

Sound on Sound, March 2002 (excerpt)

Moog Sonic 6 (sic) Analogue Synthesizer (Retrozone)

By Gordon Reid:

As I wrote in this column a few months ago, the Crumar Spirit was co-designed by Jim Scott (one of the co-designers of the Minimoo), Tom Rhea (another Moog employee best known for writing many of Moog's synthesizer manuals), and Bob Moog himself. But if you stick the Spirit next to a Sonic V or Sonic 6 you'll start to notice some remarkable similarities. Take, for example, the Sonic V's (and therefore the Sonic 6's) Waveform Gen X and Waveform Gen Y low-frequency oscillators, and compare these to the Spirit's Mod X and Shaper Y. The Spirit is more advanced, and given that it appeared 13 years after the Sonic V, that's not surprising. Nonetheless, there are enough similarities between the two to raise an eyebrow or three.

Tom Rhea:

“An eyebrow or three . . .?” This is hilarious! I teethered on a Moog 900 Series Modular 3C, which had 10 VCOs that could be used as “LFOs.” There were no designated “LFOs” on the Moog 900 Series Modular Systems when they were introduced:



All of those VCOs could be tuned well below the audio range. I spent many hours listening to what 4-5-6-7 VCO square waves running at sub audio rates would create—when summed to control the frequency

of a single VCO in the audio range. Almost a poor man's sequencer. Fascinating rhythms, too! I didn't need to look at or hear the Moog (or muSonics) Sonic Six to have ideas about the capabilities of providing more than a paltry single low frequency modulation oscillator! In fact, I had never even *seen* a Sonic Six when I had those experiences with the Moog 3C in graduate school.

So, it is undoubtedly more likely that I "modeled" the architecture and many of the features of the Crumar Spirit on the more-capable Moog Modular 3C, rather than the Sonic Six. Also, many of the various enveloping features on the Crumar Spirit came about as a result of several discussions I had with Tom Oberheim—and many of those features appear in his Oberheim Xpander due to our mutual insights.

The quite novel "latest note" keying priority of the Spirit's keyboard came about because of my frustrations with the simple (and stupid) versions that were extant prior to the Spirit. Jim Scott and I had many conversations on how a really effective last note keying priority had to work! And the Spirit's remains the best I know, even at this date (2023).

Finally, the Spirit was "more advanced" not because it ". . . appeared 13 years after the Sonic V," but because the *design team* was "more advanced." I was more advanced as that "principal architect" of the Spirit's functions, layout, and nomenclature—which Jim Scott credits elsewhere. The entire Crumar Spirit development team: Bob Moog, Jim Scott, and I might very well be considered quite "advanced!"

Gordon Reid:

Likewise, consider the dual signal paths in both synths, which allow you to mix the filtered and articulated signal with the unaffected outputs from oscillators A and B, and the Ring Modulator. And how about all three synths' ability to disconnect oscillator B from the keyboard CV, thus making it possible to use it as a drone or as a static FM carrier? These similarities are non-trivial, and are of an obscure enough nature to suggest that there is a direct line of descent from the Sonic V to the Crumar Spirit. Of course, Zumcheck got no credit for the Spirit, and this seems to be, at best, an oversight. I reckon that synthesizer aficionados have a lot to thank him for.

Tom Rhea:

I accomplished all of the “non-trivial and . . . obscure” techniques listed in the paragraph above on the Moog 3C without even a thought of a Sonic V or Sonic Six. Yup, *many* more than two independent signal paths, droning oscillators, static FM carriers and so forth. All of that and much more. In fact, if you know what you’re doing using a Moog 3C you can patch together a very effective ring modulator using two of its Model 902 VCAs!

So, there is not even remotely any “direct line of descent from the Sonic V to the Crumar Spirit.” And there certainly is no “oversight” on anybody’s part regarding this. Reid’s supposed “direct line of descent” is like imagining that “lightning” and “lightning bug” have a lot in common. But I must counsel that one might charm you, but the other would definitely harm you!

If you really wanted to credit Gene Zumchak for something he actually designed, that would be the Moog Model 960 Sequencer module, possibly among others.

It is so unfortunate that some of those with a “microphone” use it to disseminate guesses masquerading as journalism, complete fabrications, and just plain made-up nonsense. In this case, the issues that Jim Scott and I raise are not matters of “opinion,” but ones of *easily verifiable* facts. Is it really too much to ask that you might contact *those who were there*, who might provide accurate facts, and possibly just a bit of perspective? Yeah, you were “under a deadline” to publish. Everybody in the biz understands that. OK. Just don’t make stuff up! Posterity deserves better.

Sorry Mr. Reid, this article was not up to your usual high standards. You are usually highly reliable when sticking to discussing the features of instruments—often perceptive. But you should’ve stuck to acknowledging your comment near the beginning of the complete article that all of this happened when you were in “short trousers,”* and not taken all of those shots in the dark!

(*I intend to address all such comments and the complete article in *Sound on Sound* about the development of the Sonic Six—with its asides about development of the Minimoog, elsewhere on this web site.)