Norlin Music, Inc.

INTRA-COMPANY MEMORANDUM

DATE APRIL 3, 1976

TO ED SOKOLOFSKI   FROM   TOM RHEA

SUBJECT   NEW MODELS-MOOG

Dear Ed:

This memo is a preliminary recommendation on new monophonic Moog instrument models, as per your request of March 31, 1976.

The recommendations below are based on the constraints set forth in your memo: (1) musically meaningful; (2) new model capable of generating sales of 100 units/month; (3) uses Micromoog technology, specifically the PC board as presently configured; (4) requires minimal engineering/tooling (as I understand it).

First of all, let's start with some legitimate (Micromoog) complaints from the musician: (1) the present keyboard of 32 notes is too short; this has been documented through numberous contacts with musicians. Even those who purchase the unit make the complaint. (2) the Micro lakks the "ambience" or liveness of sound of the Minimoog; this is undoubtedly due to the fact that the Micro is not a multi-oscillator instrument. (3) many people refuse to buy the concept of playing a synthesizer with two hands; they want a more expressive instrument that can be played with only one hand for lead lines.

Now let's consider another "complaint" that has been promulgated by the competition. The Micromoog has what is known as "single" triggering; this is, a new trigger (and resulting contour of sound) is generated only when previously depressed key(s) are released and a new key is struck. This makes the performer have to "lift" the fingers, or play with "high stepping" non-legato technique. The competition, specifically the ARP Odyssey has "multiple" triggering; that is, there is additional circuitry that senses when a new key has been depressed, and a trigger is generated regardless of whether the old key is released or not. "Multiple" triggering makes the keyboard "easier" to play when deep contours are being used, or when very short notes are being played. It also, unfortunately makes the synthesizer's keyboard respond more like an organ (not responsive to differentiation of legato and non-legato technique). "Single" triggering, on the other hand, allows the performer to determine when a new trigger will be generated, making for a more musical and horn-like, or soloistic performance. I am not recommending that Moog Music depart from its traditional and useful use of "single" triggering. I recommend that we give the performer

the option of selecting which triggering priority he would prefer. At present, only the ARP 2500 offers this feature, which has both musical and marketing merit.

The recommendations that I will make in this memo are largely due to complaints heard regarding our present Micromoog, influenced by my own musical judgment. Often, complaints are unreasonable from a technical, musical, or cost basis. But it is surprising how the synthesizer-playing population has become more astute in their requests for features compared to a few years ago.

RECOMMENDATIONS:

MODEL: "PRO" MICROMOOG

A slightly expanded version of the Micro using the exact same (or very nearly the same) PC board now in use:

1. Use of keyboard of 44 notes (3.5 octaves). This keyboard should begin on "C" as low note, and this C should represent the "zero volt" level. I am aware that this will create some problems when interfacing the PRO MICRO with the MICRO, but I believe that I can justify this change, especially from the musical standpoint.

2. Addition of an "animation" oscillator that would be permanently connected to the WAVESHAPE voltage control input to achieve "dynamic waveforms" without tying up the MODULATION section, as is currently the case. I feel that this is our best bet to prevent wholesale changes which will be time consuming and will mess up the flow and sense of the present front panel. The "Animation" feature requires a control for RATE (suggest .1 to 20 Hz approximate range) and AMOUNT, both variable. This should add to overall sound quality of the instrument.

3. Addition of a pressure sensitive "touch response" feature that would enhance musicality when the instrument is played with one hand only. Since we are developing that feature for the Minitmoog it makes sense to consider its inclusion on this proposed model of PRO MICRO. The "touch response" should be capable of (1) bending pitch (2) changing cutoff frequency of the filter (3)altering WAVESHAPE

(4) introducing and controlling the amount of modulation. Whether these capabilities should be mutually exclusive or additive, I am uncertain, and would like to entertain discussion with the people at Moog concerning feasibility, etc.

4. Addition of selector which gives either "single" or "double" triggering modes. The "normal" position (left or down) should be "single" mode. This should be no problem, since our Satellite has "multiple" triggering already. Since both modes have musical utility and it has become a marketing point--it seems useful.

5. Addition of an output jack and associated attenuator on rear panel for the PITCH ribbon. Nothing could be more unique about the Micromoog that its PITCH ribbon. We neglected to give its output access to the outside world in our "Open System." At present the only oscillator that can be bent is the one in the Micro; external oscillators cannot be influenced by the PITCH ribbon at present.

6. Addition of an input jack on the rear panel that would be a control input for oscillator waveshape. WAVESHAPE can be set with a pedal in this case.

7. COSMETICS: The PRO MICROMOOG should be easily distinguished from the Micromoog. I don't have any monster ideas here, but I feel it's important that there be no confusion between models.

MODEL: STEREO MICROMOOG

Some consideration should be given to the concept of using two Micromoog boards with a single keyboard, or a dual keyboard in one cabinet. The resulting fatness of sound with two oscillators, the added animation feature, and DOUBLING would be great. Also, one board could be providing sample and hold while the other is played from the keyboard. The only stereo synthesizer currently on the market is the MaxiKorg which has had reasonable acceptance. Obviously, it would be possible to have a true two-voice synthesizer also, since dual channels would be available, unlike the current two-note synthesizers on the market that run both

notes through the same filter and amplifier. This is only a recommendation that discussion whould take place concerning a stereo or true two voice synthesizer; under the constraints laid down for this memo this seems like an area for exploration.

I believe that we shoudd pursue an approach that will lead us to the "voice" concept that Tom Oberheim has opted for. Surely we know enough about monophonic synthesizers to define a voice, a modulation package, memory function for each, etc. I feel it is most important that Norlin Music review previous memos by Bob Moob and Jim Scott which discuss this concept. I have a few ideas to add to what they have recommended, but these discussions are out of the realm of this immediate memo.

In summary, I think that if we are going to try to "spin off" models from the Micromoog, we had better take the most simplistic approach. If we want another model which is inherehtly different, we'd better start from scratch. "Silk purse from sow's ear syndrome" acan be deadly (not that the Micro is a sow's ear!) This memo has outlined features that can be added to our present Micromoog; it is a conservative approach--asnintended.

I applaud any efforts to rethink the monophonic synthesizer line; "poly" will not replace "solo". Perhaps we should be more cognizant of the comments that are being made in magazines such as Downbeat and Contemporary Keyboard by famous keyboard artists, endorsing the idea of solo voice synthesizers and rethink the priority of developing <u>three</u> polyphonic synthesizers before our attention is turned to the solo synthesizer line.

I remain, the Irish wildman and synthesizer guru,

Thomas L. Rhea, Consultant
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