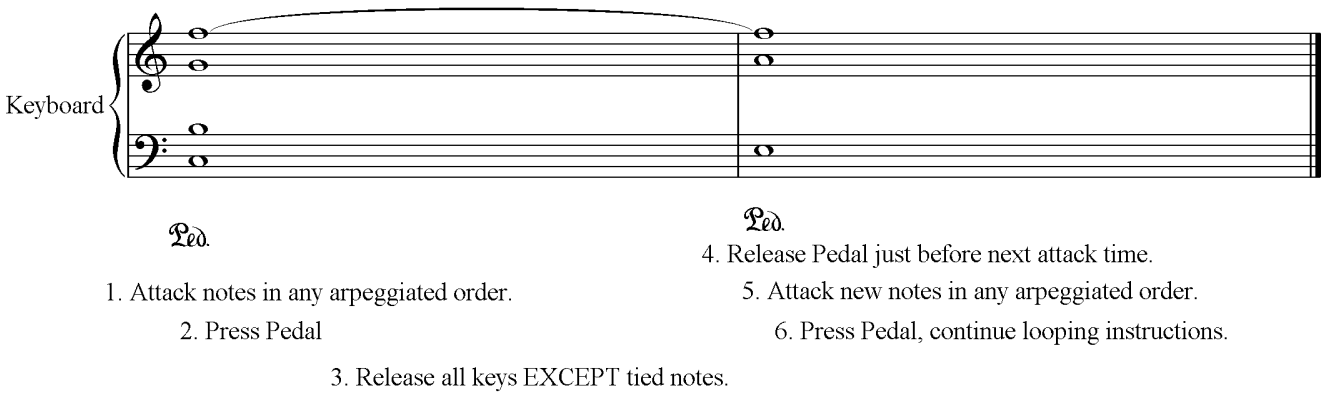
Warren Burt: Experience of Marfa 7 & 8: A Book of Drones No. 7 & No. 8

For Electronic Keyboard with Sustain Pedal and Linplug Octopus software synthesizer or equivalent.

These two pieces use the same notational score. The same keys are pressed, but due to the completely different tunings used, the pieces sound totally different.

Both pieces use the same keyboard technique of playing any arpeggiation of the notes in the given chord, then immediately pressing the sustain pedal. Once the pedal is held, all the non-tied notes of the chord may be released. Continue holding down the tied notes. Just before the time for the attack of the next chord, release the sustain pedal while continuing to hold down the tied notes. Then play the pitches of the next chord, arpeggiating them in any order, then press the sustain pedal, etc. This diagram should give an idea of the technique.

Keyboard and pedal co-ordination with synthesizer patch.



Any dynamics will be acceptable in this piece – the awkward nature of some of the chords will determine dynamics as much as the player's skill.

The scales for the pieces are given below. These are played with 1/1 = C = 261.63 Hz.

A Book of Drones No. 7 - “18mcphee-deviantpelog4.scl” (from Colin McPhee, “Music in Bali”)

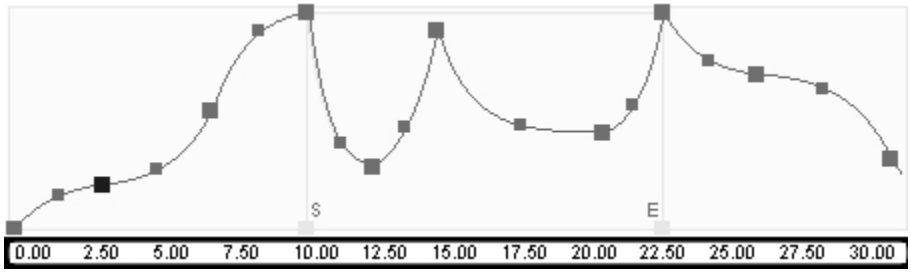
mcphee's deviant pelog no 4 - "demung"
|
0: 1/1
1: 207.000 cents
2: 314.000 cents
3: 761.000 cents
4: 854.000 cents
5: 2/1

A Book of Drones No. 8 - “43Tone17NoteSplitKey.scl” (from Ross Duffin - “How Equal Temperament Ruined Harmony – And Why You Should Care.”)

43 Tone ET - 17 Notes - Split Key - nearly fifth comma meantone
|
 0: 1/1
 1: 83.721 cents
 2: 111.628 cents
 3: 195.349 cents
 4: 279.070 cents
 5: 306.977 cents
 6: 390.698 cents
 7: 502.326 cents
 8: 586.047 cents
 9: 613.953 cents
10: 697.674 cents
11: 781.395 cents
12: 809.302 cents
13: 893.023 cents
14: 976.744 cents
15: 1004.651 cents
16: 1088.372 cents
17: 2/1

Timbre: Each piece uses an additive synthesis timbre of sine wave partials detuned to match the tuning of some of the pitches in the scale. A complex envelope is also used so that each partial has a different very slow attack, decay, and varying loop/sustain phase. This means that as the tone is held, different partials get louder and softer at different rates. The detuned non-harmonic partials mean that in some cases, familiar intervals, such as octaves, are not heard clearly, but when chords are made, partials reinforce each other in interesting and unique ways.

This is the prototype of the kind of envelope used for each partial. For each partial, the length of attack, sustain loop and decay will be slightly different. “S” = start of sustain loop, and “E” - end of sustain loop. The decay continues to 0 for about 5 seconds after the end of the diagram.



The tuning of the partials for each piece is as follows:

A Book of Drones No. 7: Partial tuning for Octopus timbre “McPheeScale4Harmonics.”

1. Fundamental – 0.00 displacement
2. +19.61 semitones (.61 = 61 cents)
3. +27.14 semitones
4. +32.54 semitones
5. +38.07 semitones

A Book of Drones No. 8: Partial tuning for Octopus timbre “43Tn5thCommaMeanT.”

1. Fundamental – 0.00 displacement
2. + 18.9767 semitones
3. +27.9070 semitones
4. +33.6883 semitones
5. +37.9535 semitones
6. +41.5232 semitones
7. +44.9302 semitones
8. +46.8837 semitones

Although the Linplug Octopus software synthesizer is preferred for this piece, any other synthesizer or sampler capable of making similar timbres may be used. A version of the timbre and tuning patches for the Speedsoft Vsampler is also available.

Durations: The time durations given in the score are a minimum duration for the piece. The smallest amount of time necessary to really hear the harmonies and timbres of the piece. If desired, longer durations may be used. If the chords are sustained for 1 minute each (or longer), the Scala on-screen performance keyboard could be used in place of the normal MIDI keyboard, since the time taken to click on and off chord tones will not take up too much, proportionately, of the overall chord's duration.

Nov-Dec. 2007, Warren Burt

Octopus Synthesizer Patch: #7: McPheeScale4Harmonics
Octopus Synthesizer Patch: #8: 43Tn5thCommaMeanT
Scala Scale #7: 18mcphee-deviantpelog4.tun
Scala Scale #8: 43Tone17NoteSplitKey.tun

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