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at the I-O part

vol. II, no. 7 July 1984

Editor Frederick Hawkins 432-5913

LEHIGH VALLEY COMPUTER GROUP

illustration- where is it and what's being said? see below

next meeting: Monday August 20
 Community Room, 1st Nat'l Bank
 7th and Hamilton, Allentown

PROJECT OUTREACH: newsletter exchange

We Lehigh Valley users are trying to expand our User Group network. We currently exchange newsletters with just eight other groups. In the past, we ordinarily sent to about sixteen. However, starting last month, we have begun to send to about one hundred additional groups.

Nearly every one of these new additions is based on a year-old User Group list. And every one is a blind attempt at exchange; nobody asked us first. (Except the Edmonton, Alberta 99'ers --- [we'll get you this month]). So, if you get this and we've got the wrong address, group name, etc. PLEASE LET US KNOW. Write to:

Lehigh 99'er Computer Group
 PO Box 4837
 1501 Lehigh St.
 Allentown, Penna. 18103

Starting this month, we're going to divide our list into two sections: an active file of exchanging groups, and a rotating list of black holes. The way it works is simple: we print out labels of the actives every month and the rest when we use them up. Incidentally, he said threateningly, the top item on the black hole list is the International UG in Bethany, OK. We don't get beans from them.

For non-publishing groups, new start-ups, fade-aways and apathy-stricken: drop us a post card or what-have-you and we'll put you on the active list for another three months. Yeah, life is hard.

Our active file swelled by more than 12% today with the welcome arrival of a fat newsletter from the BOISE 99ERS COMPUTER CLUB, (1331 Colorado Ave., Boise, Idaho 83706). Just in time for a quick glance before we went to press... We'll pass on their deadbeat reference though.

By the way, THE SUNCOAST BEEPER changed their address. Now it's at 945 Montocello Blvd No., St Petersburg, Fla., 33703. They put out an attractive newsletter and even quote us every now and then. Thanks, all.

Need a list? Send a disk and SASE to us.

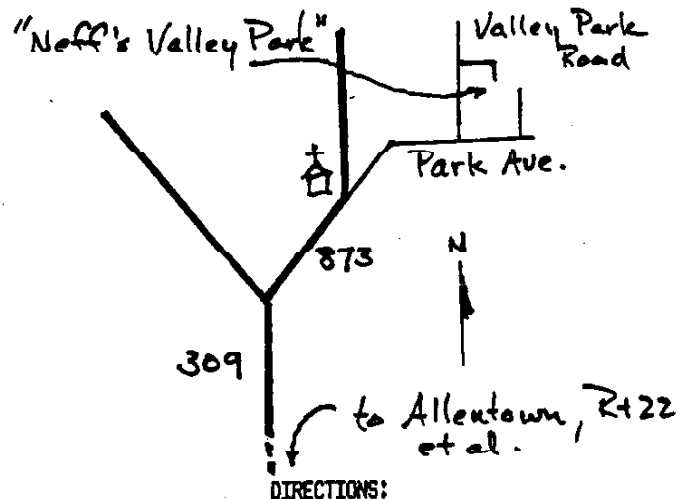
>Frederick Hawkins

MID/AMERICA: we got it!

and remember this date:

AUGUST 25 Lehigh 99er's Family Picnic and Pool (splash splash) Party.

Only five more weeks before our Picnic, so if you haven't done so already, mark this date on your calendar now. Bring the family for a day of swimming, ball playing, picnicking, and some old fashioned FUN, FUN, FUN! There is a volleyball area for use as well as a baseball field, if any of you are interested, please bring your bats, balls, gloves, a volleyball net, and a volleyball. There is also an area for quoits. Bring what you will need for the day, there is ample room for a number of grills. Alcoholic beverages are permitted in the park however, this is a family park, so please keep this in mind. Remember the pavillion is open to us from 10:30A.M. to 9:00P.M. and the pool is open from 12:30 to 7:30P.M. Pool admission is \$2.00 for ages 4-13 and \$3.00 for age 14 and up.



