| MARCH 1992 | The HUGgers Newsletter | Volume 11, Number 3 |

PRESIDENT'S CORNER

You may have wondered about the HUG
Constitution and Bylaws included in
the last issue (not included in the
exchange newsletters). The reason I
wanted to do this is that I think
every member should have a copy of
the Constitution and Bylaws in a
democratic group. This is the copy
of the Constitution and Bylaws I
found in the Secretary's notebook
back when I was HUG secretary. I
thought at the time it would be an '
important thing to have some day,
something like the Declaration of
Principles in CITIZEN KANE, so I
made a copy of it and that's what
you saw last month.

You undoubtedly noticed it is a bit
outdated. For one thing, the dues
have been changed a bit; for
another, the structure doesn't fit
how we do business. As far as I am
aware of, It has never been amended
since its adoption in 1983. Much of
the wording was dictated by TI.
They were very touchy about using
any of their trade-marked names in
our group name. They also would not
allow Microcompters, Inc. to own the
group like they would have liked.
We can thank them for that. One of
my goals this year is to guide us
through the process of amending the
Constitution and Bylaws so that it
fits our group better.

Speaking of thanks, on behalf of all
of us in the group I would like to
thank th HUG officers for the last
couple of years for all they have
done to make HUG sound financially.
The copier was a great idea and it
will help keep us in good financial
shape. By the time you read this,
we will be at the limit of our
10,000 copy warranty and we will
take a look at our options at the
March meeting. Until then, have fun
TI'n.

                                    - GBL

OFFICERS' CORNER

Last month's meeting was our 2nd
annual swap meet. There was a
fairly decent turn-out, although we
would have liked to have had more
new people show up since we had made
an effort to advertise. Two of our
members, Delbert and Darla Wright
and Dan Eicher attended the
Fest-West fair in Phoenix, Arizona
last month. We had a table and
apparently did well. The next fair
we definitely will be attending will
be the Multi User Group Conference
at Lima, Ohio. This will be the
weekend of May 15-18. We will plan
to have a table and would like to
have as many members attend as
possible. Anyone that would like to
help at Lima is encouraged to
contact one of the officers.
                                    - BCP

MONTHLY MEETING LOCATION
LITTLE HOUSE NEXT TO THE
ST. ANN'S SCHOOL
2839 S. McCLURE
INDIANAPOLIS, IN
MEETING STARTS
AT 2:00 P.M.
MARCH 15, 1992

To all members,

    The club members and officers are
seeking help in selecting projects for
our club to get involved in to make
good profits. The money we make goes
right back to the general fund. With
growth, we have been able to purchase a
copy machine. It has enabled us to
print our monthly news letter, funnel-
web book, etc. If you have any thoughts
or concerns to help our club, call one
of the officers and share.

    Thank you for your time to hear my
side of the coin.

                        Fred Edstrom-Treas.

FEST WEST 1992
February 15-16, 1992

By Don O'Neil
(May be freely distributed provided proper credit is given)

Attending vendors (partial list)

Bud Mills Services (Horizon)
Comprodine
Rave 99
9640 News
Asgard
ESD
The Taylor Co.
Western Horizon Technologies
Notung
MS Express
Crystal
C. Regena
CPA

A Report From
FEST WEST
PHOENIX

The doors opened at 9:00 am Saturday to an enthusiastic crowd. As the
vendors did their last minute setup (myself especially), the crowd gathered
around the tables to see the array of new products and demos. Among the most
"shocking" demos present were those by The Taylor Co. run by Chris Taylor,
WHT and Crystal software. TTC was show casing their innovative operating
environments in Wycove Forth using the RAMBO memory expansion. Crystal was
demoing their latest release of Midi Master 99, and occasionally sneak peeks
at version 3.0. Finally, WHT was demoing their new product Digi-Port.

All in all it was a very successfull gathering, at last count around
250 visitors passed through the doors. Even ESD decided to show up, and
contributed an IDE controller and Hard Drive to the raffle on Sunday. Here
is a short list of what each vendor was promoting for the weekend:

Bud Mills Services (Horizon):
All the usual stuff, Horizon 3000 RAM disks, PGRAM's, RAMBO upgrades,
and Memex cards. Among their new products shipping within a month, Digi-port
and 4a Memex.

