatable with Disk Manager II. Here's the word you need to do it:

```
HEX
: DOUBLE-FORTH 0 BLOCK UPDATE DUP A
+ 2D0 SWAP ! DUP 10 + 2028 SWAP !
12 + 0201 SWAP ! 1 BLOCK UPDATE DUP
E + 2A0 SWAP ! DUP 1C + 4D20 SWAP !
DUP 1E + 2805 SWAP ! 20 + F029 SWAP
! FLUSH ;
DECIMAL DOUBLE-FORTH
```

>>> TI FORTH BUGS <<<
Screen 72, line 5, change "PAB_ADDR" to "PAB-ADDR".

Forth manual, chapter 6, page 3, "SCREEN" must follow 2 color values, foreground and background colors, or screen writing becomes transparent.

CONVERTING PROGRAMS TO TI BASIC
by Ellen Rule

Most TI 99/4A owners can remember a time (not so long ago!) when the written word for the TI was scarce indeed. Once our creative interests were sparked by the program listings in the back of the Users' Manual, then what? Sooner or later, most of us stumbled across Compute!, 99'er (now Home Computer Magazine) and other scattered issues of magazines with listings for the TI. Books of computer programs appeared on the shelves, but woefully few written for TI. Thus began the job of converting programs from "other" BASIC to something the Home Computer could understand.

The easiest conversions involve the semi-obvious transformations from commands such as CLS to CALL CLEAR. A chart demonstrating these changes follows this text. One must exercise some caution, however, to avoid assuming faulty conversion. For example, CLEAR in TRS-80 BASIC instructs the CPU to allocate memory space for subscripted variables, NOT to clear the screen. In this case the error would be of little consequence. However, while POS(n) in APPLESOFT returns the current horizontal column of the cursor (a number from 0-39), POS(string 1,string 2,numeric expression) in TI BASIC produces the position of string 2 in string 1, beginning its search at the position specified by the numeric expression.

One area of conversion that can be confusing is the transfer of proper punctuation from one genre of BASIC to another. If you keep in mind that a colon (:) will effect a carriage return, the semi-colon (;) continues the data on the same display line, and the comma (,) places the string at the beginning of the next "zone" (zones begin at columns 1 and 15), then you should be able to avoid syntax errors and obtain the output that you desire. Another item not to be overlooked is the minor difference in punctuation for the TAB command. The User's Reference Guide demonstrates proper use of punctuation signs under the PRINT command descriptions and should be consulted for exact form.

Multiple statement lines pose one of the trickiest aspects of program conversion for those without TI Extended BASIC. First, it is necessary to determine just exactly where the progam goes in each segment of the multiple-statement line. Remember that the first part of an IF-THEN statement directs the program on to the next line if the criterion is NOT met; the line must therefor be reworded to direct action past ALL of the lines being created by the dismantling of one multi-statement line. For example:

```
100 IF J<6 THEN PRINT "YOU ARE LOW ON FUEL":GOTO 290
110 PRINT "WHICH DIRECTION?"
120 INPUT D$
```

translates to:

```
100 IF J>=6 THEN 110
105 PRINT "YOU ARE LOW ON FUEL"
108 GOTO 290
110 INPUT "WHICH DIRECTION?":D$
```

Notice the use of TI's INPUT statement in the converted example.

You may be able to use Boolean Operators AND (*) and OR(+):

```
200 IF B$(X)=A$ AND K=5 THEN L=16:GOTO 1620
210 PRINT "THE DOOR IS LOCKED"
```

becomes:

```
200 IF (B$(X)=A$)*(K=5) THEN 203 ELSE 210
203 L=16
205 GOTO 1620
210 PRINT "THE DOOR IS LOCKED"
```

If you don't have enough room to insert new lines, RESequencing will create 9 potential lines between each prsent line. (HINT: document the program subsections with REM statements to provide "landmarks" before resequencing.)

Like IF-THEN statements, Random-number functions are easy to convert ONCE you figure out what range of numbers is desired. In TRS-80 BASIC (and most generic BASICs), RND(2) will return 1 or 2; TI BASIC requires INT(2*RND)+1 for the same result. In APPLESOFT, RND(n), where n is positive, returns a new random number; if n=0, APPLESOFT re-uses its last random number. For example:

```
10 IF RND(2)<.5 THEN 500
60 IF RND(0)<.75 THEN 600
```

becomes:

```
10 Q=RND
15 IF Q<.5 THEN 500
60 IF Q<.75 THEN 600
```

If n is a negative number, it acts as a "seed" number, and all other random functions will follow a standard sequence. In IBM (or many other BASICs), you may find an INKEY$ statement within a loop which increments a variable; when a key is pressed, the variable is used to seed the random-number generator. Or, you may see RANDOMIZE VAL(RIGHT$(TIME$,2)). Don't panic! Use RANDOMIZE [seed] or leave out the seed altogether.

