Halo - a duet for Piano and Responsive Electronics

By Rob Godman

For Philip Mead

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Duration - 7'30" to 8'30"

As the title suggests, *Halo* is indeed a duet between piano and responsive electronics! The sound projectionist is responsible for turning the synthesisers on and off. The pianist will 'perform' the synthesizers as they respond to the intensity of the piano sound. The sound projectionist plays a more proactive role towards the end when the games-pad is used to play the formant synthesizer and trigger the granular piano. It is important that both performers have a good understanding of who is responding to whom!

Programme Note

Approximately two thousand years ago, the Roman Architect Vitruvius published his 'Ten Books on Architecture'. Amongst many other things he writes of his wok with acoustics in Roman Theatres:-

"..... let bronze vessels be made, proportionate to the size of the theatre, and let them be so fashioned that, when touched, they may produce with one another the notes of the fourth, the fifth, and so on up to the double octave.
"..... the voice, uttered from the stage as from a centre, and spreading and striking against the cavities of the different vessels, as it comes in contact with them, will be increased in clearness of sound, and will wake an harmonious note in unison with itself."

Vitruvius - The Ten Books on Architecture in translation by Morris Hicky Morgon

As the title suggests, *Halo* is indeed a duet between piano and responsive electronics! The vessels, as specified by Vitruvius, have been 'replaced' by digital rtechnology. To some extent, Vitruvius' intentions have been kept…

Halo was written for a first performance by the composer and Philip Mead for a premiere at Anglia Ruskin University, Cambridge on 18th November 2005.

Rob Godman October 2005
Guilden Morden, Herts, UK; Montreal, Canada
Revised version January 2006

Notes on Performance

UC - Una Corda
TC - Tre Corda

- play the cell as quickly as possible

- continue playing the cell for the duration indicated

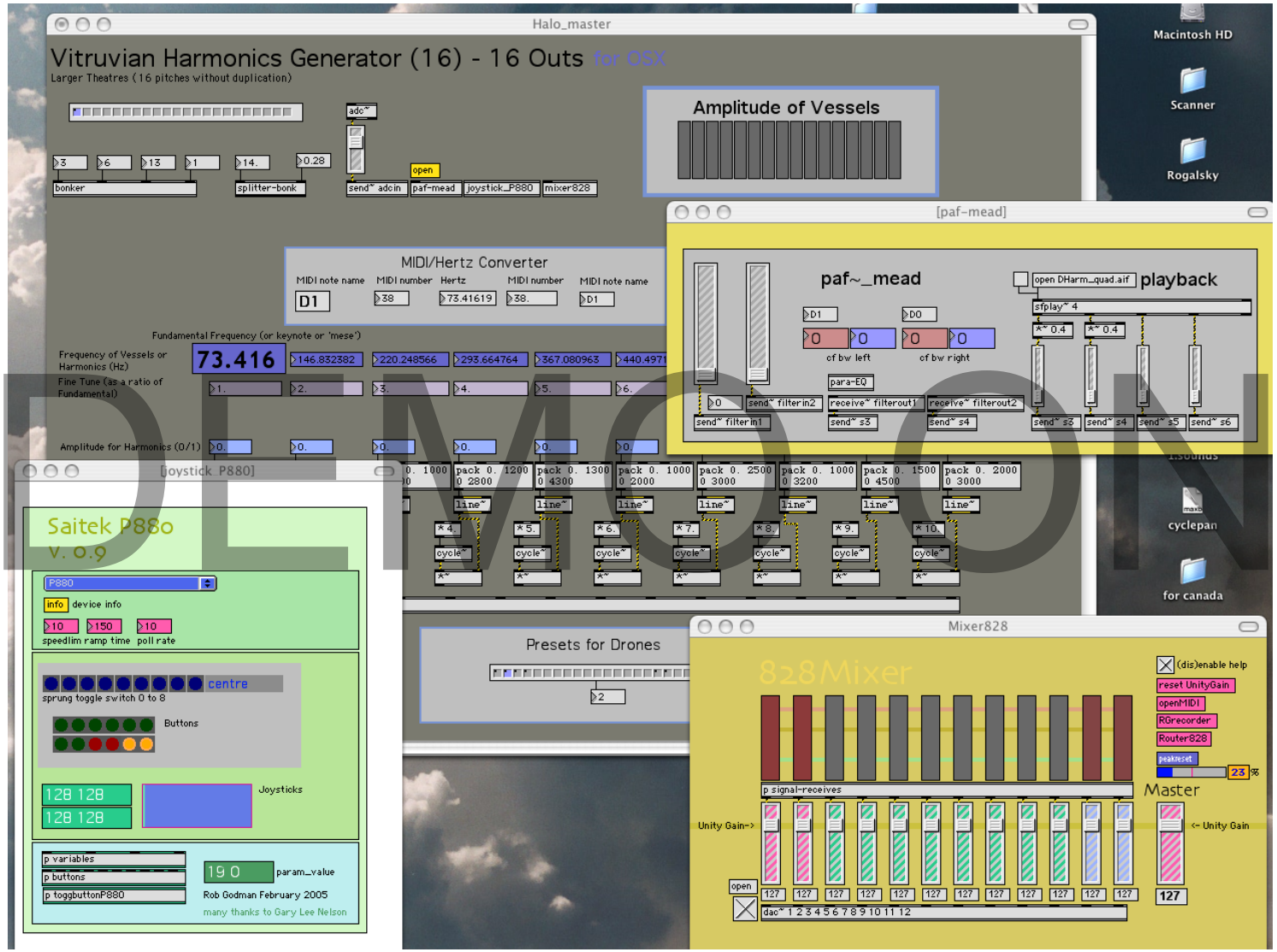
Fingering for the RH chord (section A and onwards) is as follows:
2 - D#, 1 - E & F, 3 - G, 4 - G#, 5 – B (this six note chord is to be played by the RH only)