Comprodine:
Many amazing new games from Quinton Tormanen- His new releases of WAR
ZONE II, MINE FIELD, and BACKSTEINE version 1.2. Also there was ARTIST CARD
SHOP, a new utility for generating greeting cards.

Rave 99:
Rave was showing their PE/2 expansion box, and the new speech adaptor
KIT.

9640 News:
Beery Miller was selling the new version of LGMA Fortran, GEME, Windows
9640 and a host of other 9640 and 99/4a related software packages.

Asgard:
New products from Asgard this year were TI-PEI, and a new version of
YAPP.

ESD:

ESD showed up and brought along an early prototype of their new HD controller; unfortunately it was not functioning for a demo. ESD anticipates an April 15, 1992 release date for the new IDE controller. Negotiations have taken place and Barry Boone will be writing the DSR. Prices are in the $160-$300 range depending on floppy and hard drive configuration. An IDE controller with 40 Mb drive was priced at $220.

The Taylor Company:

Chris Taylor's newly founded company was present to show off the capabilities of the 99/4a with Wycove Forth and the RAMBO memory addition. His demo's included an incredible graphics operating system with pull-down menus and windows running on a standard 99/4a with RAMBO. He has many promising new products that will hopefully come to the market soon.

Western Horizon Technologies (Myself):

WHT showed its new version of the Digi-Port software and hardware. Pricing and delivery for this product was announced, and will be shipped through Bud Mills Services. WHT showed its prototypes for the 4a Memex memory card and Accelerator. Flyers were distributed explaining other services WHT provides, like PLD and EPROM programming.

Notung:

Notung was present to promote their Disk o' Dinosaurs, and new MIDI Master songs.

MS Express:

Showed their sliding blocks puzzle game.

Crystal Software:

An amazing demonstration of the capabilities of Midi Master 99 and Midi Album. Along with Mike's two keyboards, I brought along my expensive keyboard and we filled the house with amazing music that had Tom Freeman dancing in the aisles!

Regena:

Regena was there to promote her new BASIC software for teaching the alphabet, and other new BASIC programs.

OPA:

OPA showed up to show their new POP (Pile of Programs) cartridge that allows you to hold up to 2Mb of cart's in one. They also announced a new EPROM for the Geneve that automatically boots the 9640 into TI mode WITHOUT A DISK!!! Also announced was the ROS 9 series for the Horizon 3000 Ramdisks; this ROS is an EEPROM based ROS instead of a RAM based one.

After Saturday's event was the vendors forum, hosted by myself. Here are the two documents that arose from that event, one describing its purpose, and the other the results.

VENDORS FORUM

A meeting of the minds.
Hosted by Don O'Neil of WHT

This open discussion between the consumer and the supplier is aimed at

reconciling differences of "wants and needs" to help re-inforce the continuing support of the 99/4a. We hope that business can take the suggestions and complaints from the public to help the current vendors serve you better. This discussion is OPEN TO THE PUBLIC and we hope that you will join us! Topics of discussion this evening will be:

>SOFTWARE, where is it going?

>HARDWARE, when should you buy, and what?

>SUPPORT, what is support? who has good support?

>OPEN SYSTEMS, why should we share information, and when?

>OPEN DISCUSSION, put your PRAISE and complaints on the table.

TONIGHT AT 7:30 pm
in the DEMO ROOM.

The National Committee for TI Standards (NCTIS)

Committee proposal, generated at Fest West 1992, Phoenix Arizona.

To form hardware, software and configuration standards to extend the life of the 99/4a and bring order to the the community.

In these hard times, the TI community need a direction to go. In the past other committees have been formed, such as ANSI to generate standards for hardware and software developers to follow. The standards set forth by NCTIS will aid the users and developers in providing a better software/hardware solution for you. Once standards are set, it is recommended that all current and new software is labeled as standard #1... compliant. These standards should have acronyms for easy recognition.

The following guidelines were discussed at a "Vendors Forum" on February 15, 1992 in Phoenix Arizona. These are recommended standards for the community to ponder upon until May 1992 at the Lima fair, at which time the standards will be decided and publicized.

LEVEL #1: TI 99/4a Console, 32k memory expansion, cassette, and EA/5 loader (EA, Supercart, TI Writer, Multiplan, etc.)

