

4 - performer version

Performer 1 plays the part marked "sound source #1"

Performer 2 plays the part marked "sound source #2"

Performers 3 and 4 play the part marked "output control", 3 handling the oscillator, 4 handling preamplifier volume and tone controls.

A stopwatch is required for each performer (3 and 4 may share a watch).

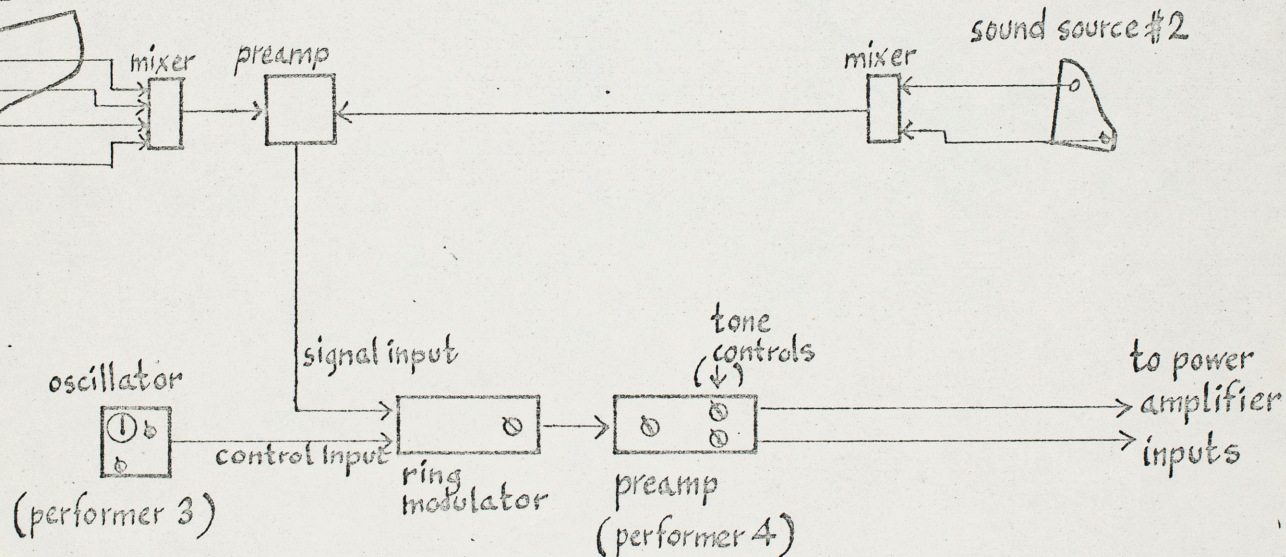
Several instrumental realizations of sound sources #1 and #2 are provided, which may be used in any combination. Use electric guitars and/or zithers rather than pianos if available.

Equipment required for performers 3 and 4: a sine-square wave oscillator with a frequency range of 2 cps to 20,000 cps, a ring modulator, and a preamplifier with separate bass and treble tone controls.

Also required: additional preamplifier between microphones and signal input of modulator, mixers, and microphones, as shown in diagram. Guitar or contact microphones should be used to amplify the sounds of instruments used as sound sources #1 and #2. For piano, at least four microphones should be distributed throughout the bass-treble range of instrument, each one resting directly on strings but not attached, so that it is free to vibrate. Two or more microphones, if available, should be used to amplify the sounds of each guitar or zither.

Sound source #1

sound source #2



To be arranged before performance:

There must be enough gain available after the ring modulator so that sound can be maintained indefinitely by performer 4 after the attacks by performers 1 and 2 have died out. (The strings of instruments used as sound sources should resonate in response to the loudspeakers, so that their microphones will continue to feed an audio signal into the modulator during the intervals between attacks). The modulator should if possible have an internal preamplifier, with volume control,

at its output, which in turn can be fed into a high level input of the external preamplifier. (Otherwise, modulator should be fed into a low level input of external preamp).

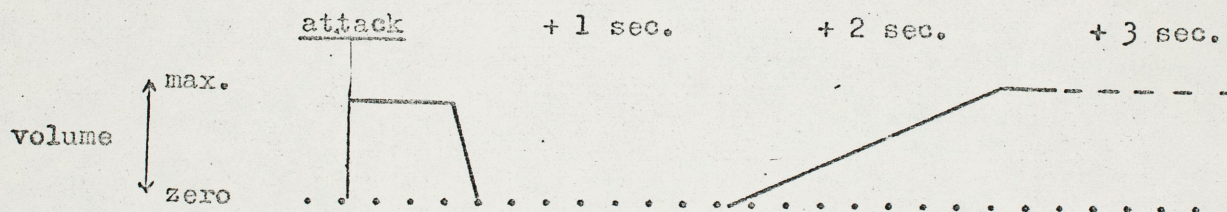
The amplitude control setting of the oscillator should be adjusted before performance for optimum effect on modulator (maximum output with minimum leakage); it should not be necessary to change it during performance.

To perform:

To begin, the four performers meet in order to start their stopwatches together. During the first minute, performers 1 and 2 return to their instruments and performer 4 very slowly opens his preamplifier volume control. A very slowly growing soft sound (made up of microphone feedback and leakage of the control signal through the modulator) should come from the speakers during the 30 seconds before the first attack at 1:00. Thereafter, the attacks themselves (at stopwatch intervals marked) should create an extremely loud speaker sound. Enough speakers and amplification should be used to fill the room with sound. Note (in diagram) that the sound system is monophonic.

All performers: make all attacks and switch position changes as precisely as possible with regard to stopwatch time.

Note to performer 4: once or twice during performance, especially after louder attacks, quickly reduce sound level to zero (must be within one second after any attack) and immediately restore it (somewhat more slowly) to usual high post-attack level (within two and a half seconds after the attack):



These should be the only silences in the piece: don't permit sound to die out gradually when longer intervals follow attacks. Keep volume moderate to full by raising volume control(s) when necessary to maintain the feedback-leakage equilibrium described above.