C.C.O.G.
COLOR COMPUTER OWNERS GROUP
NEWSLETTER   FEBRUARY 1993

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MEETING MINUTES:

Minutes of Jan. '93 Meeting

Larry Schneider and Chuck Goodwin were both out sick.   One major OS-9 user group is also sick. Seems the officers have resigned enmasse.

Glenside is indeed hosting the "Second Annual 'Last' Chicago CocoFest", to be held May 1&2, 1993 in the city of Elgin, IL.

In fact, I received a form letter from the Glenside President, Tony Podraza, soliciting vendors for the show. Reading between the lines, while this show may be for real, Tony's letter definitely had a pleading tone.

> Site: Holiday Inn, Elgin
> 345 W. River Road
> Elgin, IL
> $10 for 2 days

The select group of 12 members in attendance, got a treat thanks to Robert Pilla. Bob brought in a VCR tape of the latest and greatest in computer graphics found in commercials. The tape was a copy of a PBS special.

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EXPERTS' CORNER by Robert Gault

   We have looked at the local shapes of the waveforms we call
sound, but what about the overall shapes? These macro (vrs micro)
shapes are what we perceive as volume. In music, the envelope is
described from beginning to end as "attack", "sustain", and "decay".
The terms are descriptive but unnecessary.

   The program below will create an envelope shaped sine wave.

```
10 DIM EV(256)
20 HSCREEN1:HCOLOR1,0
30 HPRINT(5,0),"Possible waveform and envelope"
40 FOR I=1TO16:EV(I)=(I-1)*4:HSET(I+31,96-EV(I)):NEXT
50 FOR I=17TO127:EV(I)=64:HSET(I+31,96-64):NEXT
60 FOR I=128TO255:EV(I)=64-INT((I-128)/2):HSET(I+31,96-EV(I)):NEXT
70 RD=32*8*ATN(1)/256
80 HCOLOR3:HLINE(32,96)-(32,96),PSET
90 FORI=1TO256:HLINE-(I+31,96-EV(I)*SIN(RD*I)),PSET:NEXT
100 GOTO100
```

   The concept of an envelope is crucial to our perception of sound
and helps distinguish one musical instrument from another. Some
instruments are essentially all sustain; one long constant level tone
per note: organ, flute, bowed string. Other instruments produce spiky
sounds: drum, cymbal, cowbell, plucked string.   If we are to create
musical sounds by digital methods, ie. a computer, we must incorporate
waveforms and envelopes along with the usual problems of musical
scales. A scale is a term which indicates the relative frequencies and
number of notes in the interval between an exact doubling of frequency.

   There are many different scales not only between cultures but also
in our own culture. Some of them are Just, Mean tone, Pythagorean, and
Equally tempered. The last, promoted by J.S.Bach, is of major
importance as we will see shortly.

The human ear finds certain combinations of frequency pleasing and others extremely distasteful. Perfect thirds (frequency ratio 4:5; note ratio 1:3; ex. C&E), are one of the most pleasing pairs. The problem with western 12 note octaves is that there is no way to divide up the octave so that all combinations of notes produce pleasing patterns. This is not a problem with instruments like lutes which can be retuned for each song played, but of immense trouble for those like harpsichords, pianos, and organs.

The working solution was not to write music in keys which gave the worst dissonances. This was the situation until J.S.Bach (16th century) wrote "Das Wohltemperirte Clavier", 1722. This work used all possible keys and could only be attempted on instruments tuned in equal temperament. This current tuning method was not universal until about 1850.

Equal temperament means that the 12 note octave is divided into equal divisions of 1/12 octave. Put another way, each note will be separated by 2**1/12 or 1.059463094 frequency multiples. In this ET tuning, the frequency ratio of C to E is 1:1.25992105 however this interval (perfect third) should have the ratio 1.25.

Remember that we started our discussion with the concept of a vibrating string. If a string is divided in even intervals, a "perfect" scale can be created: ratios 1:2 - octave, 2:3 - fifth, 3:4 - fourth, 4:5 - major third, etc. There would be two sizes of hole tones 8:9 and 9:10 with half tones being 15:16.

```
¦----¦                     ¦ is an anchor point
¦----¦--------¦            ratio 1:2 octave; pluck each side
¦----¦-----¦               ratio 4:5 major third; pluck each side
¦----¦------¦              ratio 2:3 fifth;      pluck each side
```

The idea of equal temperament is[C to divide the unpleasant dissonances, caused by having notes not tuned as in a "perfect" scale, equally through out the octave. If all intervals are equally "bad" then all keys will be equally "good" and compositions need not be restricted to the natural tuning of an instrument.

While it is very easy to tune a "perfect" scale, it is very very hard to correctly tune an equally tempered scale. That's why good piano tuners are worth their weight in gold.

If you don't have a calculator, the next program will generate the correct frequency intervals of the modern 12 tone scale.
```
10 CLS:DLT=2**(1/12):FREQ=1:' replace ** with up arrow
20 FORI=1TO13
30 PRINTUSING"#.#######"; FREQ:FREQ=FREQ*DLT
40 NEXTI
50 PRINT"Results slightly more accurate":PRINT"if hand calculator used."
```

This then (equal temperament) is our third main criterion after waveform and envelope for creating computer sound.

"Viewpoints" by Gus Korte

Recently I received a telephone call from a man who was interested in attending our CCOG club meeting. He said he had obtained a COCO2 recently and did not know how to use it. I told him about our club and suggested that he should attend a club meeting where he could find out how to use his COCO2. He sounded very enthused about the club. He said he found out about our club through a local Tandy store. He also said he would call me back later for more information. He must be very busy because I have not been contacted by him after that call.

