

# CREATING COMPUTER MUSIC

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Some time ago, I wrote to a friend of mine who has a small business selling records. I suggested to him that he could make good use of a word processing system like mine to keep up-to-date lists of all his albums. He wrote back, saying "Thanks for the suggestion, but I already have a 'word processor'. It's called a 'typewriter' and it cost me \$150."

My friend's response is not unlike my own attitude to creating music with your computer, which is: "Why bother?" Most people who can afford a computer with all the attendant peripheral hardware probably already have a musical instrument of some kind, like a piano or guitar.

Although the Commodore 64 is highly touted as a musical instrument, especially in its TV commercials, creating music with it is not an easy task. One of the main impediments is the fact that the Music Note Value tables in the *64 User's Guide* (Appendix M, pp. 152-4) and *Programmer's Reference Guide* (Appendix E, pp. 384-387) are completely different! No one has yet been able to explain to me why this is so. (The *User's Guide* values seem to work better, by the way.)

There are basically three kinds of music which can be created on your computer: pieces by other composers which you arrange, pieces of your own and music which the computer makes up.

The first variety, arrangements of other composers' music, is a novelty which wears out very fast. When I bought a VIC 20 a couple of years back, one of the first things I got for it was a music composing program. I used it to arrange a few pieces until I realized that there was little point to what I was doing, other than demonstrating my computer's "amazing" abilities. The fact that only three voices were available imposed severe limits, though I did make a transcription of the first twenty bars or so of Stravinsky's *Rite of Spring*, just to prove it was possible.

As far as the C-64 goes, there are some impressive public domain programs, such as Pachelbel's Canon and Bach's "Little" Fugue, showing what the C-64 is capable of doing musically — each of which are over 25,000 bytes long! Such creation is a job for the truly dedicated — or the truly masochistic. There are also a wide variety of commercial C-64 programs designed to make music entry an easy task, which show that some people have a peculiar idea of what "easy" means.

The ideal facility to help in this regard would be some kind of keyboard on which you could play or compose music and have it immediately stored in the computer. This is similar to a device used around the turn of the century, a sort of Player piano in reverse. Famous composers played their pieces on this gizmo, which punched out not only the notes but dynamics onto a paper roll that could then be played back, reproducing the composer's intentions exactly. Unfortunately, the computer equivalent of this and the necessary interfaces would probably be so expensive that it would be cheaper to buy something like a Moog synthesizer intended specifically for this purpose.

Creating your own music on the computer, my second variety, has a pretty limited audience, though it should be pointed out in this diatribe that the *educational*, as opposed to artistic, field of computer music creation is one area where a great deal of potential does exist.

My third category, where the computer makes its own music, you might say is an anomaly, since the computer can't create music any more than it can serve you breakfast in bed. It has to be *programmed* to do something. Most attempts in this area fall into the category of random music. This usually sounds like "stereotyped 20th century electronic music", a fancy way of saying "garbage".

There is one area here I'm surprised no one I know of has investigated. This is twelve-tone music, first popularized by Arnold Schoenberg, who lived from 1874 to 1951. Schoenberg's system was based on the fact that in each musical octave (say, between one note A and the next A above) there are twelve unique tones. These notes can be arranged in any order, which then form a "row". This row is then inverted, so that if the distance between the first two notes is originally three notes up, in the inversion the second note will be three notes down from the first, and so forth. Both the basic row and inversion can be read forwards and backwards, making a total of four rows.

This would seem to be ideal "computer music", for the computer could not only choose the basic material for the piece, but choose all the other parameters like tempo, volume, duration of rests, and so forth. Unfortunately, one attempt I made in this direction sounded like the "typical 20th century music" mentioned above. (A copy of this VIC 20 program, called **TWELVE-TONE MUSIC** has been submitted to the TPUG library.)

In their time, Schoenberg's own creations earned a great deal of abuse for what people considered their ugly, mechanical sounds and are still unpopular today, some sixty years later. Only certain of his contemporaries were able to organize their twelve-tone material so that it sounded more like music.

In other words, the human touch is something which music can't do without. *TPUG*

