Johan Svensson

ampèrian loops - part III

for ensemble and electro-mechanical devices
2017

commissioned by and dedicated to ensemble mosaik
with support from Ernst von Siemens Music Foundation

dur: 14 min

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ABOUT *AMPÈRIAN LOOPS*

ampèrian loops - part III is the third and final piece in the cycle *ampèrian loops*. all pieces in the cycle are written for ensemble and electro-mechanical devices and have computer controlled solenoids as a core element of the music. a solenoid is a device consisting of an inductive coil around a movable steel or iron slug. when the electro-magnet is switched on, the slug goes out. sounds are created when the solenoid slugs hits the objects. the solenoids are controlled with a computer via an arduino (an open-source electronics prototyping platform).

ampèrian loops - part I (2013) for bass flute, half clarinet, metal can, piano, violin, viola, cello and electro-mechanical devices [solenoids] dur: 14′

ampèrian loops - part II (2015) for piccolo/bass flute, bass clarinet, percussion, violin, cello, keyboard, vibrators [keyboard pedals or 1 extra performer] and electro-mechanical devices [solenoids and transducers] dur: 16′

ampèrian loops - part III (2017) for piccolo/bass flute, bass clarinet, percussion, violin, cello, keyboard, vibrators [1 performer] and electro-mechanical devices[solenoids and transducers] dur: 14′

INSTRUMENTATION

piccolo/bass flute

bass clarinet
+ plastic pipe clarinet [length ≈ 3 m]*
+ 500 ml glass bottle

percussion
sand paper blocks
castanets
330 - 500 ml glass bottle
small metal object
small bongo
metal sheet [dim. ≈ 85x35 cm]*
2 hard mallet, medium/double mallet, drum stick
handheld milk frother

violin

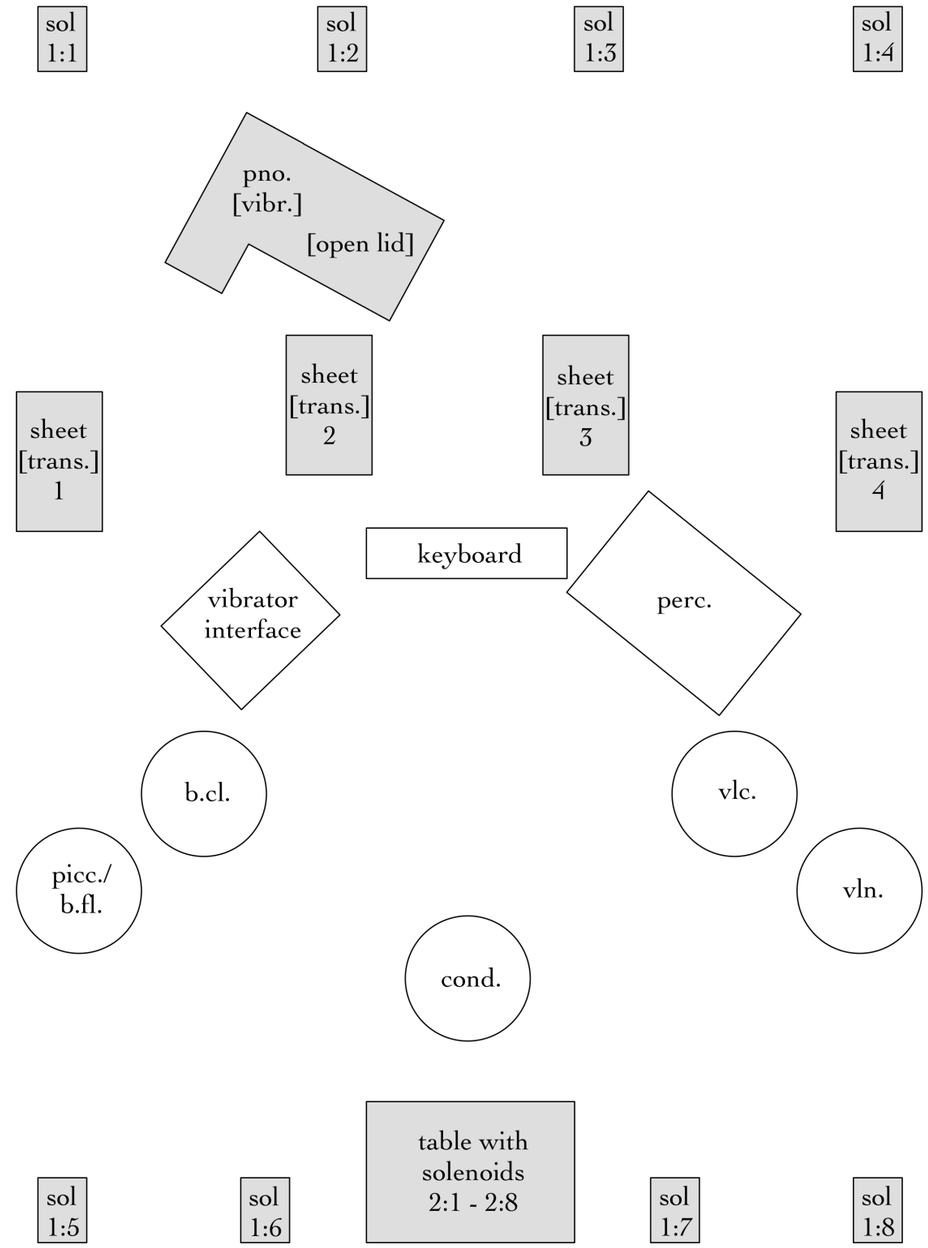
cello

vibrator interface
controlling:
5 modified mini vibrators* attached inside a grand piano
+ 250 ml glass bottle