LEVEL #2: Level #1 system PLUS: RS232, and DSSD Disk drive and controller

LEVEL #3: Level #2 system PLUS: at least 128k of CPU RAM, bankable at the
    >6000 space.

LEVEL #4: Level #3 system PLUS: 9938/58 VDP with 192k VDP RAM

PLEASE remember that these are recommendations generated by this first meeting, and are by no means locked in stone. We are presenting these ideas to you, the user, the developer, the market. Please take our recommendations and think carefully about them, and forward your ideas to your local user group, and then on to the Lima fair.

We appreciate your support.

TRACING THE COSTS

OF TI HARDWARE

Erie 99'er User Group
February, 1991

HISTORY OF TI HARDWARE PRICES

In looking through hundreds of Newsletters published by TI User Groups throughout the 80's, the prices of typical TI hardware over the years creates an interesting pattern. In tracing the prices, one must realize that the various peripherals weren't always part of what we refer to now as the P. E. Box.

Back in 1979 and 1980, TI released the 99/4 console (without the "A") plus a series of stand alone peripherals that plug directly into the side of the 99/4 giving rise to the informal term "freight train peripheral." Shortly after te release of the 99/4, TI began production of the "4A" and its "Peripheral Expansion System" (p. E. Box) making the purchase of the "stand-alone" peripherals unnecessary. So the description in the first column below, reflects the "function" of the peripherals throughout the years. The list price of the TI console was initially set for $550 by TI.

HARDWARE	1980	1982	1983	1986	1989
TI Console (TI list $550)	$499	$389	$299	$ 80	$ 25
RF (TV) Modulator	41	38	NA	NA	8
Speech Synthesizer	122	112	NA	75	45
32K RAM	325	299	282	89	30
RS 232 (modem/printer int.)	183	168	118	99	40
Disk Drive Controller	243	224	169	69	30
Disk Drive	399	374	269	99	40
P.E.Box (empty)	NA	NA	169	NA	69
P.E.Box w/32K,RS232,Disk Control & Drive				540	139
Extended Basic				67	70	30
Terminal Emulator II	5		34	20	10

PROGRAMMING MUSIC THE EASY WAY

PART 1

by Jim Peterson

A while ago, I wrote an article about
music programming in which I said that
it was easy but that you almost had to
know how to read music. Well, it is
still easy to program, but no longer
necessary to know how to read it.

Personally, I am about like the
country fiddler who admitted that he
could read music a little, but not
enough to hurt his playing. I know just
a little about reading music but that
has been all I needed to know to
program more than 50 songs. And, if you
have ever heard my Tigercub Country or
Tigercub Gospel disks, you will know
that I have programmed those songs in a
wide variety of styles.

Now, I have put together a few little
routines to enable anyone to program
music on the TI-99/4A very easily, and
in many ways. You DON'T need to know
how to program and you DON'T need to
know how to read music!

First, key in this one-liner and save
it as DSK1.SCALE,MERGE

```
100 DIM N(36):: F=110 :: FOR
 J=1 TO 36 :: N(J)=INT(F*1.0
59463094 (J-1)+.5):: NEXT J
:: N(0)=40000
```

Next, NEW to clear memory and then
key in this music program, which we
will use as an example to experiment
with.

```
110 T=2 :: A=13 :: GOSUB 100
0 :: T=1 :: A=18 :: GOSUB 10
00 :: GOSUB 1000 :: T=3 :: G
OSUB 1000
120 T=1 :: A=20 :: GOSUB 100
0 :: A=22 :: GOSUB 1000 :: A
=23 :: GOSUB 1000 :: T=2 ::
A=27 :: GOSUB 1000 :: T=4 ::
 A=25 :: GOSUB 1000
130 T=1 :: A=30 :: GOSUB 100
0 :: A=29 :: GOSUB 1000 :: T
=5 :: A=27 :: GOSUB 1000
140 T=1 :: A=25 :: GOSUB 100
0 :: A=27 :: GOSUB 1000 :: A
=25 :: GOSUB 1000 :: A=22 ::
```

```
GOSUB 1000 :: T=5 :: A=25 :
: GOSUB 1000 :: T=2 :: GOSUB
 1000
150 T=1 :: A=27 :: GOSUB 100
0 :: GOSUB 1000 :: T=3 :: GO
SUB 1000 :: T=1 :: A=22 :: G
OSUB 1000
160 A=25 :: GOSUB 1000 :: A=
22 :: GOSUB 1000 :: T=2 :: A
=20 :: GOSUB 1000 :: T=4 ::
A=18 :: GOSUB 1000
170 T=1 :: GOSUB 1000 :: A=2
0 :: GOSUB 1000 :: T=5 :: A=
22 :: GOSUB 1000 :: T=1 :: A
=18 :: GOSUB 1000
180 A=22 :: GOSUB 1000 :: A=
27 :: GOSUB 1000 :: T=6 :: A
=25 :: GOSUB 1000 :: T=1 ::
A=18 :: GOSUB 1000 :: A=20 :
: GOSUB 1000
190 T=6 :: A=22 :: GOSUB 100
0 :: T=2 :: A=18 :: GOSUB 10
00 :: A=20 :: GOSUB 1000 ::
T=4 :: A=18 :: GOSUB 1000 ::
 STOP
```

