

WOUND ROOM

Jim Bumgardner 1982

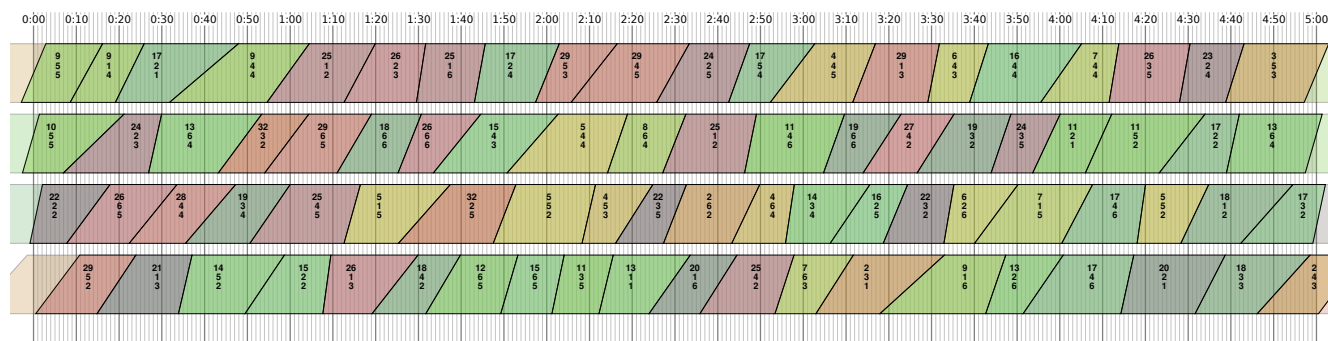
The following instructions are a recreation, as accurately as I can recall, of the method I used to produce the piece *Wound Room* (1982), presented as an installation piece in the Roy O. Disney Hall, at the 1982, and 1983 Electro-Acoustic Music Marathons at CalArts. The title is pronounced to rhyme with “Round Room” as in the room is wound like a clock. All the original materials (score and recordings) were lost in a fire in 1987.

The piece was presented as an installation piece. The music was played back from a very large tape loop that takes 4-5 minutes to play before repeating. It is likely that the piece increased in length by several seconds during exhibition as a result of tape stretching. New tapes would need to be recorded from the master for subsequent performances, if possible. The tape loop ran along the circumference of the recital hall in which the piece played, the Roy O. Disney (ROD) Hall at CalArts.



The original loop was suspended by reels on mic-stands, mostly about 4 feet from the ground, and was raised well above the entrance doors so that people could enter and exit without trouble. The room was emptied of chairs, except for a single upholstered chair in the middle of the room to provide an ideal listening position. A continuous repeating slideshow played from a carousel projector, showed a sequence of snapshots of an artists interpretation of the score.

The original score of the piece was prepared as a chart on two or three sheets of graph paper showing 4 tracks. Here is a recreation of it, using the script `construct_score_svg.py`, which can produce this score and usable script for constructing a version of this piece. Within each track, a series of sound clip are represented as trapezoids, each of which contains 3 numbers in the range (1-32, 1-6, 1-6), indicating sound-choice, playback-speed, processing-effect (see below). The leading and trailing edges of the trapezoids indicate cross-fade times.



These 4 tracks were originally mixed down to stereo (two tracks apiece) for the final ¼” tape loop, although a quad loop could also be used. The content of each sound-clip comes from a set of short tape loops. The content of the score, including sound lengths, fade-times, sound-source, relative playback-speed of source sound, and post-processing effects were all determined by random numbers.

The random numbers (R in the below formula) came from a table of random numbers, each number being a value from 1-64, selected using a simulation of the “Yarrow Stalk Oracle”, as described on pages 721-723 of *The I Ching*, Wilhelm/Baynes, Third Edition, Bollinger Foundation, Princeton University Press 1980 printing. The original software was prepared in BASIC on a Timex Sinclair 1000 computer, and is now lost. However, there are numerous similar algorithms available, including a probability table in Wikipedia. I have provided a routine here.

https://en.wikipedia.org/wiki/I_Ching_divination#Yarrow_stalks

When a number in the range A to B is desired, the formula used was $A + (B-A)*R/64$. For time values, floating point numbers are used, and for the three parameters, integer rounding is performed.

Within each track each successive sound is specified as follows:

Length of Playback (5-20)

This ranged from about 5 seconds to 20 seconds.