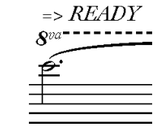
MIDI keyboard [88 keys]
+ computer with max/msp 7.3.4 or later
controlling:
4 transducers* attached on 4 metal sheets [dim. ≈ 85x35 cm]*
16 solenoids* [2 sets à 8 solenoids]

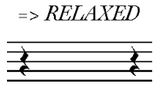
* = can be provided by the composer

STAGING



GENERAL INSTRUCTIONS





READY / RELAXED

READY : put hands [bow / mouth / fingers] on the instrument as if being ready to play. make the change quickly where the '=>' is. stay in a ready position until => *RELAXED* is written.

RELAXED : stay in a relaxed position as if having a 50 bar rest. make the change quickly where the '=>' is. stay in a relaxed position until => *READY* is written.

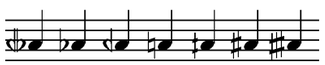
READY / RELAXED should not be theatrically exaggerated: it should be a sudden shift in energy rather than a choreography. feel free do do necessary preparations during RELAXED or just before the transition to READY [page turning, finding mouth / finger position etc.].

from bar 70 onwards, READY / RELAXED is not specified anymore. make the changes in an ordinary way.

dynamics are written in two different ways:

mp = sounding dynamic: mezzo piano. a great amount of action/power might be necessary to reach the written dynamic level.

"ff" = action dynamic: fortissimo. sounding result is probably much softer.

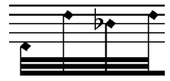


pitch notation
three quarter tones flat, half tone flat, quarter tone flat, natural, quarter tone sharp, half tone sharp, three quarter tones sharp.

staccato, always as short and dry as possible.

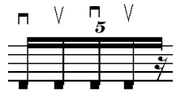
PLAYING TECHNIQUES AND SPECIFICATIONS

PICCOLA / BASS FLUTE



aeolian sounds; pitches mixed with much air sound. this is produced by placing the mouth further away from the embouchure than is usual. the pitches will be approx. a halftone sharper than usual.

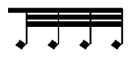
tongue pizz. always as short and dry as possible.



air sound. closed embouchure (breath: out-in-out-in).

flutter tongue.

BASS CLARINET



air sound, open embouchure.

kissing sound. always short and dry.

slap tongue.

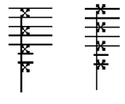
plastic pipe clarinet
this instrument is made from 20 mm PVC pipe. it should be approx. 3 m long and have a reed made from a softer plastic [e.g. from a cream/ sour cream package]. picture of mouthpiece to the left.

tongue ram or slap tongue.

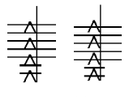
500 ml glass bottle
tune with water (tuning to the left). played by blowing into it.

STRINGS

cello: IVth string should be tuned down one octave



hit strings with left hand, keep hand on strings until the release sign is written. while left hand is on the strings: adjust the hand to make other playing techniques sound (un-dampen strings, change finger positions etc.).

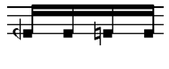


release left hand quickly.

legno battuto.

crini battuto.

tap.

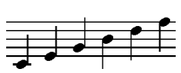


damp string by touching it gently without pressing it. one finger touching the string on written pitch and at least two other fingers damping behind it.

drop the bow to make several short bounces. the bounces should last the full written duration.

PERCUSSION

sand paper blocks
castanets
330 - 500 ml glass bottle
small metal object
small bongo
metal sheet
the metal sheet used should have the approx. dimensions 85x35 cm, and be identical to the 4 metal sheets used with transducers. THE METAL SHEET SHOULD BE DAMPED THROUGHOUT THE PIECE!
2 hard mallet, medium/double mallet, drum stick and handheld milk frother

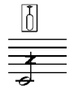


metal sheet, bongo, metal object, bottle, castanets, sand paper blocks

dead strokes.

release quickly with a horizontal/scratching movement.

frother handle on instrument: soft motor sound.



whisk on instrument: noisy sound.

VIBRATOR INTERFACE

5 modified mini vibrators should be attached inside a grand piano. the piano should have open lid and be placed behind the ensemble. the vibrator interface is custom made and has 5 buttons, one for each vibrator, plus 1 acoustic button: creating an acoustic sound both when being pressed and when being released.

the clef showing which vibrator to play.

HIGH: high strings, not damped. use strings behind bridge where the strings have very different intonation.

PEGS: on the tuning pegs.

MID: on g#' [middle octave], not damped. the pitch should be heard clearly both when vibrator is on and when it is turned off [fading out].

BASS: on mid-part of bass register, damped. the vibrator should hit several strings. noise rather than pitch.

SUB: a vibrator covered in rubber, e.g. finger from a rubber glove, on lowest string [low A], damped. should sound similar to a gran cassa trill.

250 ml glass bottle
played by blowing into it. the bottle should not be tuned with water, the pitch will be somewhat random.

the bottle should be placed on a wooden surface.

