Electronic Instruments for the Musician

R-A-MOOG CO-

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November 25, 1964

Professor Otto W. Henry
Chairman, Dept. of Music
Washington and Jefferson College
Washington, Pennsylvania

Dear Professor Henry:

Thanks very much for your long letter in which you outline your equipment needs. Let me comment upon your requirements in the order in which you presented them.

(1) An oscillator bank: We do not have one to spare but will probably have a laboratory model by the end of the year. I'll be sure to send you one as soon as it is available.

(2) A bandpass filter: Same comments as above.

(3) A time compression machine: Such a machine presents very difficult design problems, and we will probably not attempt to build any of these in the foreseeable future. Some composers feel it is a worthwhile addition, while others so not see only limited application. As you say, you'll have to try one out for yourself to see if it will be useful to you.

(4) A speed control device: This is a simple design problem, but I can't promise when we will design and build one. It will definitely be before the summer, however.

(5) A frequency divider: A frequency divider can be built to halve the frequency of any audio note. I hope you understand the limitations of such a device. First, the input must be monophonic, i.e., a frequency divider can only operate on one tone rather than a chord. Second, the timbre of the output of the divider will bear no relation to the timbre of the input. The output of a frequency divider is a square wave which can be further operated upon to make either sawtooth waves or triangular waves. The frequency multiplier has similar restrictions. Even with these restrictions, they are useful in electronic music composition. We have no plans to design such a divider or multiplier, but I may get a chance to throw one together for evaluation next year.

(6) "Or" gates: In computer technology, an "or" gate is a device which is on when any one of the inputs is on, and is off when none of the inputs is on. It would have limited usefulness in elctronics music composition, I believe, because there are no intermediate states between "completely on" or "completely off". Of more usefulness is an"amplitude follower" which controls a variable gain amplifier so that its gain follows the amplitude of the controlling signal. This is something we are working on right now for Professor Ussachevsky of Columbia University, and I might be able to send you our prototype very shortly.

(7) A sound-into-light device: This is a straightforward but large-scale design project. We have little interest in it at the present time, because it is not directly related to the composition of electronic music. In fact, we are working toward the goal of producing equipment which can be played in real time, and will thus allow live performance of electronic music. This alone would give the audience "something to look at".

(8) A rythmic instrument: This is also on our design program, but will probably not be worked on for another six months.

(9) A light-sensitive volume control: I was not impressed with Dr. Schaeffer's "Hamograph". I think the same thing could be accomplished with a rythmic instrument in combination with an envelope generator (bell gate) of sophisticated design. I hope to develop this idea next year.

That's our situation now; lots of promises, but nothing immediate for you to try. I should have an oscillator bank for you in a couple of months, however.

Thanks also for your suggestions regarding the proposed seminar. I am delighted to know that you are interested in participating. Please tell me when you will be able to participate next summer. I anticipate a total duration of about four weeks, during which time I would conduct a session on basic musical electronics, and one or two practicing electronic music composers will instruct in the esthetics of electronic music composition, and in studio technique. I anticipate further to have two or three studio setups available by that time.

Thanks again for your interest. Please let me know at your convenience, if you will be able to take four weeks during the summer to participate in a seminar here. Also, I would appreciate receiving tapes of some of your compositions.

Sincerely yours,

Robert A. Moog

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