Length of Crossfade (20-100%)

The maximum length of any crossfade was the smaller of the lengths of the two clips being cross-faded. Fade times range from 10% to 100% of this length.

The previous two numbers determine the length and the trailing taper of the quadrilateral. The leading taper is determined by the fade-out from the previous sound, and each track, and the entire piece loops seamlessly.

Sound Choice (1-32)

The sound set is a set of 32 short tape loops, selected for interest and variety from a long ambient recording made on a reel-to-reel tape recorder in a single room during the course of an afternoon.

These tape loops ranged in length from a 5 seconds to 30 seconds apiece. The original sound set, recorded in my room on the first floor of Chouinard Hall, included:

1. A baroque piece of music being played on a solo violin
2. A recording of Steve Reich’s *Violin Phase*, played on a vinyl record on a cheap record player.
3. A snippet of *Uncle John’s Band* from the Grateful Dead album *Working Man’s Dead*
(the above three sounds were all produced by playing vinyl records on a cheap record player)
4. Sounds of people walking down the outside hallway talking among themselves.
5. Splashes from the nearby swimming pool heard thru the open window.
6. Air conditioning / heating
7. Television broadcasts.

Speed of Playback (1-6)

When the source sounds loops are recorded onto the master track, the loop is played at one of six speeds: -2x -1x -0.5x +0.5x +1x +2x.

Effects processing (1-6)

One of several effects is applied to the sound, originally using a Buchla 200 system for audio processing. Filter and reverb settings were tweaked to taste during recording of the master tracks.

1. No effect
2. Ring Modulation
3. High-pass Filter
4. Low-pass Filter
5. Bandpass Filter
6. Reverb/delay

Track Phase

During score preparation the start times were offset by 25% for each track, to make the final splice more seamless, otherwise there would be matching cross-fades at the end point.

Cross-fades

Cross-fades between subsequent sounds were produced by doing stereo recordings, recording overlapping sounds on alternating left/right channels, manually adjusting the levels to match the proscribed entrance and exit fade timings from the score.

Master Recording and Tape Loop

These stereo recordings were mixed down to mono for each of the 4 master tracks, on ½" 4-track tape. The master tracks were then recorded to ¼" stereo (left=1+2, right=3+4) for the exhibition tape loop. To make the tape loop seamless the beginning material is reproduced for a few seconds at the end of the master recording, and a diagonal splice was used to cross-fade the repetition point.

Slide Show

The slides in the slideshow were photographs of an artists interpretation of the master score, made by cutting and pasting magazine clippings into the same arrangement, with each tape-loop represented by a different magazine cutout. A series of approximately 30 slides, displayed about 10 seconds apiece revealed the entire score in sequence. The original art and slides were prepared by Lang Zerner.

Script

For scripting purposes, the score can also be represented textually, as a CSV file, using the same python software used to produce the sample score above.