DIRECTIONS:

From Allentown: Take 22 west to 309 north. North on 309, through Schnecksville, 5.9 miles to the 873-309 split. Right on 873 towards Neffs. At Union Church (don't worry you won't miss it) the road curves to the left, YOU go straight (be careful) onto East Park Ave. Follow this road around and under the turnpike overpass, to Valley Park Road. Turn left (You won't miss this one either, there will be a sign). Follow this road a couple of blocks to the next sign, turn right, You're there. Cars may be unloaded at the pavillion, but must be parked on the grass. Hope to see you there!

Jim Peterson, and more

Jim Peterson, owner of Tigercub Software lets user groups reprint mini-programs, so we mention his name. One of the on-going fascinations about writing a monthly sheet is seeing what he's turned out. Many of them are pretty good, and all are interesting. The other

back to the BASICS: a console

fascination about Tigercub Tips is his moaning of no sales. So, we'll plug his:

Catalog is one buck, refundable with first sale. Or if you just ask. Can't be that bad. Extra programs with any disk order. (figure he just fills em up.) All programs are priced at \$3 buck each. First class mail, sent the day he gets your order.

He's described Tigercub as a kitchen table enterprise. Fair enough, and as such deserves a little more help than Big Bucks Marketer A\$. You assign the string.

auto music, theme & variations

Here's Jim at his economic best: (Well, make that good enough for Users purposes...) A thirteen line music saker in the key of A.

```

100 RANDOMIZE
110 DIM N(30)
120 F=220
130 FOR J=0 TO 36
140 X=X+1+(X=12)*12
150 IF (X=2)+(X=5)+(X=7)+(X=
10)+(X=12) THEN 180
160 Y=Y+1
170 N(Y)=INT(F*1.059463094^J
)
180 NEXT J
190 K=8
200 K=K-INT(5*8*ND+1)+INT(5*8*
ND+1)+(K>21)*2-(K<1)*2
210 IF (K<1)+(K>21) THEN 220
220 CALL SOUND(-999,N(K),0,N
(K)*2,0,N(K)*3.75,30,-4,5)
230 GOTO 200

```

Pretty tuneful for just a handful of code, honto neh? Now if you just follow through a little more we'll kick the BASIC into submission----->>>>

Theme: First we'll see what he's up to; add the following line.

```
221 PRINT CHR$(40+K)
```

Meanwhile, back at the ranch, Tigercub Software is located at 156 Collingwood Ave.
Columbus, Ohio 43213

Theme: Still checking. Change line 210 and add two.

```
210 IF (K<1)+(K>21) THEN 250
```

```
250 PRINT "out of range",K
260 GOTO 200
```

By now you'll have noticed a major slow down. And that's why so few good games get written in console BASIC. Running this for a while we can note the values of K, with the aim of trying to get rid of the IF in line 210, thereby going faster. Add two, change two:

```
208 PRINT K;
212 PRINT K;
210 K=K-20*(K<1)+20*(K>21)
221 PRINT K
```

Variation: Now we hop from either end of the scale, but didn't gain much if any speed. Let's tackle line 200. Notice that we're adding AND subtracting. We can shorten this, and still do the same thing. Change one:

```
200 K=K-INT(5-(10*8*ND+1))*(K
>21)*2-(K<1)*2
```

Variation: Remember lines 250, 260? Don't need 'em now, delete two. Let's look for speed elsewhere. We'll start by scoping out our data structure. Add one:

```
172 PRINT Y;J
```

Variation: Notice that although J counts 0 to 36, or 37 times, we fill just 22 places in DIM N. Closer examination shows line 150 does the skipping, and J is a power in line 170.

Step back and punt. Here's our speed. In line 220, we recalculate N twice, each time referring to a DIM. So we're doubly slow. And since we're not really trying to save space, let's expand our DIM and recalculate half as much. Add two, change two.

```
172 N(Y+22)=N(Y)*2
173 N(Y+44)=N(Y)*3.75
220 CALL SOUND(-999,N(K),0,N
(K+22),0,N(K+44),30,-4,5)
```

Oh yeah, delete printing lines, 208, 212 and 221.