KEYBOARD

a midi keyboard with 88 keys should be used. the keyboard is connected to a computer with max/msp (v. 7.3.4 or later) and a max/msp patch is controlling the transducers and the solenoids. above the keyboard notation there are three staves showing a representation of the sounding result of the keyboard action.

transducers on metal sheets
4 transducers should be attached on 4 identical metal sheets [dim. ≈ 85x35 cm].

solenoids
there are 16 solenoids altogether divided into 2 sets à 8 solenoids. each solenoid has a LED attached to itself. each time a solenoid is hitting an object, the LED is flashing. But the LED is sometimes flashing without having a solenoid hit.

solenoid set 1
The solenoids are grouped in couples with a visual connection between their objects:
solenoid 1 and solenoid 5
solenoid 2 and solenoid 6
solenoid 3 and solenoid 7
solenoid 4 and solenoid 8

sol 1: metal plate (small)
sol 2: flower pot (ceramic)
sol 3: box (wood)
sol 4: jar (glass)
sol 5: metal plate (big)
sol 6: flower pot (plastic)
sol 7: box (cardboard)
sol 8: can (plastic)

Solenoid 5-8 are attached to objects creating softer sounds than the objects solenoid 1-4 are attached to.

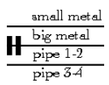
how the solenoids are distributed in the staff.

solenoid set 2
4 solenoids should be attached to metal plates and 4 attached to plastic pipes [20 mm PVC; same kind as the clarinet is made from].

the size of the metal plates should be:
sol. 1-2: approx. 10x4 cm
sol. 3-4: approx. 40x10 cm

on one end on each of the 4 plastic pipes, a piece of thin oilcloth or rubber should be tightly attached [like a drum skin]. when hitting the oilcloth end with a finger it should sound like a raindrop with pitch. the pipes should be tuned in 4 octaves of Bb:

sol. 1: bb"
sol. 2: bb' [middle octave]
sol. 3: bb
sol. 4: Bb



how the solenoids are distributed in the staff.

AMPLIFICATION

If *ampèrian loops - part III* is performed in a small-medium venue amplification is not necessary. if the venue is bigger or has very dry acoustics, all instruments and devices has to be amplified.

ampèrian loops - part III

Johan Svensson

score in C

♩ = 60

6/4 7/4 5/4 4/4 4/4 5/8 4/4 3/8

b.fl.

=> *READY: hands / mouth on instrument*
(aeolian sound)
p
"*f*"
key click: all fingers (keep fingers on keys)

=> *RELAXED: fingers open / instrument from mouth*
(pizz.)
release quickly: all fingers

=> *READY*
sim.

=> *RELAXED*
sim.

=> *READY*
pp

=> *RELAXED*
p
"*f*"

b.cl.(B♭)

=> *READY: fingers / mouth on instrument*
(air sound, open embouchure)
p
"*f*"
key click: all fingers (keep fingers on keys)

=> *RELAXED: fingers open / instrument from mouth*
(kissing sound)
release quickly: all fingers

=> *READY*
sim.

=> *RELAXED*
sim.

=> *READY*
pp

=> *RELAXED*
p
"*f*"

vln.

=> *READY: hand / bow on instrument*
"*f*"
II, III
(hit strings with bow, keep bow on strings)
"*f*"
(hit strings with left hand, keep hand on strings)

=> *RELAXED: hands down*
(some resonance from strings, not too much)
(release bow from strings)
(release left hand)

=> *READY*
II, III

=> *RELAXED*

=> *READY*
II, III
pp

=> *RELAXED*
"*f*"

vlc.

=> *READY: hand / bow on instrument*
"*f*"
II, III
(hit strings with bow, keep bow on strings)
"*f*"
(hit strings with left hand, keep hand on strings)

=> *RELAXED: hands down*
(some resonance from strings, not too much)
(release bow from strings)
(release left hand)

=> *READY*
II, III

=> *RELAXED*

=> *READY*
II, III
II (5)
III (7)
p

=> *RELAXED*
"*f*"

(hard mallets)
(milk frother)

perc.

=> *READY: sticks on instruments*
(dead strokes)
METAL OBJECT (small)

=> *RELAXED: hands down*
(release quickly
with a horizontal/
scratching movement)

=> *READY*

=> *RELAXED*

=> *READY*
(frother handle on bongo)
(soft motor sound)

=> *RELAXED*

BONGO (small)
p
=> *READY: hands on instruments*
(acoustic button)
(push down)

=> *RELAXED: hands down*
(release button)

=> *READY*

=> *RELAXED*

=> *READY*
(blow into bottle)
(pitch)

=> *RELAXED*

vib./obj.

HIGH
PEGS
MID
BASS
SUB

p
(keep holding bottle on surface)
(scratch bottle against wooden surface)
GLASS BOTTLE

(release bottle quickly)

p
(lift bottel)
silently put
bottle down

sheets transd.
(noise sound)
(lights only)

set 1
HARD
metal/pot
box/jar
metal/pot
box/jar
SOFT

solenoids

set 2
small metal
big metal
pipe 1-2
pipe 3-4

(pitches)

keyb.

=> *READY: hands on keys*
8va

=> *RELAXED: hands down*

=> *READY*
8va

=> *RELAXED*

=> *READY*
8va

=> *RELAXED*

8vb
KEYBOARD MAPPING #1

3/8 7/4 2/4 3/8 3/4 2/4 5/8

b.fl.

b.cl.(B♭)

vln.

vlc.

perc.

vib./obj.

sh.

sol.

keyb.