Save that by SAVE DSK1.SHEN just so
you don't lose it, but keep it in
memory, and enter MERGE DSK1.SCALE to
get that one-liner back in.

The music you just keyed in is in
one voice without harmony. Let's see
what you can do with just one voice.
Put in a line 105 D=200 and another
line —
```
1000 CALL SOUND(T*D,N(A),0)
:: RETURN
```
Enter RUN, wait a second, and listen.
If you didn't make any mistakes in
keying in the music, you should hear a
fairly pleasant single-note rendition
of a beautiful old folk song.

Maybe you would prefer a higher key?
Here's the neat part about starting
with that formula in line 100 — besides
the fact that it lets you key in
frequencies in shorthand. To change
key, just change that 110 in line 100
to a higher frequency number. They are
listed in the "blue book" that came
with your computer, but if you lost it
they go upward 110, 117, 123, 131, 139,
147, 156, 165, 175, 185, 196, 208, 220.

You can also lower the key, provi ng
you do not cause the lowest note in
your music to go below frequency 110.
In the piece you keyed in, the lowest

note number used was 13 so you could go down 12 steps. The frequencies are not in the book, but they go 110, 104, 98, 92, 87, 82, 78, 73, 69, 65.
Want the music faster or slower? Just change the 200 in line 105.

Now let's see what else we can do with single-note music. Try this —
1000 CALL SOUND(T*D,N(A),0,N(A)*1.01,0):: RETURN
Has a richer sound, doesn't it? How about this?
1000 CALL SOUND(T*D,N(A),0,N(A)/2,0):: RETURN
Or combine the two —
1000 CALL SOUND(T*D,N(A),0,N(A)*1.01,0,N(A)/2,0):: RETURN
Multiplying a note by 1.01 in another voice will always give a more resonant sound, and dividing a note by two (providing its note number is not less than 13) will always be in harmony — so will multiplying by two, or by four.

How about some real deep down bass music? The TI's tone generators can only go down to frequency 110, but the noise generator can be tuned far below that. The timber of the sound is different and doesn't blend too well with the tones, so use it with caution — but it's great for a tuba solo. Try this —
1000 CALL SOUND(T*D,N(0),30,N(0),30,N(A)*3.75,30,-4,0):: RETURN
Want to go deeper? Try changing the 3.75 to 1.875 — too deep to even be musical, isn't it? Maybe you could improve it by raising the frequency in line 100.
Try changing the 3.75 to 7.5 — not bad, is it? So try doubling it again to 15 — oops! When you go that high you get some very sour notes!
So, go back to 7.5 and change one of those N(0) to N(A) and change the 30 following it to 0. Pretty good, so try also changing the other N(0) to N(A)*1.01 and the 30 after it to 0.
If any of those effects sound like something you might want to try in a piece of music someday, clear the memory with NEW, key it in and save it with SAVE DSK....,MERGE using a different filename for each one. Then,

after you have keyed in some music, you can very quickly merge in different routines and try them. You will find that different ones go better with different songs.
The routines we have been trying all play music with a very strong beat. For a smoother effect, try this —
1000 FOR J=1 TO T :: CALL SOUND(-2999,N(A),0):: GOSUB 1100 :: NEXT J :: RETURN
1100 FOR D=1 TO 99 :: NEXT D :: RETURN
You will notice one thing right away; with this method, a series of the same note gets run together into one long note. Later we will look at ways to get around that.
To change the tempo of the music, just change the value of 99 in line 1100.