And kablooney, change one:

110 DIM N(66)

Variation, baroque embellishments. Now to get some
imagery going. After all, this is a color computer!

automuse, impromptu

Add three:

90 CALL CLEAR
195 CALL HCHAR(K,1,32,32)
221 CALL HCHAR(K,16-K*.5,64+K,K)

Variation, disco land: This flickering is a bit much.
And let's settle on one character for note and erase.
Move 221 up in front of the sound routine. Add one,
change one, delete one:

195 CALL HCHAR(K,1,45,32)
212 CALL HCHAR(K,16-K*.5,43,K)
221

Fugue, ABA form, pullin out all the stops: I'll get you
started, you embellish for all you're worth. Add a
bunch:

91 CALL SCREEN(2)
92 CALL COLOR(1,14,1)
93 CALL COLOR(2,15,1)
230 ON K GOTO 231,232,233,23
4,235,236,237,238,239,240,23
1,232,233,234,235,236,237,23
8,239,240,241,242

It's simple -- just count to ten twice (231 to 240)
and then two more (241, 242). Then, the other ends:

231 GOTO 195 | 237 GOTO 195
232 GOTO 195 | 238 GOTO 195
233 GOTO 195 | 239 GOTO 195
234 GOTO 195 | 240 GOTO 195
235 GOTO 195 | 241 GOTO 195
236 GOTO 195 | 242 GOTO 195

Now, RES to give yourself some breathing room and start
the embellishments. I'll write out four:

340 CALL COLOR(1,7,1)
341 GOTO 250

350 CALL COLOR(1,8,1)
351 CALL COLOR(1,5,1)
352 CALL COLOR(1,14,1)
353 GOTO 250

360 CALL SOUND(-35,-3,4)
361 GOTO 250

400 CALL VCHAR(1,16,42,K)
401 GOTO 250
410 CALL HCHAR(1,1,33,22*32) 411 GOTO 250

Inventions, for many hands: There's more of course, but
they're up to you to write. Other possibilities include
delays, subthemes, key changes or modulations, better
graphics. Adjust line 260 (old line 200) for
progressions, arpeggios, 12 tone themes.

The newsletter would like to see anyone's modifications;
we'll print the best (or even, the only) submissions. As
ever, send them to: Lehigh 99'er Computer Group
PO Box 4837 & 1501 Lehigh St
Allentown, Penna. 18103

>Frederick Hawkins

bulletin#bulletin#bulletin
- - THE SOURCE - -
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- - THE SOURCE - -
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You never know what kind of information will be listed on
an electronic bulletin board. Here's some of the goodies I've
seen posted lately.

There's a FORTH demo disk available. It contains 8 programs
in all. On the disk are such programs as The Game of Life which
is considerably faster than the BASIC version, BREAKFORTH the
FORTH version of BREAKOUT, AstroBug in the graphics mode, Bach's
Fugue in G, TI-Doscope in multi-color mode, and the Sierpinski
Space Filling Curve. More information on this curve can be found
in the JULY 1984 issue of Creative Computing.

Anyone who has seen a copy of this disk or knows where to
obtain one please contact the newsletter staff. We are in the
process of trying to obtain a copy.

Also seen recently was a notice for SUBFILE99. This sounds
like a magazine that you access and read while on the Source.
The latest issue featured an X-BASIC program that turns DIS/VAR
80 files into MERGE code, plus news, tips and program aids.
Unfortunately some problems have occurred when users have tried to
access SUBFILE99. I hope that the problem will be taken care of
by the time you read this newsletter. No additional cost was
mentioned but there may be one.

There were also quite a few ads for books, software and
hardware. If you're looking for something special for your
system this might be the way to find it.

Maybe we can get Bob Kunkle to keep us advised of what's
happening on the bulletin board on Comuserve and then we'll be
twice as informed!