=> READY

=> RELAXED

key click: all fingers

release quickly: all fingers

(kissing sound)

II, III

pizz.

arco

II (5)
III (7)

METAL SHEET (damped)

(medium/double mallet)

(vibrator controller, 3rd button)

HIGH
PEGS
MID
BASS
SUB

silently put
bottle down

15

5/8 7/8 5/8 7/8 5/4 7/4 4/4

b.fl.

=> READY

=> RELAXED

b.cl.(B♭)

(slap tongue)

vln.

II, III

pizz.

(tap)

(keep hand on strings)

vlc.

II (5)
III (7)

perc.

(frother handle on bongo)
(soft motor sound)

vib./obj.

HIGH
PEGS
MID
BASS
SUB

(vibrator controller, 5th button)

silently put bottle down

sh.

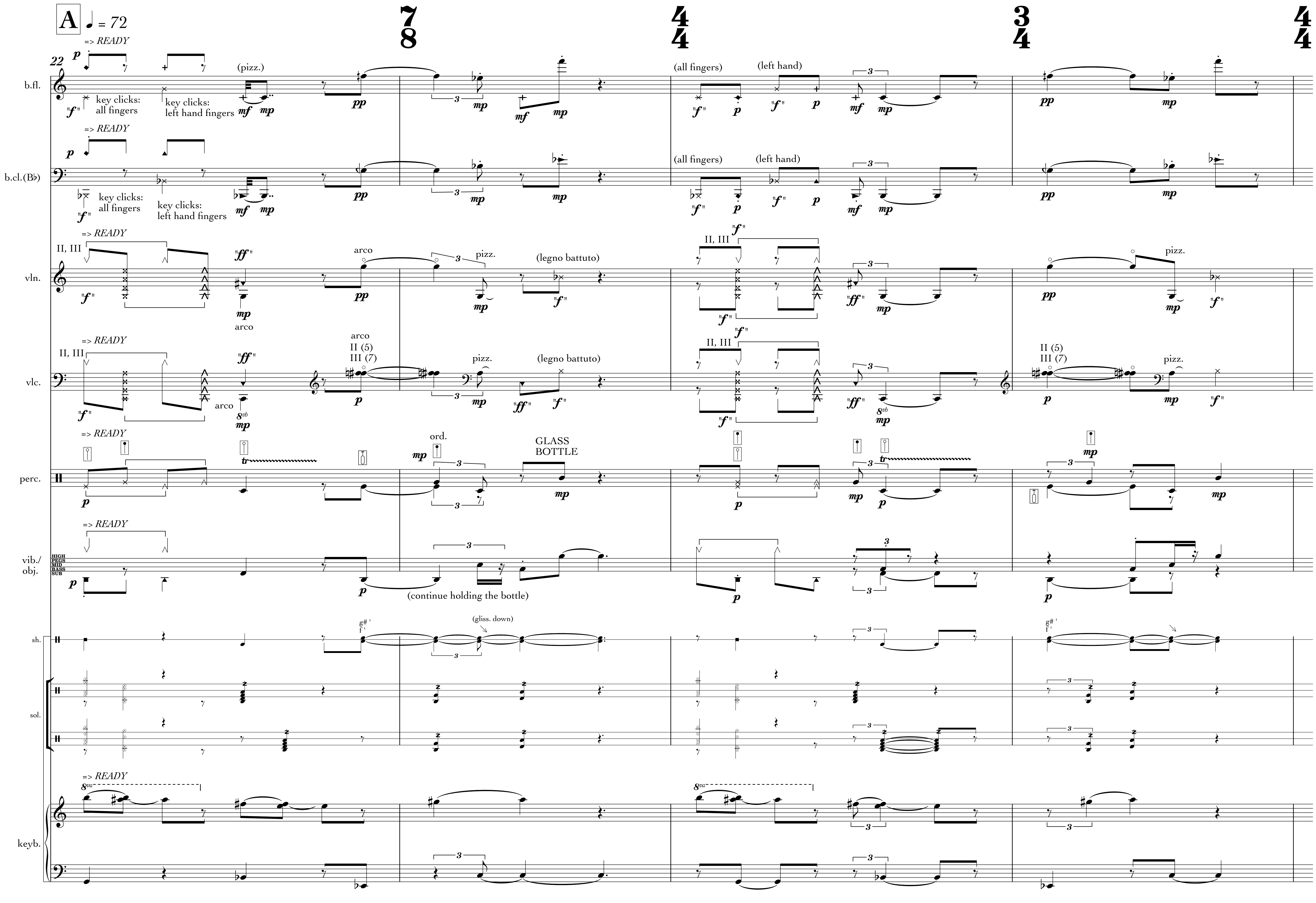
(low pitch)

(gliss. up)

(buzz)

sol.

keyb.


A
♩ = 72
22
=> READY
key clicks: all fingers
key clicks: left hand fingers
(pizz.)
(all fingers)
(left hand)
b.fl.
b.cl.(B♭)
II, III
arco
pizz.
(legno battuto)
vln.
II (5)
III (7)
vlc.
ord.
GLASS BOTTLE
perc.
HIGH
PEGS
MID
BASS
SUB
(continue holding the bottle)
vib./obj.
(gliss. down)
sh.
sol.
keyb.

26

b.fl.

b.cl.(B♭)

vln.

vlc.

perc.

vib./ obj.

HIGH PEGS MID BASS SUB

sh.

sol.

keyb.

B

30

b.fl.

b.cl.(B♭)

vln.

vlc.

perc.

vib./obj.

sh.

sol.

keyb.