Other number-related "housekeeping" items:

* ASCII values for upper case alphabet on the ZX-1 start at 38, not 65, and must therefor be adjusted.

* Some BASICs will allow out-of-range values to "fall through" an ON GOTO statement. To avoid a BAD VALUE error in TI BASIC, weed out extraneous values with an IF-THEN statement that directs the program around the ON GOTO line should the value be out-of-range.

* The BASIC statement FOR Z=A to B (where A>B) will execute once in some versions of BASIC but not at all in TI BASIC. Use STEP -1 or test for A>B and make B=A before entering the loop.

8

String functions require little translation. Remember to DIMension any array with over 10 items, and don't forget to use "&" (shift 7) instead of "+" to concatenate (join) strings. Guidelines for the SEG$ function are:

```
LEFT$(A$,n) becomes SEG$(A$,1,n)
MID$(A$,n1,n2) becomes SEG$(A$,n1,n2)
RIGHT$(A$,n) becomes SEG$(A$,LEN(A$)-n+1,n)
```

The other thing to remember about strings is that the TI won't allow the use of the same variable name for a numeric variable AND a subscripted variable. Hence, no L and L(x) in the same program. (Otherwise known as a STRING-NUMBER MISMATCH.) It's good programming technique to inventory the program's variables BEFORE you end up having to go back and make a lot if messy corrections.

Next time I will discuss translating the dreaded PEEKs and POKEs, TI BASIC modifications for ACCEPT AT, and how to DISPLAY AT (or SET, PLOT or LOCATE) without Extended BASIC.

CONVERSION CHART

TI BASIC	"OTHER" BASIC
CALL KEY	INKEY$, GET
SEG$	LEFT$,RIGHT$,MID$
	A$(n1 to n2), A$(n1,n2)
CALL CLEAR	CLS, HOME, CLR
DEF	DEF FN(name)
CALL HCHAR	HLIN...AT
	SET/RESET
CALL VCHAR	VLIN...AT
CALL GCHAR	PEEK
RND	RND(n)
String of n spaces	SPC(n)
CALL COLOR(3,2,16)	INVERSE
(black numbers on white)...(black letters on white)	
CALL COLOR (3,16,2)	FLASH
(white numbers on black)..........(flashes output)	
resets FLASH and INVERSE	NORMAL

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NEWSLETTER EXCHANGE

NHUG participates in a Newsletter Exchange Program with other recognized TI User Groups. This offer is made with the understanding that, with proper credit, your User Group can reprint articles from the NHUG Newsletter, and with proper credit, we can reprint articles from other TI User Group newsletters.

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PLEASE NOTE... Only a limited number of copies of our software is available at the meetings. In order to assure that you will get yours, PLEASE call or write to reserve your selections.
Helene LaBonville
121 Camelot Drive RFD5
Bedford, NH 03102
Phone: 472-3369
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```

I/O PORT

Dear Editor:

        I have an interesting problem that, it seems to me, should be just the thing a computer would be ideal for. I just have not learned enough to write a program for it, nor have I seen one on the market, but perhaps one of our members has one that will do the trick.
        The problem is this: Our church has about ten memorial funds which have been combined into one Market Fund. Each month the bank sends a statement which indicates the current interest rate, the number of days in the period, and the interest accrued for that month. Now, the proper share of the interest has to be calculated for each of the ten funds. In the meantime, money has been added or paid out from some or all of the individual funds. Our Treasurer has to figure out just how much money a dollar earned each day and how much money was in the fund on each day and then total them up and add to each fund. There just has to be a better way! Can anyone help?

                Alfred Kastberg - RR9 Box3H - Hopkinton, NH 03301
                System: 16K Extended BASIC, cassette, NO Printer

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    I have over 600 non-copyrighted programs in my library. I will process your choices onto cassette, disk, or hardcopy for $1.00 each and copy unit. Comparable programs may be exchanged. For more info, see me at the next meeting or contact me at:

JEROME G. BELAIR
672 HUSE ROAD #38
MANCHESTER, NH 03103
603-669-9498
Please enclose a SASE for written info
10

In and Out of Warranty Exchange Charges*

There is no charge on defective 99/4A computer hardware and software if returned to the Exchange Center within 30 days after the item was purchased. Defective equipment returned to the Exchange Center within 31 to 90 days after purchace, and out of warranty exchange charges are as follows:

Item	In Warranty Exchange	Out of Warranty Exchange
Console....................	$ 7.00	$ 28.25
Power Pac.................	3.00	10.00
Modulator.................	3.00	10.00
Speech Synthesizer........	5.00	32.50
Joysticks.................	5.00	11.25
P-Box.....................	7.00	58.00
Flex Cable...............	7.00	25.00
RS-232 Card..............	5.00	36.00
Disk Controller Card......	5.00	47.00
Disk Drive: Internal....	5.00	63.50
External....	5.00	83.00
32K Memory Expansion Card.	5.00	47.00
Recorder..................	5.00	19.50
Software..................	3.00	***

*All exchanges subject to   sales tax.
**Out of warranty exchange prices for PHT and PHD items are Suggested Retail.
***Approximate out of warranty exchange prices for PHM items varies.