>Dave Hendricks

XBASIC	HEX ADDRESS	POKE ADDR.	IMMEDIATE VALUE	ACTION	RUN MODE	ACTION	Name or pad area
-32730	>8026	32		returns to title screen			used by BASIC
correct:					SAME		
-31962	>8326						830F-8349
-31962	>8326	255		restart XBASIC, and boot LOAD from DSK1.		MUDDLED TITLE SCREEN	
-32116	>828C	4		puts into BASIC from X-BASIC without losing pgm		two honks, junk line;subrout. & SYNTAX ERROR	stack area
correct:						dummy line & 0	
-31860	>838C			well, that's the rumor. didn't work here.		trace,protection on	838A-83BF
-32187	>8245	9		will give you pgm line of 0, which can't be used. Likely part of NUM, needs increment, and start line;		not dependably in either mode	used by BASIC
correct:				Escape with FCTN 8 (redo);			830F-8349
-31931	>8345			> this location is bit mapped; lots goes on here;		trace,clear,protection.	
-32188	>8244	127		Change screen color; give break point. DIDN'T WORK		WITH EITHER MODE	used by BASIC
correct:				try 1 thru 127....			830F-8349
-32116	>828C	1		Puts random characters on screen.		same	subrout stack area
again!							
correct:							
-31860	>838C	8		boots LOAD pgm from DSK1.		muddled title screen	836A-83BF
-32114	>828E	2		random garbage on screen LOCKED UP		locks up; quit some-times works.	subrout stack area
correct:							
-31858	>838E	13		screen goes wild :loses MEM-MAPPED pointers			838A-83BF
			119:	screen gets wild lines and boxes.		AS ABOVE. quit sometimes works!	
-28672	>9000	peek		CALL PEEK(-28762,SP)			
		here					
				When SP=96 (that's CHR\$ A);			
				system knows that speech			
				is connected. You can then CALL SAY stuff.			

Note this address is NOT in PAD, but rather directly to Speech chip, which is memory-mapped at locations >9000 for read and >9400 (-27648) for write.

Pgming trick: BASIC pgs that use Term. Emulator and SPEECH file may use this syntax to print to screen and say the material:

```
OPEN #1:"SPEECH",OUTPUT
FOR A=0 TO 1
PRINT #A:"YOUR PHRASE GOES HERE"
NEXT A
```

thanks to David Douglas
ALOHA 99/4A CUG, Honolulu

in BASIC file #0 is ALWAYS the screen and ALWAYS OPEN.

XBASIC: CALL LOADs and a diatribe

Info from CALL NEWSLETTER, (Atlanta 99/4A CUG, PO Box 19841, Atlanta, Georgia 30325), who got from others and so on -- the network is alive!. What these values do is to meddle with the CPU PAD, so XBASIC does things no right-minded TI software engineer intended. Aha! Just what you need!

Some of these are even useful. Try them out, modify them, write them down, collect 'em. And send to the newsletter. One of these days, September for instance, we'll publish a complete list.... Most have at least two actions, depending on whether you just ENTER them, (immediate mode), or RUN into them.

a diatribe as promised

Notice the table has only two locations that do not require correcting. One, the >9000 address of Speech Synthesizer, can't have a phantom location so it really ought not count. Notice too that the first example really matches the second. I can hear the hackers mutter 'works though----'. So it does. But the headache comes around when you try to keep track of all these addresses.

So. There is only one PAD. It has 256 locations, from >8300 to >83FF, and phantoms at >8000, >8100, and >8200. They're all the same, check if you like. Keeping consistency with TI manuals (and why not?) let's all use the >8300 series. Who knows, maybe Corcon will put the 1K chip in there, like it should have been in the first place. And if they do, and keep upward capatibility, these lists will be cattle fodder.

One last item: Please check these before publishing. In the table that follows the second or capitalized info is what I've found out. And a question: does anyone know a poke to reboot the LOAD program from the RUN mode? Short of RUN "DSK1.LOAD", that is.