Much of *Halo* is notated in a space/time notation. Tempo marks above these sections provide an approximate duration for semiquaver and quaver values (note – there may be different tempo markings within the same section). Metrical accuracy is not required for these sections - in fact a more fluid feel is anticipated. Durations are indicated in seconds at the end of sections. Again, metrical accuracy is not required but aim for ± 20% of the duration indicated.

Technical Sheet

Quadraphonic PA system - arranged in a semicircle behind pianist
Microphone to piano (this is used for detecting piano amplitude only - the signal is not heard)
Max/MSP and 4 channel soundcard (MOTU 828mk2 was used for the original performance) - patches shown below
Saitek 880 Dual Analog games-pad - used as the sound projectionists controller
RH joystick for formant synthesizer with a fundamental of D (36Hz)
LH joystick for formant synthesizer with a fundamental of D (72Hz)
(other buttons used for on/off fade of drones)

The responsive system is detecting transient percussive attacks using Miller Puckette's Max/MSP bonk~ external. It is driving an additive synthesizer producing harmonics found in the harmonic series and those specified by Vitruvius for his resonating vessel concept.


Halo_master
Vitruvian Harmonics Generator (16) - 16 Outs for OSX
Larger Theatres (16 pitches without duplication)
Amplitude of Vessels
MIDI/Hertz Converter
Fundamental Frequency (or keynote or 'mese')
Frequency of Vessels or Harmonics (Hz)
73.416
Fine Tune (as a ratio of Fundamental)
Amplitude for Harmonics (0/1)
[paf~mead]
paf~_mead
playback
of bw left
of bw right
para-EQ
[joystick_P880]
Saitek P880
v. 0.9
sprung toggle switch 0 to 8
Buttons
Joysticks
Rob Godman February 2005
many thanks to Gary Lee Nelson
Presets for Drones
Mixer828
828Mixer
Master
Unity Gain->
<- Unity Gain
Macintosh HD
Scanner
Rogalsky
cyclepan
for canada

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ROB GODMAN

FOR PHILIP MEAD

PIANO

PPPP

SUSTAIN A WITH MIDDLE PEDAL UNTIL SECTION A

UC

RESPONSIVE ELECTRONICS
(MAX/MSP & SAITEK P880 GAMEPAD)

DHarm16 (additive synth.)

OFF

13" (♩=160)

2"

p

mf

p

TC

ON (synth. will 'respond' to piano intensity)

2" 2" 2" 2"

mf p mf p mf p mf p

17"

(♪=132 F# only)

7 7 7 7

2"

p

(♪=160 A only)

ONE

Maintain exact ♪=132 tempo F# only

2"

2"

Gradually slow A only (independant of F#)

(A only ♪=100)

(DRONE CONTINUE)

(A) A TEMPO

SILENTLY DEPRESS AND SUSTAIN WITH MIDDLE PEDAL

♪=176 (♩=88) chord only

13"

STOP ABRUPTLY

PP

SUSTAIN MIDDLE PEDAL UNTIL SECTION D

ff

(♪=160) A only

1·5"

1·5"

ALLOW DRONES TO FADE TO NOTHING

13" chord maintain ♩=88 pulse

♩=72

13" chord maintain ♩=88 pulse

♩=60

13"

Gradually slow

♪=88 (♩=44)

13"

* See 'notes on performance' for fingering

(K) (♪ = 184)

13"

SILENTLY DEPRESS AND SUSTAIN WITH MIDDLE PEDAL

8va

(DRONE CONTINUE)

ALLOW DRONES TO FADE TO NOTHING

VIT D16 OFF

*

PLAY DHARM.aif [BUTTON 7]

8va 8va 8va 8va 8va 8va 8va

13"

FORMANT SYNTH (D0)

ON

(DHARM.aif continue)

[RH JOYSTICK]

sweep frequency ad lib.

8va

13"

SLOWER ♪ = 132

17"

(ff)

P

FORMANT SYNTH (D0 AND D1)

(DHARM.aif continue)

[RH & LH JOYSTICK]

17"

23"

follow frequency sweeps ad lib

P

ff

[BUTTON 1]

(ff)

Granular Piano

[BUTTON 8]

ALL SOUNDS

* See 'notes on performance' for electronics control

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