

EarthSound **Pluckers**. Made by Ragnar Naess in EarthSound Collaboration.

How thick should walls be? What do hollow bodies with tubular necks give us? How can we make a long tube that will be blown and give a dark, deep sound but survive rehearsals and performances without being broken? Can we put a fragile hollow clay body on a long solid clay neck and put it under the tension of strings as in more traditional stringed instruments?

What effect has glaze on the sound of clay objects? What will clay sound like when used to amplify the sound of metal, wood, gut, plastic strings? What is its sound when struck by objects made of these materials?

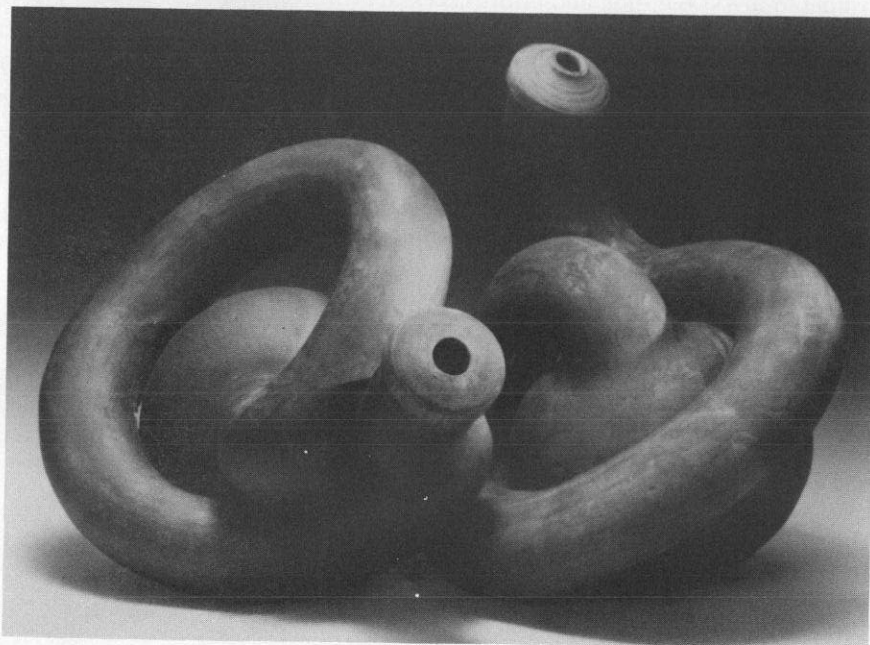
I limited myself to the use of my one studio clay formula. It is a stoneware clay, but I draw from it a sound closer to the brighter tone of porcelain. This sound character, which we pursue in **EarthSounds**, is enhanced by the tight, dense, highly fused fired state of my clay. I believe sound characteristics are influenced by the homogeneity of the melt of the ingredients of the clay, or what we call clay's maturity. Maturity is a measure of tightness and shrinkage achieved in firing. A mature fired clay will not shrink much further if heated to higher temperatures in the firing; ingredients that will melt and combine have done so and anything to be burned away is gone. The unmelted ingredients, aluminum silicate particles, are suspended in a glass "glue" within a lattice of long interlocking mullite crystals which contribute strength and resilience to the fired

object. Before it is fired, my clay grog is finely divided, unlike the fairly large chunks of grog often used in stoneware clays. My clay also has rather a lot of iron oxide and calcium in it which act as fluxes, further improving the melt. If this clay formula had larger chunks of refractory ingredients, they would create discontinuities of harder, separate mineral areas within the crystal lattice which I believe would blur the vibrations which determine the sounds clay objects make. (Refractoriness is a measure of how hot something can get before it melts, and a flux is defined as a chemical which lowers the melting point of a mineral.)

We noted that sound is affected much as is light by the type of finish on the clay. Matte glazes which gain their soft appearance by absorbing light in multitudes of tiny holes in the surface also soften and dull sound just the way they soften reflected light. Glossy glazes which are quite fused and not thick created the best sounds.

Thin clay walls under the bridges of the stringed instruments and in the resonating jars enhanced sound quality and volume. Struck objects from which we wanted resonance amplified by trapped air were better

struck on relatively small surface area rather than broad flat surfaces. Sounds produced by resonating and vibrating from within rather than from sharp abrupt smacking impacts on the surface were enhanced this way. We also used soft foam rubber paddles to mitigate the impact of striker on ceramic in these resonating jars. The jars are played open, using no skin



EarthSound **Cowguts**. Made by Ragnar Naess in EarthSound Collaboration.  
Photo by Ragnar Naess