Shipping & Handling**

Console, P-Box, Monitor or Printer.....$ 7.00	
All Peripherals.......................... 5.00	
Modulator or Power Pac................. 2.00	
All PHA items........................... 3.00	
Software: For one..................... 3.00	
For two or more............ 4.00	

**Shipping and handling charges are not taxed.

:

THIS IS BY NO MEANS A COMPLETE LIST Tom Sutliffe Personally travelled to Waltham to obtain a list, but they wouldn't allow him to Photocopy it! In any event, Tom suggests that you call before going down or shipping to insure that they have the replacements.

11

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14  !********************
16  !*SPRITE TITLE ROUTINE*
18  !*              BY     *
20  !* RICHARD J. BAILEY  *
22  !* 68A CHURCH STREET  *
24  !* GONIC, N.H. 03867  *
26  !********************
28  !* ADD TO BEGINING OF *
30  !*PROGRAM. 14 THRU 78,*
32  !*AND GOTO 120 AT END *
34  !*NEED NOT BE ADDED TO*
36  !* YOUR  OWN PROGRAM. *
38  !* ENTER MESSAGE DATA *
40  !* ON LINE 110. USE ~ *
42  !* (FCTN W) FOR SPACE *
44  !* OR CENTERING LINE. *
46  !*USE 21 CHAR&SPACES. *
48  !*TYPE IN AS MUCH OF  *
50  !*LINE 120 AS POSSIBLE*
52  !* & PRESS ENTER. THEN*
54  !*REDO & (FCTN D) TO  *
56  !*MOVE TO THE END OF  *
58  !*LINE. TYPE IN THE   *
60  !*REST OF THE LINE,AND*
62  !*PRESS ENTER.        *
64  !*CHANGE INT(RND*14+3)*
66  !* IN PROGRAM LINE 120*
68  !*TO INT(RND*0+X) FOR *
70  !* ONE COLOR MESSAGE. *
72  !*X=COLOR TABLE NUMBER*
74  !*5 (DARK BLUE) LOOKS *
76  !*GOOD ON 14 SCREEN.  *
78  !********************
100 DIM R$(21):: CALL CHAR(1
26,"0"):: CALL MAGNIFY(2)::
CALL CLEAR :: CALL SCREEN(2)
:: FOR X=1 TO 21 :: READ R$(
X):: NEXT X
110 DATA N,H,~,9,9,',e,r,s,~
,~,U,S,E,R,~,G,R,O,U,P
120 FOR X=21 TO 1 STEP -1 ::
 CALL SPRITE(#X,ASC(R$(X)),I
NT(RND*14+3),1,1,7,10):: NEX
T X :: FOR X=1 TO 21 :: CALL
 MOTION(#X,0,0):: YY=99*PI :
: CALL SOUND(20,110*X,0):: N
EXT X
130 FOR J=1 TO 400 :: NEXT J
 :: FOR I=1 TO 21 :: FOR K=1
 TO 20 :: NEXT K :: CALL SOU
ND(20,2500-I*110,0):: CALL D
ELSPRITE(#I):: NEXT I :: GOT
O 120
```
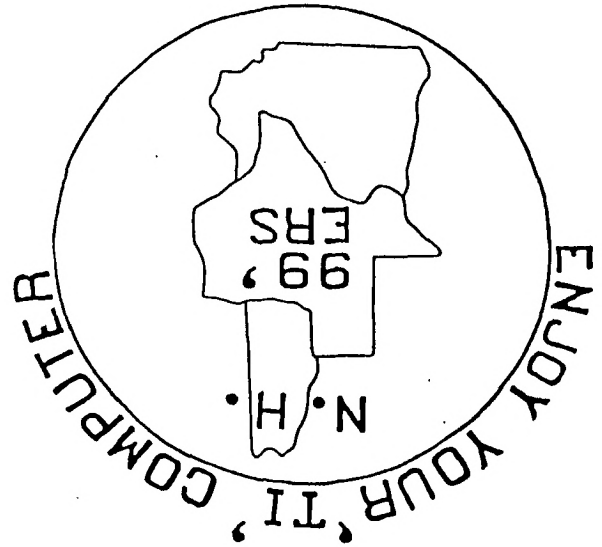
ENJOY!

ENJOY YOUR TI' COMPUTER

N.H.

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ERS

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