

## The frog in a machine

program notes

*As long as the frog does not turn into a prince I can play  
with the frog. If it turns into a prince I may play with the prince, too.  
But I don't know which one is better.*

In the last few years the composer has been cultivating four frogs in a machine. The present frog is called an experimental frog. *The frog in a machine* is a study of enharmonic changes with the Chua's circuit. The series of experiments and documentations were aimed at achieving enharmonic shifts from one phase trajectory to another in the system. The method set for the experiments often presented stressful engagements. These engagements appeared when walking along monodic sequences, facing the walls of chaos, and frolicking in the unwanted intermittent regions.

One of the compositional tasks was to unstress them without changing the face of the frog. When they were allowed fully played out within the boundary conditions that are specified, they disarmed the description of what was wanted and not wanted. In this study the method for enharmonic changes does not often coincide with the perception of the enharmonicity. Shamelessly this problem is left unresolved. The problem is to compose the tonalities that are particular to the experimental systems.

This work involves a chaotic circuit and its simulation in a real-time interactive software sound-synthesis environment. The Chua's circuit is an experimental and numerical paradigm for conducting research with chaotic systems. It was devised by Prof. Leon Chua, U.C. Berkeley, as the simplest class of electronic circuit able to exhibit chaotic behavior. Sound was synthesized both in circuit hardware and in a computational simulation installed as a plug-in to VSS, an interactive Sound Server software environment developed at the National Center for Supercomputing Applications. The composition was computed and mixed in real-time using parallel synthesis processes in c++, distributed and synchronized across a number of Silicon Graphics workstations.