(READY)

=> RELAXED

=> READY

key click: all fingers

release quickly: all fingers

II, III

arco

II (5)

arco III (7)

(buzz)

(speed 2)

(speed 1)

HIGH
PROG
MID
BASS
SUB

36

3/8 4/4 3/4 4/4

b.fl.

b.cl.(B♭)

vln.

vlc.

perc.

vib./ obj.

sh.

sol.

keyb.

=> READY

=> RELAXED

pizz.

II, III

GLASS BOTTLE

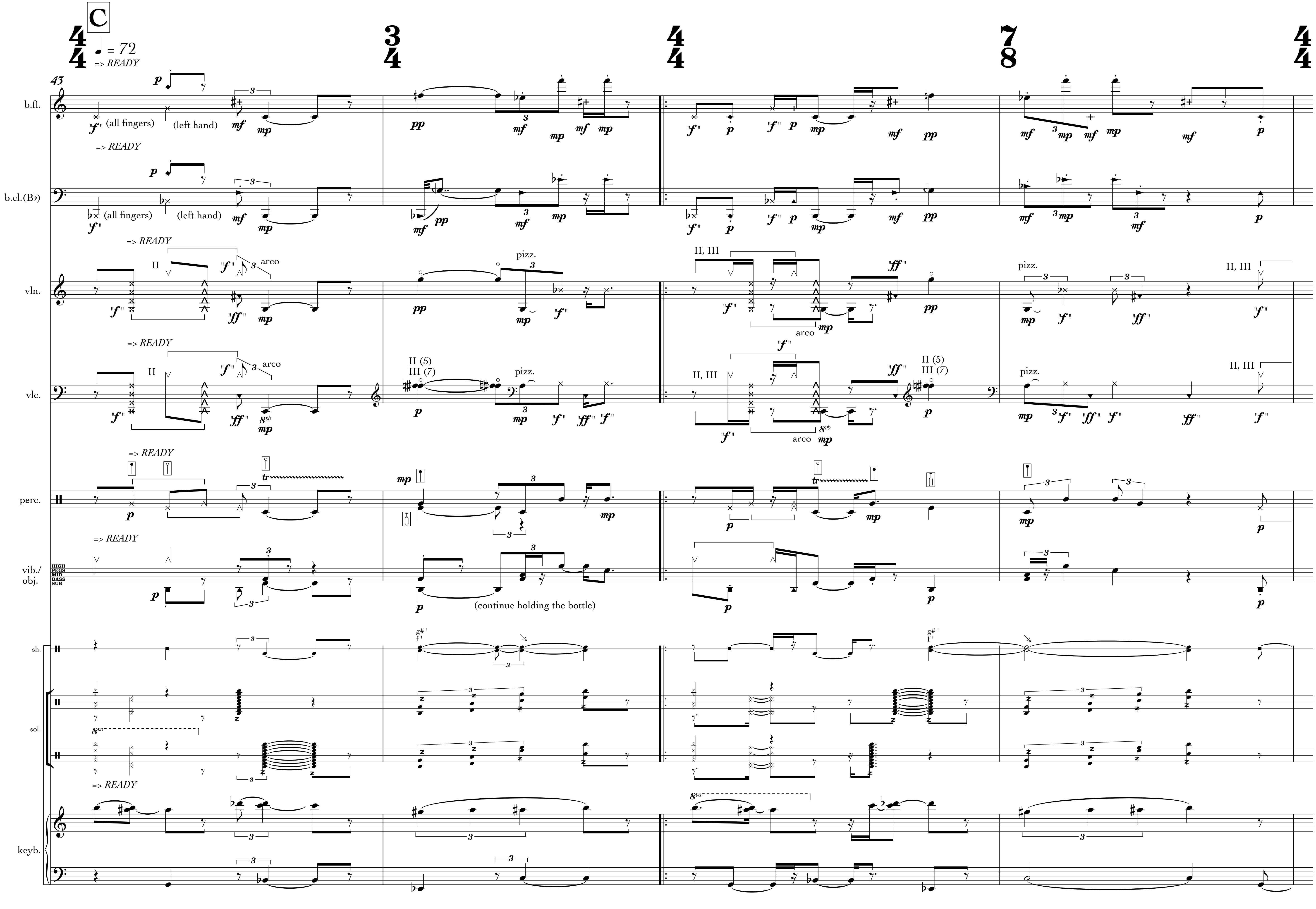
HIGH PEGS MID BASS SUB

lights ON

soft metal and box

8va

(turning off sound in metal sheets)


C
♩ = 72
=> READY
43
b.fl.
(all fingers)
(left hand)
b.cl.(B♭)
vln.
II
arco
pizz.
II, III
vlc.
II (5)
III (7)
perc.
vib./
obj.
HIGH
PEGS
MID
BASS
SUB
(continue holding the bottle)
sh.
sol.
keyb.

47

4/4 3/4 2/4

b.fl.

b.cl.(B♭)

vln.

pizz.

II, III

arco

vlc.

II (5)
III (7)

pizz.

II, III

arco

perc.

vib./
obj.

HIGH
PEGS
MID
BASS
SUB

sh.

sol.

keyb.

51

2/4 | 4/4 D | 3/4 | 4/4

b.fl.

b.cl.(B♭)

vln.

vlc.

perc.

vib./ obj.

HIGH
PEGS
MID
BASS
SUB

sh.

sol.

keyb.

II, III

arco

pizz.