Try this method in combination with the effects we tried previously.

Here's another one that gives a very nice effect —
1000 FOR J=1 TO T :: CALL SOUND(-999,N(A),0):: GOSUB 1100 :: CALL SOUND(-999,N(A)*1.01,0):: GOSUB 1100 :: NEXT J :: RETURN
1100 FOR D=1 TO 8 :: NEXT D :: RETURN

Or for a more mournful sound —
1000 FOR J=1 TO T*4 :: CALL SOUND(-999,N(A),0):: CALL SOUND(-999,N(A)*1.01,0):: NEXT J :: RETURN
You can control the tempo by changing the value of 4, but not as precisely as with the previous method, and it does not work well with bass notes. Try changing the 1.01 to 1.02 — also try erasing the *1.01 and change the following 0 to 8, for a mandolin effect.

Those are just a few of the effects you can create with just a single-note melody — experiment and see what else you can discover.

So, just imagine what you will be able to do using all three voices — coming up in part 2 of this article!

MUSIC SUBPROGRAM LISTINGS
By Earl Raguse

The following subprograms are handy for programming music. The variables F,A,D,N stand for Frequency, Attenua- tion (ie loudness), Duration, and Number of times to ring as in bell. If you know what you are doing, you can modify these slightly to get different effects. Mult- iplying or dividing a frequency by 1.2 has the effect of raising or lowering key by one note. The duration of the quaver routine is not exact, and you may wish to fiddle with the divisor for D. Useage is identical to previous listings as you must supply all variables in the CALL statement. This is the end of this series of articles. next month I may do some more things in XBASIC programming.

```
9000 SUB BELL(F,N)
9010 FOR I=1 TO N
9020 FOR V=0 TO 20 STEP 4 ::
CALL SOUND(-99,F*1.783,V+3,
F*1.335,V+3,F,V):: NEXT V
9030 FOR V=20 TO 27 :: CALL
SOUND(-99,F*1.783,V+3,F*1.33
5,V+3,F,V):: NEXT V
9040 NEXT I
9050 SUBEND

9100 SUB WOW(F,D)
9110 FOR R=1 TO D
9120 X=F :: Y=F/.99 :: Z=F/1
9130 FOR V=20 TO 0 STEP -2
9140 CALL SOUND(-99,X,V,Y,V+
3,Z,V+3)
9150 NEXT V
9160 FOR V=0 TO 20 STEP 2
9170 CALL SOUND(-99,X,V+3,Y,
V,Z,V+3)
9180 NEXT V :: NEXT R
9190 SUBEND

9200 SUB MAJCHORD(F,A,D)
9210 X=F :: Y=F/1.26 :: Z=F/
1.5 :: XV=A
9220 YV,ZV=XV+5
9230 CALL SOUND(D,X,XV,Y,YV,
Z,ZV)
9240 SUBEND
```

```
9300 SUB MINCHORD(F,A,D)
9310 X=F :: Y=F/1.19 :: Z=F/
1.5 :: XV=A
9320 YV,ZV=XV+5
9330 CALL SOUND(D,X,XV,Y,YV,
Z,ZV)
9340 SUBEND

9400 SUB QUAVER(F,A,D)
9410 X=F :: Y=F*.99/2 :: Z=F
*1.01/2 :: XV=A :: YV=XV+9 :
: ZV=20
9420 FOR W=1 TO D/100
9430 CALL SOUND(-99,X,XV,Y,Y
V,Z,ZV)
9440 CALL SOUND(-99,X/1.01,X
V+2,Y,YV+4,Z,ZV+4)
9450 NEXT W
9460 CALL SOUND(-1,X/2,XV)
9470 SUBEND
```

