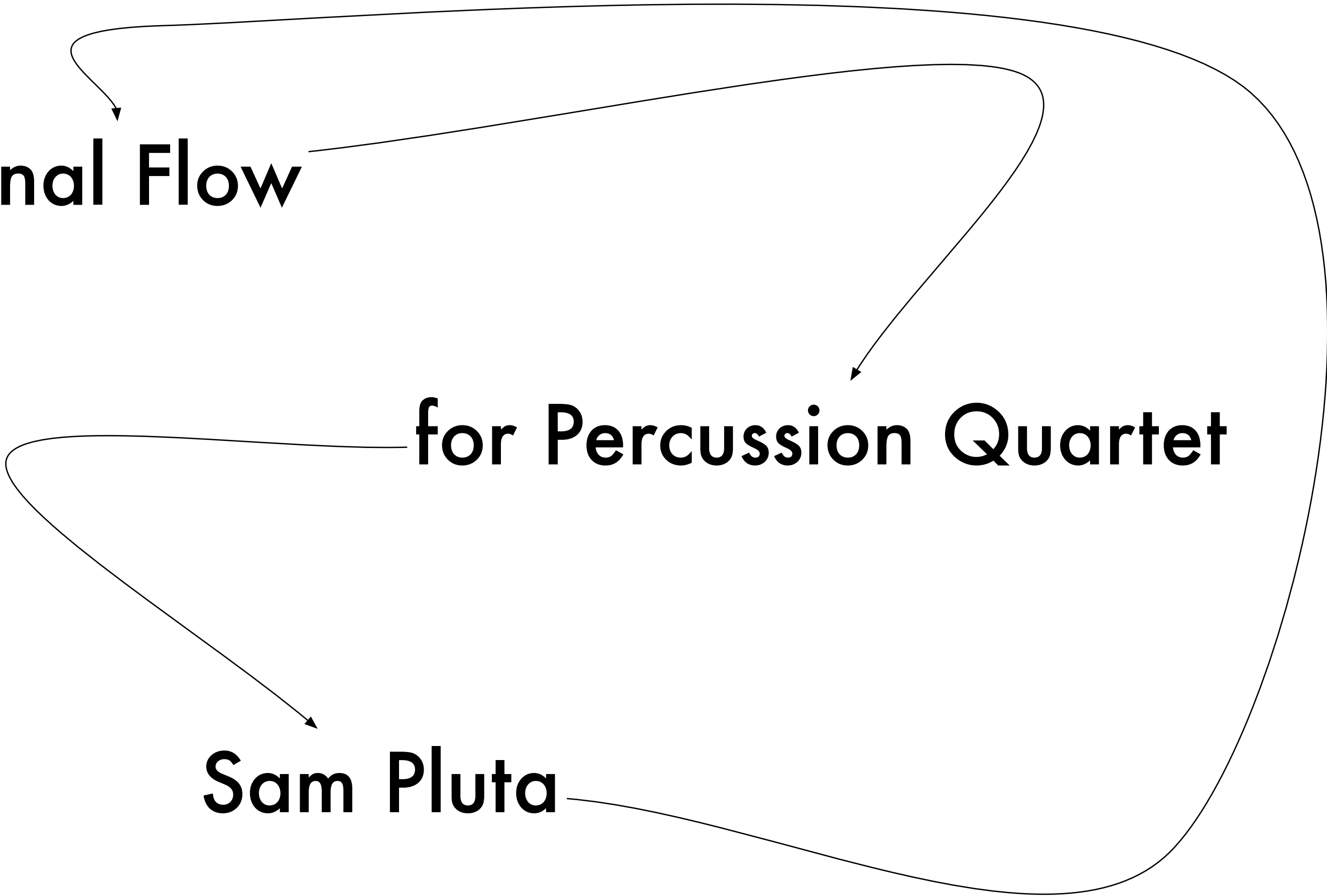


Signal Flow

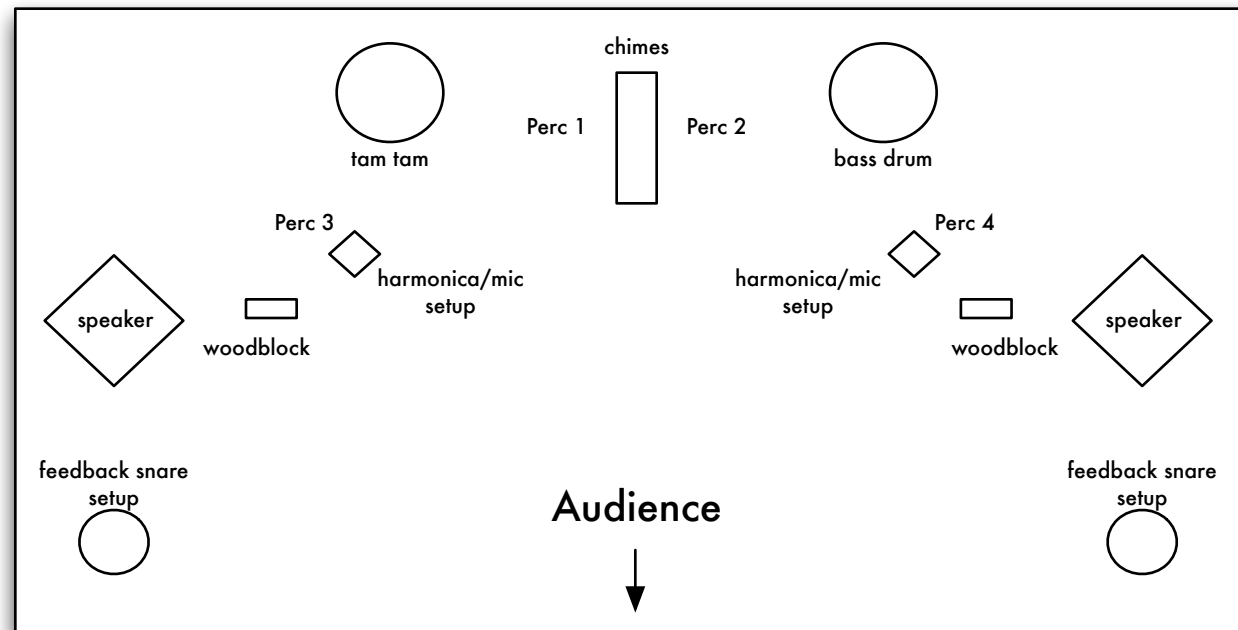
for Percussion Quartet

Sam Pluta



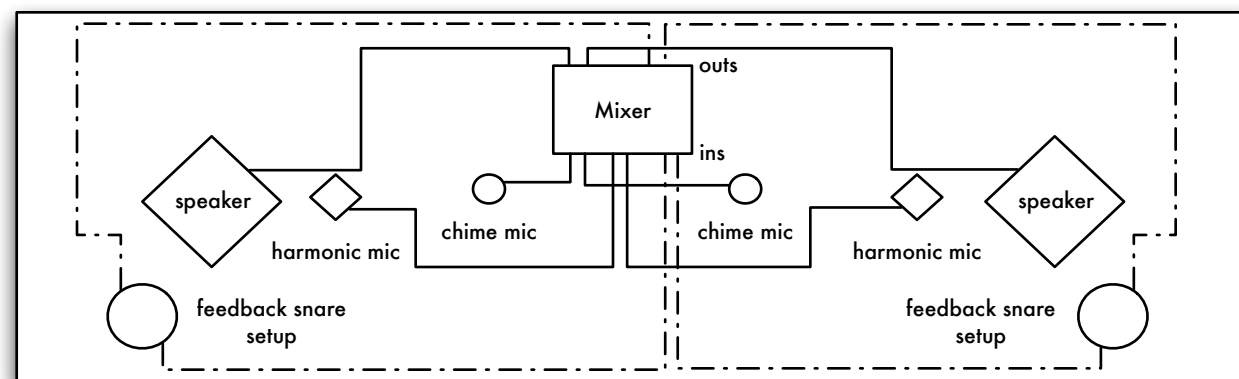
Signal Flow - Instructions

Physical Setup



The Physical Setup of the space is designed to facilitate maximum symmetry around the audience, create a maximally wide stereo setup, and to put the ensemble behind the speakers to minimize unwanted feedback. The "feedback snare" setups should be in front of the speakers, so that the snare is maximally effected by the amplified chimes. There may also be speakers around and/or behind the audience. The Audio Engineer may sit anywhere, but should be in a spot where he/she can hear the sound in the room and be able to adjust levels.