II (5)
III (7)

8va

8vb

tr

(continue holding the bottle)

55

b.fl.

b.cl.(B♭)

vln.

(crini battuto)

vlc.

(crini battuto)

perc.

(acoustic button)
(push down and release quickly)

vib./ obj.

HIGH
PEGS
MID
BASS
SUB

sh.

sol.

keyb.

legato sempre

legato sempre

pizz.

arco

II (5)
III (7)

put bottle down

9/16

5/4 E

♩ = 96

59

b.fl.

b.cl.(B♭)

vln.

(pizz.)

vlc.

(pizz.)

perc.

vib./obj.

HIGH PEGS MID BASS SUB

sh.

g#'' f''

sol.

keyb.

8va

63

4/4

3/4

b.fl.

b.cl.(B♭)

vln.

vlc.

perc.

vib./obj.

HIGH
PEGS
MID
BASS
SUB

sh.

sol.

keyb.

67

4/4

12/4

3/4

♩ = 60

b.fl.

b.cl.(B♭)

vln.

vlc.

perc.

vib./ obj.

HIGH
PEGS
MID
BASS
SUB

sh.

sol.

keyb.

READY / RELAXED ad lib. sempre

(pizz.)

(drum stick)
(very light)

cluster around 11 000 Hz

(change keyboard mapping)

F

71

3/4 ♩ = 72 — 5/4 — 2/4 — 5/4 — 2/4 — 3/4

picc.: PICCOLO (air sound: closed embouchure) (breath out) — (breath out - in - out) — (pizz.) — (aeolian sounds)

plast. pipe: PLASTIC PIPE CLARINET (tongue ram / slap) — (blow with slightly open mouth, only air, no pitch)

vln.: arco flaut. (flautando) (damp) — flaut. (damp) — pizz. — arco flaut.

vlc.: arco I II I etc. (ord.) — l.t. (legno tratto) (damp) — l.t. II — pizz. — (naturally fading out)

perc.: (ordinary sand paper sound) SAND PAPER — METAL SHEET — METAL OBJECT — BONGO

vib./obj.: HIGH PEGS MID BASS SUB

sh.

sol.: (fast linear pattern) — (fast irregular pattern)

keyb.: KEYBOARD MAPPING #2 (15)

79

picc.

plast. pipe

vln.

vlc.

perc.

vib./ obj.

sh.

sol.

keyb.

flaut.

IV II III etc.

(pizz.)

arco

l.t.

pizz.

CASTANET

(noise gliss.)

3/8 | 4/4 G | 2/4 | 1/4 | 4/4 | 5/8

86

picc.
"ff" mp "ff"
mp

plast. pipe
ff 3 mp ff pp "ff"

vln.
flaut. IV etc. mp
pizz. arco (bow bounce) (crini) ff mf flaut. 3 3 mp
flaut. IV etc. mp

vlc.
(pizz.) ff
arco (bow bounce) (crini) mf pizz. ff
(pizz.) p

perc.
mp f
mp mp 3 f
3 mp

vib./ obj.
HIGH PEGS MID BASS SUB
3

sh.

sol.

keyb.

93

picc.

plast. pipe

vln.

vlc.

perc.

vib./ obj.

HIGH
PEGS
MID
BASS
SUB

sh.

sol.

keyb.

(pizz.)

arco

pizz.

flaut. IV etc.

(noise gliss.)

2/4 | 3/4 | 4/4 | 3/4

♩ = 120 | ♩ = 72

98

picc.

plast. pipe

GLASS BOTTLE (blow into bottle) (pitch)

g- (sounding pitch)

(PLASTIC PIPE CLARINET)

vln.

pizz. arco pizz.

arco flaut. IV etc.

(crini battuto) (tap)

vlc.

II (5) III (7) arco pizz. arco

(tap) (crini battuto)

perc.

(frother handle on bongo) (soft motor sound)

vib./ obj.

HIGH PEGS MID BASS SUB

(acoustic button) (push down and release quickly)

sh.

sol.

(fast pitch sort pattern)

keyb.

H

♩ = 120

103

picc.

plast. pipe

vln.

vlc.

perc.

vib./ obj.

sh.

sol.

keyb.

"ff"

f

ff

p

flaut.

mp

l.t.

(damp)

III etc.

(ord.)

mf

(GLASS BOTTLE)

g-

pp

II (5)

III (7)

mp

110

picc.

plast. pipe

vln.

vlc.

perc.

vib./ obj.

HIGH PEGS MID BASS SUB

sh.

sol.

keyb.

115

picc.

plast. pipe

vln.

vlc.

perc.

vib./ obj.

sh.

sol.

keyb.

pizz.

arco

II (5)
III (7)

flaut.
IV etc.

(speed 1)

I

122

picc.

plast. pipe

vln.

vlc.

perc.

vib./ obj.

HIGH
PEGS
MID
BASS
SUB

sh.

sol.

keyb.

pizz.

arco

flaut.

l.t.

II (5)
III (7)

128

picc.

plast. pipe

vln.

vlc.

perc.

vib./ obj.

HIGH
PEGS
MID
BASS
SUB

sh.

sol.

keyb.

flaut.

l.t.

II (5)
III (7)

pizz.

arco

BOTTLE
(blow into bottle)
(pitch)

135

picc.

plast. pipe

vln.

vlc.

perc.

vib./ obj.

HIGH
PEGS
MID
BASS
SUB

sh.

sol.

keyb.

flaut.

l.t.