This little program demonstrate how to use the subprograms. Yc must, of course merge in all th subprograms mentioned in the lis on line 115.

```
100 ! SAVE DSK1.LITTLETEST
110 DISPLAY AT(08,1)ERASE AL
L:"   This program uses the
       following subprog
rams        available on this
disk."
115 DISPLAY AT(13,1):" SET,
GKEY, PAK, PUT, CLS, XWIPE,
YWIPE, RWIPE, UWIPE, AGAIN,
WAIT, CRAWL, ULINE,
   CHARGE and FANFARE"
120 CALL CHARGE :: CALL PAK
:: CALL CLS(10,13):: CALL CL
S(14,24):: CALL CLS(1,10)
130 FOR T=1 TO 24 :: PRINT "
XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
" :: NEXT T
140 A$=" THIS IS A TEST " ::
CALL PUT(A$,12)
150 CALL WAIT(300)
160 CALL XWIPE(42)
170 FOR T=1 TO 24 :: DISPLAY
AT(T,1):"XXXXXXXXXXXXXXXXXX
XXXXXXXXX" :: NEXT T
180 CALL PUT(A$,12)
190 CALL RWIPE(36):: A$=" TH
AT WAS A TEST " :: CALL CRAW
CALL XWIPE(32)
200 FOR T=1 TO 24 :: DISPLAY
```

Music Subprogram - Cont.

```
     AT(T,1):"XXXXXXXXXXXXXXXXXXX
XXXXXXXXXX" :: NEXT T :: CAL
L UWIPE(32)
210 DISPLAY AT(12,1):"Now Wa
sn't That A Nice Test?" :: C
ALL ULINE(12,1,28):: CALL FA
NFARE
220 CALL AGAIN :: GOTO 120
230 END
240 !
250 ! SUBPROGRAM AREA
260 :
```

```
! REM----saved as SPEAKIME---
10 REM ********************
20 REM *'   SPEAK TO ME    *
30 REM * by Chick De Marti  *
40 REM *  from an idea by   *
50 REM * Sue Harper of the  *
60 REM *   Pittsburg U.G.   *
70 REM * Terminal Emulator  *
80 REM *     is required    *
90 REM ********************
100 CALL CLEAR
110 OPEN #2:"SPEECH",OUTPUT
120 GOSUB 330
130 PRINT "Enter Q and a com
ma to Quit."
140 PRINT "Enter J or M, a c
omma, and":"a message."
150 INPUT " ":N$,MSG$
160 IF N$="Q" THEN 240
170 IF N$="J" THEN 210
180 PRINT #2:"//25 80"
190 PRINT #2:MSG$
200 GOTO 140
210 PRINT #2:"//45 144"
220 PRINT #2:MSG$
230 GOTO 140
240 CALL CLEAR
250 PRINT TAB(12);"THE":TAB(
12);"END"
260 PRINT : : : : : : : :
: :
270 PRINT #2:"//45 144"
280 PRINT #2:"SO ^LONG"
290 PRINT #2:"//25 80"
300 PRINT #2:"BY 4 <NOW!"
310 CLOSE #2
320 END
330 PRINT TAB(5);"TURN CAP=L
OCK ON!!"
340 FOR DELAY=1 TO 600
350 NEXT DELAY
360 CALL CLEAR
370 RETURN
```
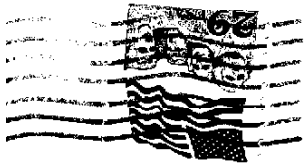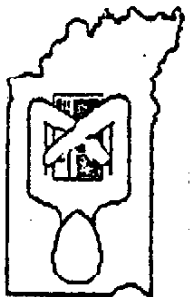
APPLICATION FOR MEMBERSHIP

Below, you will find an application for membership to the Hoosier Users Group. Active membership entitles you to the Newsletter, up and download on the HUGbbs, attendance and voting rights at regular club meetings, access to the HUGger Library of Programs, special club activities and special guest speakers for one year.

Make check or money order payable to Hoosier Users Group. Send completed application to:

HOOSIER USERS GROUP
P.O. Box 2222
Indianapolis, IN 46206-2222

please print   cut on line

Check One:

Active Member
   New: $20 _____
   Renewal: $19 _____
Dues will be due in
May of each year. New
members subtract $1.50
for each month from
May to Oct. New member
minimum $10.00
Amount
Enclosed   _____

_____   D _____
S _____   O _____

NAME _____

TODAY'S
DATE _____

ADDRESS _____ APT # _____

CITY _____ STATE _____ ZIP _____

PHONE (____) _____ - _____

INTERESTS/
COMMENTS _____