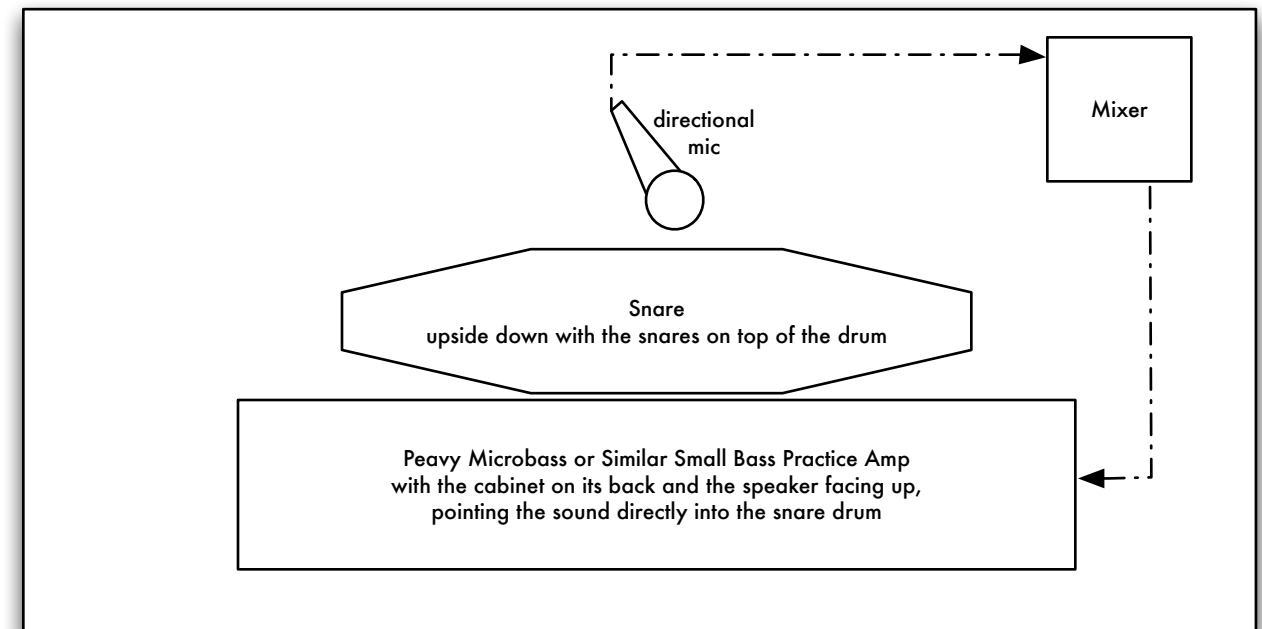
Electronics Setup



The electronics setup requires 6 directional dynamic microphones - 1 for each chime player, one for each harmonica setup, and one for each snare drum - and a mixer with 6 preamps (or multiple mixers). The chime and harmonica mic's go into the mixer and out to the main pair of speakers. The levels should be mixed so that the chime mic's are at maximal volume without feeding back. The harmonica levels should be below that of the chimes.

The snare mic's are sent directly to the bass amps under each snare. The amplification level for the snares should be set before the piece and should not be dramatically adjusted during performance. There are two levels at which the snares can feed back. There is one level that is the excitation point of the snares. Below this point the snares will not ring. There is a second level where the feedback becomes very loud and stiff and the feedback loses its warmth. The feedback should be set to slightly louder than the excitation point of the snares and should not reach the second, louder level during the piece. If they do reach this point or if the snares stop feeding back, the Audio Engineer should adjust the amplification level so that the snare is once again in between the two feedback levels.

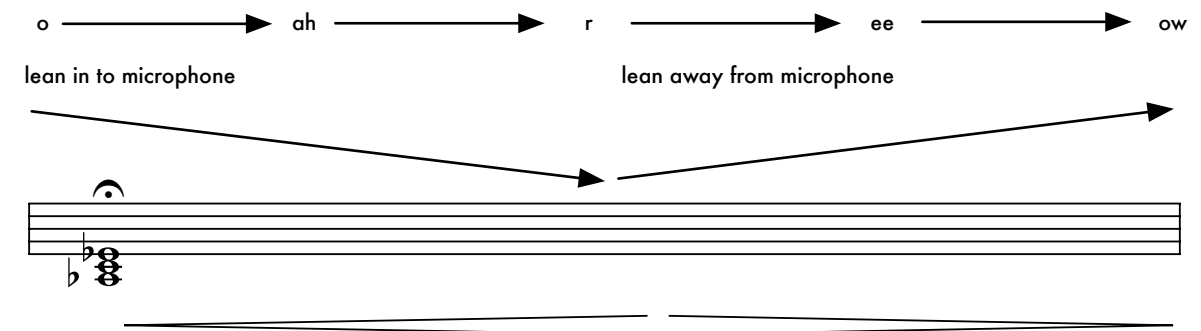
Snare Feedback Setup



Harmonicas and Harmonica Technique

Signal Flow requires four diatonic harmonicas, most likely a set of Hohner Blues Harps, in the keys of Ab, A, Bb, and B. For each harmonica chord:

- play as long a chord as possible
- always play while breathing out so as to only play the tonic chord and avoid the dominant
- play chords in the low to low middle-range of the harmonica (no high notes)
- lean into the microphone to accentuate the crescendo and lean away to decrescendo
- slowly change vocal formant while playing the chord (this changes the timbre of the chord, but does not involve singing)



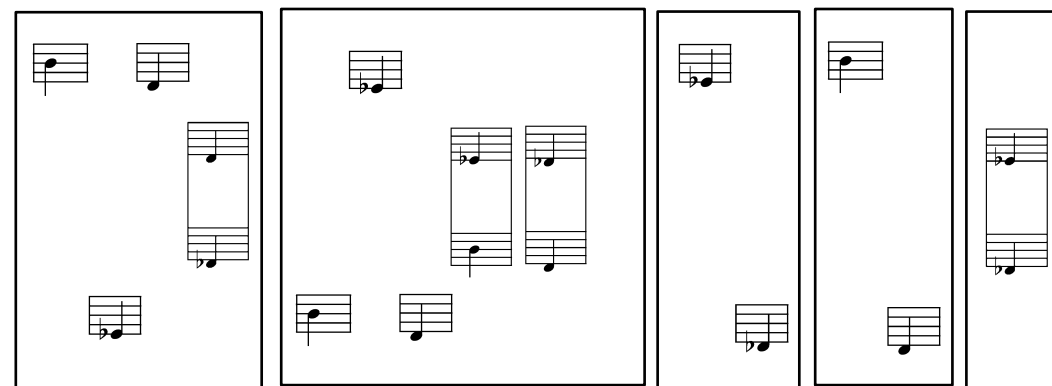
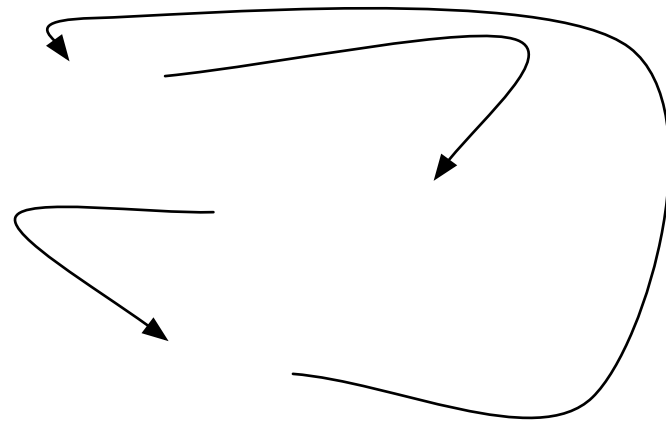
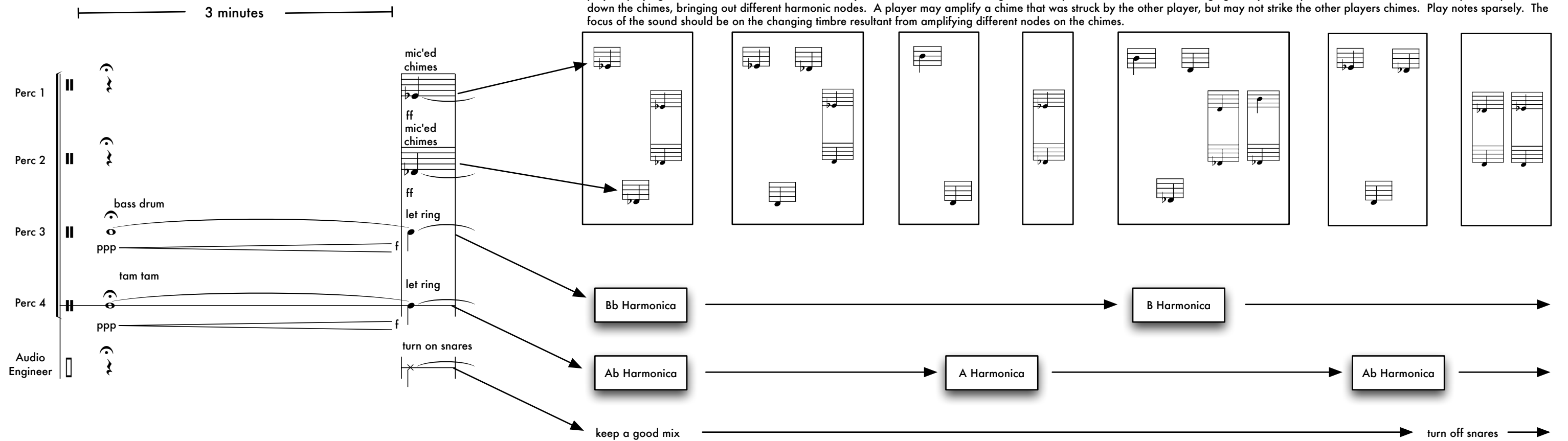
Chime/Microphone Technique