II (5)
III (7)

pizz.

arco

g-

141

picc.

plast. pipe

vln.

vlc.

perc.

vib./ obj.

sh.

sol.

keyb.

148

4/4 2/4 4/4

♩ = 72

picc. ff pp 20-30"

plast. pipe g- p 20-30"

vln. arco pp 20-30"

vlc. II (5) III (7) p 20-30"

perc. 20-30"

vib./ obj. HIGH PEGS MID BASS SUB 20-30"

sh. g#' 20-30"

sol.

keyb. 20-30"

J

157

2/4

2/4 ♩ = 120

♩ = 72

4/4

picc.

b.cl.(B♭)

vln.

vlc.

perc.

vib./ obj.

sh.

sol.

keyb.

mp

(air sound, open embouchure)

BASS CLARINET

"ff"

flaut.
IV etc.

8va

HIGH
PEGS
MID
BASS
SUB

3

picc.

b.cl.(B♭)

vln.

vlc.

perc.

vib./ obj.

HIGH
PEGS
MID
BASS
SUB

sh.

sol.

keyb.

"ff"

mp

flaut.

IV etc.

8va

8vb

166

picc.

b.cl.(B♭)

vln.

flaut.

flaut.
IV etc.

vlc.

8vb

perc.

vib./
obj.

HIGH
PEGS
MID
BASS
SUB

sh.

sol.

alberti pattern
speed 1 (slow)

keyb.

171

5/4 4/8 3/4 5/8 2/4 2/4

picc.

b.cl.(B♭)

vln.

vlc.

perc.

vib./obj.

HIGH
PEGS
MID
BASS
SUB

sh.

sol.

keyb.

f *mp*

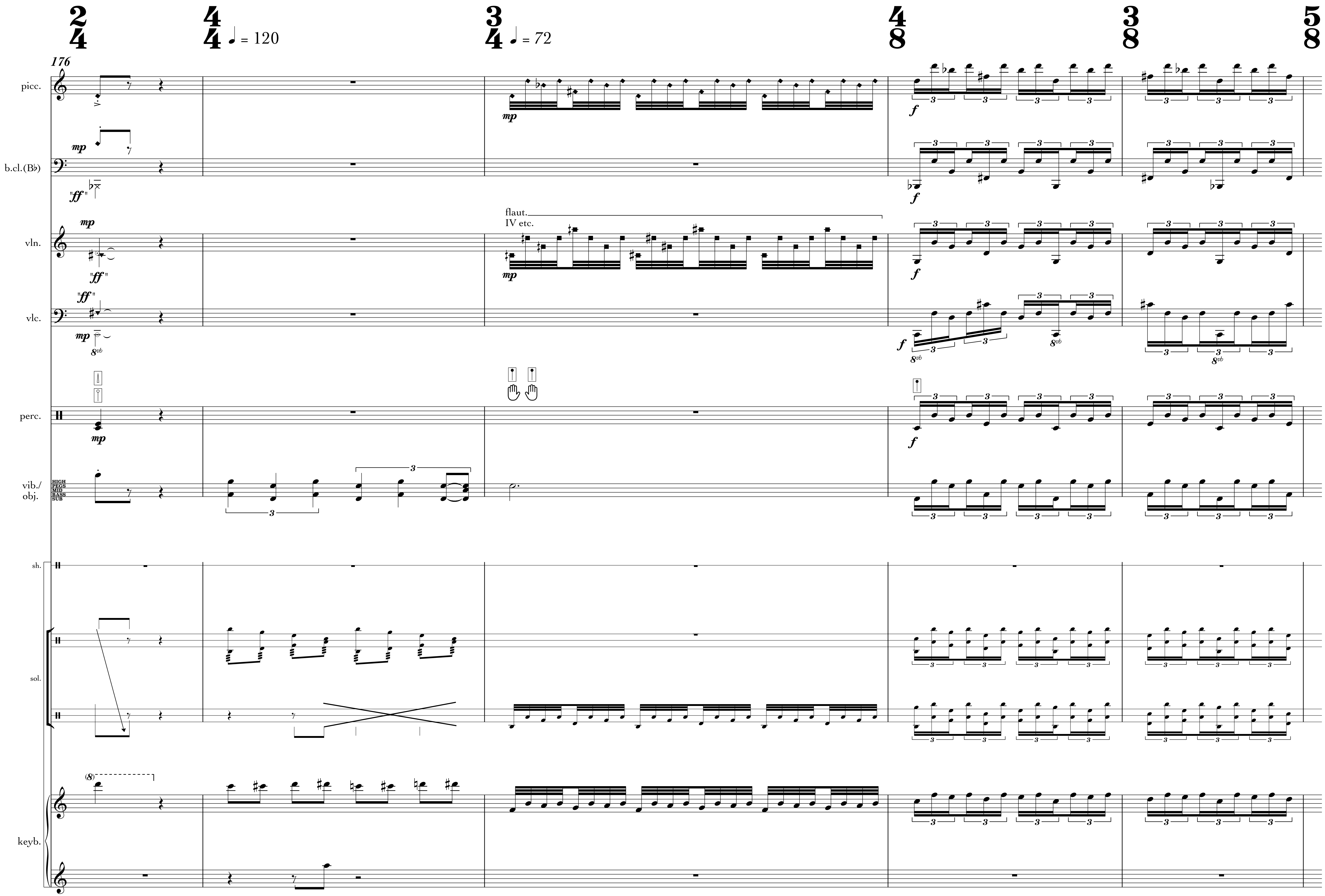
flaut.

alberti pattern
speed 2

speed 3

speed 4

8va


♩ = 120
♩ = 72
176
picc.
b.cl.(B♭)
vln.
vlc.
perc.
vib./
obj.
sh.
sol.
keyb.
flaut.
IV etc.
mp
ff
f
8vb
(8)

181

L

♩. = 120

picc.

b.cl.(B♭)

vln.

flaut.

mp

vlc.

perc.

vib./ obj.