>Frederick Hawkins

odds and ends

Beginning this month, Larry Bausch (phone: 821-1379) will be the Newsletter Librarian. The Library is a set of five complete copies of other clubs' newsletters which we lend out to the Lehigh 99ers. There's a lot of unmined gold in these hills and frankly, the newsletter staff can't get it all. So, we started the library service. Why mention this?

1. No one used this service last month.
2. Expect a new face, Larry's, behind the table at the July meeting. (Important! Becoming an active member is simple -- all you need is desire and interest. Wouldn't it be great if everyone was behind a table? Nah, suppose not...)
3. If you spot an interesting topic or article that we haven't covered, or done as well, or that you would like more information about, PLEASE tell us about it. If you've the time and equipment (word processor, etc.) maybe you could copy the article for us. A painless introduction to newsletter writing!

TI released into the public domain (that's us) the "Advanced Assembly Language Debugger". This is a tracing disassembler (with single step without special hardware!) that was announced before withdrawal but never manufactured. The disk includes a HELP file that contains a rudimentary, typo-ridden introduction followed by instructions. The program files are SBUG, for LOADING from BASIC, and SBUGC for LOADING from the Editor/Assembler & Minix environments. The BASIC version looks like it doesn't work until you hit the "N" key. (Or "Y", but likely you won't be able to get back to BASIC). Interestingly, the disk has Navarone Industry's label on it, along with its 1982 copyright. Therefore, we'll print the disclaimer:

Texas Instruments Incorporated (hereinafter "TI") hereby relinquishes any and all proprietary claims to the software language known (sic) as "Advanced Assembly Language Debugger" to the public for free use thereof, without reservations on the part of TI. It should be understood that AALD software language is not subject to any warranties of fitness, either express or implied, by TI, and TI makes no representations as to the fitness of the AALD software for any intended application by the user. Any use of the AALD software is specifically at the discretion of the user who assumes the entire responsibility for such use.

Contained in an undated letter from William H. Barniea, c/o Texas Instruments, PO Box 53 M/S 5738, Lubbock, Texas 79408. Write him if your group needs a copy. And mention you'd like the TI FORTH kernel.

LEHIGH 99'ERS: Please notice that your mailing labels now show the date of your annual dues. Yellow-marked dates are due NEXT month and those circled in red are OVERDUE.

Into the deadbeat file. From the Boise 99'ers comes this bad reference: the MICRO COMPUTER CORP, somewhere in New York, confirmed by phone the availability of Editor/Assembler cartridges. Then they back ordered them. A Boise member, who also ordered a WIDGET (cartridge slot multiplier) got that. Didn't work. Recommendation: Avoid this Corp. [If you have problems with mail order firms, we'll pass it on.]

About AL --If you don't know anything!

So you've bought the Editor-Assembler cartridge, disks and direction book. Now you're all set to master Assembly language. Right. No wrong, by the time you get to page 17, they, whoever they are, inform you that this manual assumes that you already know a programming language, preferably an assembly language. Ho,ho,ho, and then it goes on to say, there are many fine books available which teach the basics of assembly language use.

If you've mastered ancient Sumerian language and Sanskrit language, assembly language will probably come easy to you. However, if you are like me, you will require small doses of knowledge on this subject at any one time. This to be administered by a competent teacher in addition to a good text book on the subject.

The text that I am using at the present time is, "Learning TI 99/4A Home Computer Assembly Language Programming" by Ira McConic.

This book is written in easy to understand every day English language, in an easily understood manner, which is in contrast to some written by computer engineers who have long ago forgotten that there is a beginner's level.

The book begins with an overview of the book and its objectives. Then it explains "What is assembly language?" Then into the basics of structure of data and the mathematical translations of number conversions, decimal, hexadecimal, binaries, etc. This does require a previous exposure to 7th or 8th grade math.

Each chapter leads into the next. By studying the text methodically I believe one can achieve a knowledge of assembly language. Again I caution a good instructor can save you time and many headaches.