| Track, "Start", "Length", "FadeOut", "P1", "P2", "P3" | |
|---|-----------------------------------|
| 1, -3.05, 29.08, 12.37, 19, 5, 2 | 2, 274.09, 28.78, 13.86, 16, 5, 2 |
| 1, 13.66, 27.47, 10.08, 26, 3, 4 | 3, 4.69, 24.38, 2.82, 27, 5, 2 |
| 1, 31.05, 25.53, 7.55, 9, 4, 1 | 3, 26.24, 24.27, 15.10, 28, 5, 5 |
| 1, 49.04, 25.81, 10.00, 8, 2, 4 | 3, 35.42, 30.58, 6.07, 4, 4, 4 |
| 1, 64.84, 19.07, 4.08, 5, 5, 5 | 3, 59.93, 26.67, 12.90, 21, 1, 5 |
| 1, 79.84, 24.55, 11.90, 15, 2, 6 | 3, 73.71, 21.96, 1.96, 31, 6, 2 |
| 1, 92.49, 29.16, 9.85, 24, 3, 3 | 3, 93.71, 15.51, 1.57, 22, 5, 2 |
| 1, 111.80, 19.26, 1.81, 15, 2, 3 | 3, 107.65, 28.33, 16.02, 25, 5, 5 |
| 1, 129.25, 15.97, 7.01, 22, 5, 4 | 3, 119.96, 26.69, 2.36, 32, 2, 3 |
| 1, 138.21, 27.79, 10.75, 30, 1, 6 | 3, 144.29, 6.39, 1.35, 20, 6, 4 |
| 1, 155.25, 26.67, 5.40, 22, 2, 5 | 3, 149.33, 23.64, 15.31, 6, 6, 3 |
| 1, 176.52, 20.32, 3.36, 4, 3, 4 | 3, 157.66, 32.58, 11.09, 19, 2, 3 |
| 1, 193.47, 23.74, 14.43, 18, 5, 5 | 3, 179.14, 21.80, 10.32, 24, 2, 2 |
| 1, 202.79, 33.30, 14.05, 7, 3, 5 | 3, 190.62, 18.34, 4.48, 18, 3, 6 |
| 1, 222.04, 25.31, 2.20, 14, 4, 6 | 3, 204.48, 24.80, 6.69, 10, 2, 5 |
| 1, 245.15, 20.83, 1.34, 20, 5, 2 | 3, 222.59, 18.83, 9.42, 30, 4, 2 |
| 1, 264.64, 15.61, 6.45, 10, 5, 3 | 3, 232.01, 21.56, 8.38, 7, 3, 5 |
| 1, 273.81, 21.21, 3.78, 30, 1, 4 | 3, 245.18, 26.25, 9.74, 21, 2, 4 |
| 1, 291.23, 11.82, 6.10, 31, 6, 6 | 3, 261.69, 20.00, 5.57, 10, 5, 5 |
| 2, -10.99, 24.96, 7.93, 32, 4, 2 | 3, 276.12, 20.42, 9.32, 7, 2, 3 |
| 2, 6.03, 21.61, 6.23, 23, 3, 4 | 3, 287.21, 24.66, 7.18, 11, 4, 3 |
| 2, 21.41, 17.62, 7.44, 25, 5, 4 | 4, -5.48, 20.77, 3.71, 16, 4, 2 |
| 2, 31.59, 15.60, 3.44, 10, 4, 4 | 4, 11.58, 13.65, 1.71, 30, 4, 5 |
| 2, 43.75, 23.67, 3.90, 11, 1, 4 | 4, 23.52, 19.54, 6.11, 17, 4, 3 |
| 2, 63.52, 16.18, 9.40, 17, 2, 4 | 4, 36.94, 18.36, 4.35, 30, 1, 1 |
| 2, 70.30, 22.91, 10.17, 27, 2, 5 | 4, 50.95, 15.27, 4.95, 4, 5, 2 |
| 2, 83.04, 26.77, 3.36, 17, 5, 4 | 4, 61.28, 20.22, 3.00, 1, 4, 3 |
| 2, 106.45, 17.71, 7.05, 11, 3, 2 | 4, 78.50, 22.00, 4.14, 30, 5, 6 |
| 2, 117.10, 22.61, 11.60, 12, 5, 6 | 4, 96.37, 26.88, 15.25, 32, 5, 4 |
| 2, 128.11, 23.49, 4.76, 11, 6, 2 | 4, 108.00, 30.76, 8.13, 28, 4, 4 |
| 2, 146.84, 26.30, 14.09, 24, 4, 4 | 4, 130.62, 29.75, 14.17, 16, 2, 4 |
| 2, 159.05, 26.92, 9.44, 25, 4, 3 | 4, 146.20, 26.60, 2.47, 23, 5, 3 |
| 2, 176.53, 17.10, 4.44, 29, 5, 3 | 4, 170.33, 27.13, 17.10, 11, 2, 4 |
| 2, 189.18, 22.55, 12.54, 18, 4, 6 | 4, 180.36, 28.24, 2.51, 21, 3, 5 |
| 2, 199.20, 27.03, 13.71, 6, 4, 3 | 4, 206.09, 23.82, 9.81, 2, 3, 1 |
| 2, 212.52, 26.79, 2.37, 27, 3, 5 | 4, 220.09, 22.89, 5.03, 20, 4, 1 |
| 2, 236.94, 20.09, 10.00, 12, 4, 3 | 4, 237.96, 25.26, 6.12, 20, 5, 1 |
| 2, 247.03, 22.13, 5.82, 15, 2, 2 | 4, 257.10, 28.52, 11.22, 15, 3, 4 |
| 2, 263.34, 22.57, 11.82, 11, 2, 2 | 4, 274.39, 23.59, 3.45, 4, 3, 4 |