HIGH
PEGS
MID
BASS
SUB

3

sh.

sol.

alberti pattern
speed 3

speed 4

speed 5

speed 6

speed 7

speed 8

speed 9

keyb.

8va

191

BASS FLUTE
multiphonic

PLASTIC PIPE CLARINET

overpressure

(whisk on metal sheet)

(fast pitch sort pattern)

picc.
b.cl.(B♭)
vln.
vlc.
perc.
vib./obj.
HIGH
PEGS
MID
BASS
SUB
sh.
sol.
keyb.

1/4 4/4 1/4 3/4 4/4 2/4 4/4 3/8 5/8

200

b.fl.

multiphonic

ff

plast. pipe

ff

vln.

overpressure

ff

vlc.

8vb

ff

perc.

vib./ obj.

HIGH
LOGS
MID
BASS
SUB

sh.

sol.

keyb.

8va

5/8 2/4 5/8 3/8 5/8 2/4

solenoid pattern played 20 times altogether (approx. 24 "),
count repetitions and synchronize endings

4/4

209

b.fl.

multiphonic

ff

plast. pipe

ff

vln.

overpressure

ff

vlc.

8vb

ff

perc.

vib./ obj.

HIGH
PEGS
MID
BASS
SUB

sh.

sol.

pattern played 20 times altogether

18x

18x

keyb.

8va

8vb (change keyboard mapping)

M

♩ = 60

216

(aeolian sound)
mp sempre

b.fl.

key click: right hand
"***ff***" sempre

(air sound, open embouchure) ***mp*** sempre

BASS CLARINET

b.cl.(B♭)

key click:
use several fingers to
produce much sound
"***ff***" sempre

vln.

(crini battuto) ***mp*** sempre (l.v. sempre)

(tap) (l.v. sempre)
"***ff***" sempre

vlc.

"***ff***" sempre
(tap) (l.v. sempre)

(crini battuto) (l.v. sempre)
8vb
mp sempre

BONGO
METAL SHEET

perc.

mp sempre
(acoustic button)
(push down and release quickly)

vib./obj.

HIGH
PEGS
MID
BASS
SUB

sh.

solenoids slightly unsynchrinized

(solenoids more or less unsynchrinized throughout the piece)

sol.

solenoids slightly unsynchrinized

(solenoids more or less unsynchrinized throughout the piece)

KEYBOARD MAPPING #3

keyb.

222

b.fl.

b.cl.(Bb)

vln.

vlc.

perc.

vib./
obj.

HIGH
PEGS
MID
BASS
SUB

sh.

sol.

keyb.

228

b.fl.

b.cl.(B♭)

vln.

vlc.

perc.

vib./ obj.

HIGH
PEGS
MID
BASS
SUB

sh.

sol.

keyb.

(two impulses in each solenoid)

(three impulses in each solenoid)

234

b.fl.

b.cl.(Bb)

vln.

vlc.

perc.

vib./
obj.

HIGH
PEGS
MID
BASS
SUB

sh.

sol.

keyb.

N

240

b.fl.

(trill with right hand fingers)

b.cl.(B♭)

(trill with several fingers)

vln.

(bow bounce)

vlc.

(bow bounce)

perc.

vib./ obj.

HIGH
PEGS
MID
BASS
SUB

(push down) (release)

sh.

(several impulses in each solenoid, ritardando pattern)

sol.

keyb.

246

b.fl.

b.cl.(B♭)

vln.

vlc.

perc.

vib./ obj.

HIGH
PEGS
MID
BASS
SUB

sh.

sol.

keyb.

O

252

b.fl.

b.cl.(B♭)

vln.

vlc.

perc.

vib./
obj.

HIGH
PEGS
MID
BASS
SUB

sh.

sol.

keyb.

256

b.fl.

b.cl.(B♭)

vln.

vlc.

perc.

vib./
obj.

HIGH
PEGS
MID
BASS
SUB

sh.

sol.

keyb.

P

260

b.fl.

b.cl.(B♭)

vln.

vlc.

perc.

vib./
obj.

HIGH
PEGS
MID
BASS
SUB

sh.

sol.

keyb.

263

b.fl.

b.cl.(B♭)

vln.

vlc.

perc.

vib./
obj.

HIGH
PEGS
MID
BASS
SUB

sh.

sol.

keyb.

266

b.fl.

b.cl.(B♭)

vln.

vlc.

perc.

vib./ obj.

HIGH
PEGS
MID
BASS
SUB

sh.

sol.

keyb.

269

b.fl.

b.cl.(B♭)

vln.

vlc.

perc.

vib./ obj.

HIGH
PEGS
MID
BASS
SUB

sh.

sol.

keyb.

272

b.fl.

b.cl.(B♭)

vln.

vlc.

perc.

vib./
obj.

HIGH
PEGS
MID
BASS
SUB

sh.

sol.

keyb.

august 2017