>Bob Kunkle

The Smart Programmer (Millers Graphics, 1475 W. Cypress Ave, San Dimas, CA 91773. \$12.50/year) remains the best source of high-level information and writings about the TI99/4A. By the way, they start your subscription within two weeks. They're also three months behind, but haven't skipped any issues.

HCM on the other hand, does. August is here, some where. Into the dead turkey file. Creeps all. The I-O PORT's August issue will be completely devoted to Assembly Language and FORTH. We need a PASCAL writer. Repeat: WE NEED A PASCAL WRITER. Working on rights to reprint the INFOWORLD article mentioned last issue. You saw it here 2nd.

.. THE SOURCE ..

Earlier this year Bob Kunkle told you about Compuserve, a tele-computing service. This month I plan to give you a little insight into another service available to the TI-99/4A user, The Source!

To use the Source you need a the Terminal Emulator II, RS-232 interface, and a modem. The modem I use is the Volksmodem by Anchor Automation, Inc., which I purchased mail order for only \$48 and works just great.

Initial sign-on costs can be quite high, \$100 as I understand, but Anchor Automation was providing FREE sign-on with the purchase of a modem. Access to the Source from the Allentown dialing area is easy through either Telenet at 435-3330 or Uninet at 437-4654. There is no extra charge for either number. Current hourly rates on the Source are \$20.75 prime (7AM-6PM) and \$7.75 non-prime (6PM-7AM). Your bill will be billed directly to your VISA or Mastercard account and a copy sent to you. Although non-prime rates are significantly lower the response time experienced during prime time is much quicker. The beginning user on the Source may wish to "learn" on non-prime but then use prime time as he gets acclimated to the system.

Using the Source gets you direct access to Texnet, a tele-computing service just for the TI at no additional cost. Through Texnet one can check out what's happening in the world of TI such as sound, graphics, software, service, new ideas, chat with other TI users, and download software from the program exchange. To do all this you must type in various commands. I recommend purchasing the Source command guide available for \$19.95. This will save you money by not having to type "HELP" quite so often and waiting to find out what you did wrong. I have downloaded some programs from the software exchange and find some to be pretty good and some not so good. With the slowness of 300 baud service I find it takes me 10 to 15 minutes to download a program to disk, that's about \$2-\$3 per program. The International User Group maintains the software exchange and

their normal charge for programs by mail is \$2. If the program is listed on Texnet, it's right at your fingertips.

Getting away from Texnet and back to the Source you will find a national bulletin board, electronic mail, shopping, airline reservations, the Stock exchanges, and sports scores. You will also find games to play while "online", hotel and restaurant guides, news services, and many business listings for metal and commodity prices. I personally like the bulletin board, I usually check the listings about once a week and file the ones of interest to me. Often these notices wind up in our newsletter if they seem important enough. You can also find help for some computing problems or advertise software or hardware for sale. I have also consulted the airline schedules and hotel reservations for an upcoming vacation trip. Another feature of the Source is the ability to CHAT with other users online at that time.

Tele-computing is another way to have your computer aid you and the Source is another service to aid your computer. If you happen to get a free sign on I don't see how you can miss?

> Dave Hendricks

now, a message from

We're finally accepting advertisements from all and sundry. Our rates are pretty nominal, mostly based upon our costs. (Which we hope to defray.)

Full page for \$20
Half page for \$12
quarter page for \$7

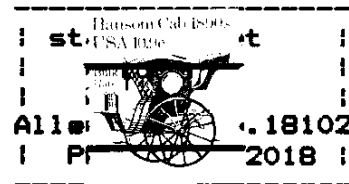
"Camera ready only"

And a reminder to members: We usually have a BUY, SELL, SWAP column. Of course, the newsletter staff can't make that one up. Send a postcard to the newsletter and try to be brief.

**BELOW, FINALLY: Boston harbor, July 4
"no Texas without representation"**

LEHIGH 99'ER COMPUTER GROUP

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Central Alabama 99/4 UG
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When the Real Programmer looks under anything, he sees "nothing but dust there".