Percussionists 1 and 2 play a set of orchestral chimes and are amplifying those chimes with microphones. It is recommended that the players use highly directional dynamic microphones, like the Shure SM57, to avoid feedback. After a the player strikes the chime, they slowly move the mic up and down the length of the chime, bringing out different harmonics with each mic location. The focus of the piece should not be on the struck chimes, but rather on the changing spectra resultant from moving the microphones. The melodic fragments resultant from the order of the pitches struck should be a background layer. The players should be listening not only to their own sound, but the combined sound with the other player. Often times, beating will result from closely related harmonic tones. Difference tones and harmonies will also interfere with the feeding back snare drums. Players should be aware of this relationship and should interact with it.

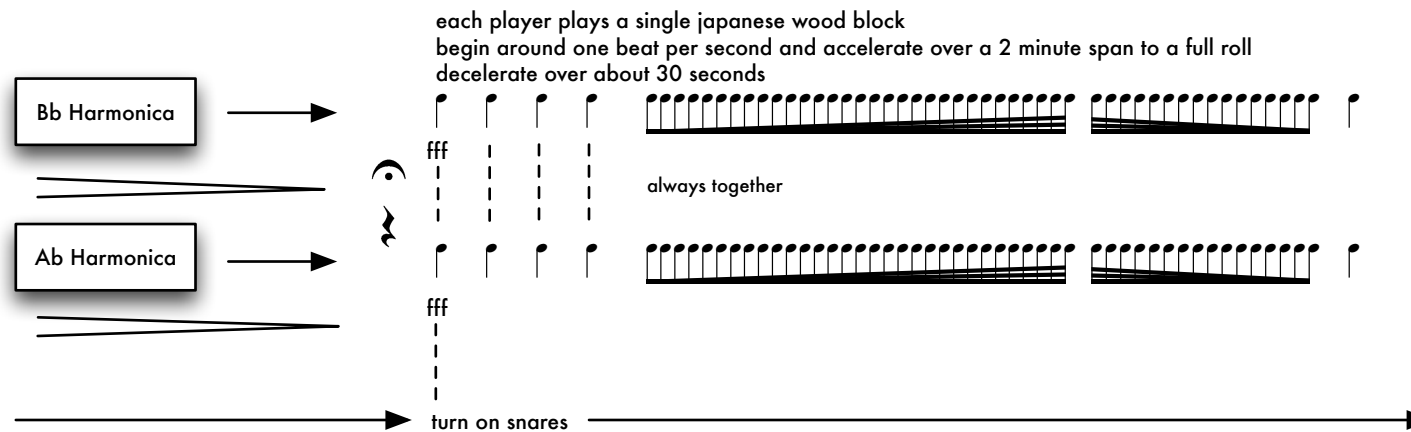
Signal Flow

for Jeff, Douglas, and Jon

Percussionists 1 and 2 play each section for 35-55 seconds, totaling around 9-10 minutes. Perc 1 plays the top row of notes; Perc 2 the bottom row. The middle row are dyads resulting from both players playing at the same time. Choose a note or dyad within each block. A single note is repeated 1-5 times before changing. A dyad is repeated 1-3 times. Run the microphone up and down the chimes, bringing out different harmonic nodes. A player may amplify a chime that was struck by the other player, but may not strike the other players chimes. Play notes sparsely. The focus of the sound should be on the changing timbre resultant from amplifying different nodes on the chimes.



allow the chimes to naturally decay



let the snares play straight for 30 seconds then slowly pan the feedback so that each snare is feeding back into the other. this causes both snares to pulse after a moment, abruptly turn off the snares