Page 37 - Otis Tomas: Making Instruments & Tunes
ISSUE : Issue 56
Published by Ronald Caplan on 1991/1/1

Just as the artists and architects of the Renaissance were very much into a mathe? matical form, within their works of art. The science of perspective was coming out. And it was the beginnings of scientific revolution where people were really dis? covering that they could describe nature in these ways. Today, we sort of think that when science describes things mathe? matically, that's taking away from the beauty of the world. But at that time it was just the opposite: it just added to it. If you read people like Kepler, New? ton, Descartes--people that were mathema? ticians and scientists in these early days--the mathematical side of nature, the fact that there was this wonderful order, rational order in the world--that just gave the beauty of the world a much deeper dimension. And I think we've really lost a lot of that.... (But if I understand you correctly--when it comes to making these instruments, you've started from a mathematic princi? ple.) Well, no, that's not true. I start? ed from the instrument--the idea that I had for the instrument. And from there, I added to it. I brought the parts slowly into proportion. In fact, I made instru? ments similar to this--quite similar-- before I ever had the idea of these types of proportions. But once I started learn? ing more about these ideas and this con? cept, I kind of worked that into my de? sign. So it's a combination.... In a sense, I'm adapting the system or the concept that I was working with--I'm adapting that to my creative vision. I'm not adapting my creative vision so much to the fact that one plus one equals two. I'm taking the nature of number and the rela? tions of mathematics, and I'm adapting that to my creative vision, my idea of what I'm trying to do. (Because one of the final things is-- the appear-! ance has to I be harmoni-l ous, has to I be appeal? ing in that I way. And then, the other is, it has to work as a musical instrument.) Right. Which is anoth? er idea in here--to take it from the purely acoustical side.... The size and shape of the body, how does this affect the instru? ment? The way I envision this, we're set? ting up a system of vibrations within the instrument--what we've designed as the shape of the air chamber, the resonating chamber inside.... We have waves going back and forth and echoing around inside, from side to side or from one end to the other. The shape of the body determines where those waves can vibrate and resonate.... The same way, you know, where our sound- hole is located. We look at the wave? lengths that could exist between the soundhole and the various extremities of the instrument. These are the different resonances of the body. So in a way, you know, this is tuning the instrument itself to the harmonies of musical intervals. The structure of a musical tone, as well, fol? lows the same simple relationships we were talking about. Scientifically and acousti? cally, the way musical tone is analyzed: it's a series of overtones which are in the same basic relationship as the conso? nant notes of a musical scale that we were talking about before. Boutiliers* l/lusic Shops "We're people you can talk to" Dealers for Quality Brand Name Pianos • Guitars • Electronic Keyboards • Dutch Church Organs 'We sell a complete line of top quality musical Instruments and accesso-' ries. Visit our showroom and try the products for yourself. You will like 'the variety and price. Layaway plan available. No

interest for 2 months. J Music Keyboards Guitars Strings Horns Violins Bagpipes Chanters Amplifiers PA Systems All Supplies - We're Open Monday through Saturday ~ Cape Breton Shopping Centre 39 Keltic Drive Sydney River, N. S. B1S1P4 - 562-0018 Cape Breton's Finest Locally-Owned Musical Outlet PA Rentals Piano & Guitar Instruction What happens in every musi? cal tone, every tone that we hear--it's a product of a series--it's not just one fundamental vibration. There's a series of over? tones with it. A string vi? brating first as a whole, giving your fundamental note. But at the same time there's a slight ripple in that vibration at the mid? point. So it's vibrating in part in halves, giving you an octave. And in part in thirds. All multiples of your original vibration, which is giving you an overtone series. Now, the combination and strengths of which overtones are more emphasized, which ones come in stronger than others, are what gives dif-