Since I distribute extra copies of our club newsletter to local Tandy Radio Shack stores and the Livonia library, they are aware of our club. Several members have been added to our club through the assistance given to us by these Tandy store managers. Remember their support when you buy your computer books, supplies, etc. Further in this article I list those Radio Shack stores that have given our club support so support them in return when you can.

As time goes on I'm becoming more familiar with the basics of the OS9 system and I find it very interesting. Hopefully some of you other members are getting more acquainted with this system. As Robert Gault and other members have indicated earlier, OS9 is the way to go to maximize the utility of your COCO hobby. I believe you'll find it superior to Radio Shack BASIC DOS. You can set up directories, along with related files within them, in most any order you decide you desire. There is a root directory and all other directories expand from that point like the branches spread out from the trunk of a tree. It's all very logical. There is an edit module which allows you to set up any messages within the OS9 system to suit your needs. I tried editing a "startup" file which displays on the COCO monitor screen when OS9 is started by entering the DOS (Disk Operating System) command. It will display each time OS9 is started until it is changed. You can customize your diskettes under OS9 so that they perform very specialized tasks. We are indeed fortunate that we can learn about this system from other club members. Tim Maule and other members have certainly helped me in getting a better understanding of the OS9 system.

Recently a friend of mine, who owns an ATARI ST computer, asked me about OS9 and how it applies to him. I advised him that the same type of system is called OSK which applies to his computer. There are computer hobby groups I understand that interact even though they use OS9 or OSK. So my friend asked me a question I could not answer. Is there a way that an OS9 program or procedure could be revised, that runs on a COCO, so that it will run on an ATARI ST? There must be some way to do this or the OS9/OSK hobby groups would not exist because of incompatibility. If any of you have an answer to the above question, let me know so I can relay it to my ATARI ST-using friend.

Recently I read of a computer term (new for me) called "vaporware". This is a product that is perpetually promised for tomorrow. However it seems that what was once vaporware is now developed software in the form of "interactive television". An article

in the Detroit News on 1/30/93, page 7D, discusses this subject. The user, through a computer, will be able to directly interact with TV game shows, TV sporting events, etc.
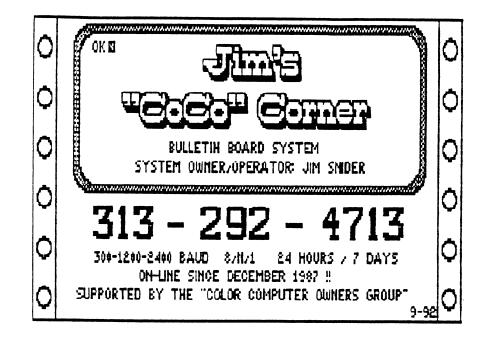
Another article in the Detroit News on 2/2/93, described a headgear that allows one to become involved in "virtual reality". With this device one gets "inside" a 3-D universe which encloses your eyes and ears completely. No matter how you turn, what you see and hear is controlled by the game you're playing. You won't need a TV at all. The indicated cost is around $200.00.

For the information of any new CCOG members, Karl Sefcik's message is repeated here if you wish to subscribe to the Rainbow magazine. You can use a free telephone number to order by credit card. It is 1-800-847-0309. Since some of you do not use the BBS yet, this information is included here for your use. Also the Rainbow magazine is no longer available in local magazine stores.

Once again remember this club has obtained lots of support from the Radio Shack store managers at the stores in Farmington Ctr, 33037 Grand River Ave., Farmington, MI; also at the corner of Five Mile Road and Merriman Road in Livonia, MI; and at 27675 W. Grand River Ave., Livonia, MI. This kind of support is very helpful to our CCOG club. Therefore support those stores when possible if you have any purchases to make from Radio Shack so they know the CCOG club appreciates this good will. Indicate you are with the CCOG club when you go there and I know they will appreciate your business.

A reminder especially for new members of the CCOG, the VFW uses your money donations from our club in it's many charitable activities especially concerning unfortunate hospitalized veterans. It's all going for a good cause. The Livonia VFW also collects used books and magazines to give hospitalized veterans. So if any of you want to contribute such, which you would otherwise discard, give them to the VFW bartender to make some unfortunate veterans happy. Those of you who have contributed this way in the past can be sure that your contribution is appreciated. Remember the bartender is on the first floor and serves both the bingo players there and the CCOG in the Foxhole Lounge. The VFW wants us to supervise ourselves and to leave the room clean when we depart which is certainly a reasonable request.

Also for the information of any new members, please note the following parking requirement now in effect from the VFW Post 3941 in Livonia, MI where we hold our CCOG meetings. Because of a shortage of automobile parking space on the east side of the building (facing the Foxhole Lounge) used by those attending bingo and other similar large public events at the VFW Post 3941, parking spaces and lighting have been added at the rear and on the west side of the VFW hall for members and their guests. You are therefore requested to use those added parking spaces instead of the parking spaces used by the bingo players during our meeting night. Again do NOT park in the area reserved for the bingo players.

COLOR COMPUTER OWNERS GROUP
of Metropolitan Detroit

Meetings the fourth tuesday of each month
help at VFW Post 3941
Seven Mile road just east of Middlebelt.
Meetings start at 7:00 PM in the FOXHOLE
use the side door off the parking lot.

1993 MEETINGS

January 26	July 27
February 23	August 24
March 23	September 28
April 27	October 26
May 25	November 23
June 22	December 28