NODALINGS

for any number of performers

with simple electronics

Choose any bounded space, such as: a culvert, a stormdrain, a bathtub, a barrel, a trunk, a boiler, a subway car, a hallway, a cave, a table, a wall, a floor, a ceiling, a window, a door, a body, a bottle, a trombone, a taut string, a drumhead, a mouth, a rock, a tree, a glacier, a puddle, a pond, a dock, a canoe, a balloon.

Select an appropriate input transducer: an air microphone for an air space; a contact microphone or phono cartridge for a planar surface or a solid object; a hydrophone for a body of water. Connect it through a preamplifier and a compressor or limiter to a power amplifier and a suitable output driver: an ordinary loudspeaker for an air space or any surface that couples well to the air; a Rollen Star Driver or the equivalent for any other surface or solid object; a Poly-Planar speaker, a Star Driver, or any other practical device under water.

Place the microphone and driver in or on the space. Raise the gain of the preamp and power amp until feedback occurs. Balance the controls of the compressor/limiter and the amplifiers so that the feedback is free of any distortion.

The nodes and antinodes of the standing waves of all the possible resonant frequencies of a bounded space combine to form a complex sonic "topography." This topography

defines the favored frequencies of vibration for every point in the space. Feedback between a driver and microphone will occur at one of the frequencies favored at the location of the microphone.

Explore the resonant topography of the space that you have chosen. Move the microphone slowly and carefully through or along the space. Trace lines consisting of points of equal pitch. Find points that will sustain two or more frequencies of feedback simultaneously, regions that are dominated by a limited range of pitches, and axes of symmetry within the topography.

The feedback should be tuned just above threshold level so that it remains "sensitive." In this state it can be influenced by environmental sounds, can be silenced by "soft spots" in the space, and in general, is more responsive to the fine detail of the topography.

Avoid intentionally producing any noise other than the feedback -- if the movement of a contact mic along a surface produces a noticeable scraping sound, lift it to move it; raise and replace it as quietly as possible. Perform no actions that are not directly related to the task of articulating the topography of the space. Disturb the performance environment as little as possible.

You may use two or more microphones and/or drivers in one space. Map the relative "heights" of several points: find a way to silence individual microphones

(on/off switch, raising contact mic from surface, etc.); resonate each point singly and then in all possible pairs, trios, quartets, etc.; observe which pitch dominates in each group or what related pitch is generated when two or more points are of similar strength.

Perform simultaneously in several spaces -- concentric ones (a bucket on a table against a wall in a room of a house on a rock in a lake) and/or adjacent ones (a row of culverts, a network of storm drains, all the walls and floors of a wooden house, a lunchroom full of tables, a string of tidal basins). Explore the influence of the leakage of sound across interfaces between spaces.

Return to the same space on several occasions to observe the effects of time and weather on the topography.

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