



Noise Box



For Saxophone and Live Electronics

By Austin Engelhardt



2023



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Duration: Indeterminate

Program Notes

Noise Box is a piece about change and exploring the limitless beauty of the saxophone. It takes place over three movements, each of which is meant to highlight a different aspect of the saxophone. Through the electronics, the subtle characteristics of the saxophone are illuminated and elevated. A new sonic world is created to surround the instrument.

Movement I: Singing

-*Singing* is the movement based around the idea of the saxophone producing multiple voices. The saxophone has this mystical ability to break free of itself and become its own choir. I wanted to create a platform to allow the saxophonist to show this unique ability and to allow the saxophone to sing in the way that makes it such a special instrument. This is achieved through large leaps, rapid arpeggiation, multiphonics, and the saxophonist using their own voice in combination with playing.

Movement II: Breathing

-*Breathing* is a movement based around the most integral of all relationships between the saxophonist and their instrument: breathing. The movement is quiet and short, serving as a platform to show the subtlety of the instrument. Through small changes in the amount of air added and taken from a note, different ways of playing notes, playing with too much air, and playing with no air, the music allows the creation a truly intimate moment with their sound.

Movement III: Thinking

-*Thinking* is the most free, while also being the most constricting point of the piece. The performer is given only five different finger positions to play, but allowed the utmost freedom in what to do with them. It is a moment of music that pushes the player to truly think outside the box.

Noise Box is dedicated to
Don-Paul Kahl

Electronics

Noise Box is a piece composed for Alto Saxophone and live electronics. The electronic component of the work centers around live audio manipulation controlled from a MAX/MSP patch. As a result, two performers will be needed for the piece- one saxophonist and one operating the electronics.

Equipment Needed:

- MAX/MSP Patch (contact the composer for the patch)
- Interface with three inputs and a stereo output
- One microphone (Must be input into channel #1 on the interface)
- Two Contact microphones (Must be input into channel #3 and channel #4 on the interface)
- Four small tactile transducers
- Four cardboard boxes

The MAX/MSP Patch:

All instructions on how to operate the patch will be included in the patch itself. The composer may be contacted for further assistance with operation, or to operate the patch, as needed

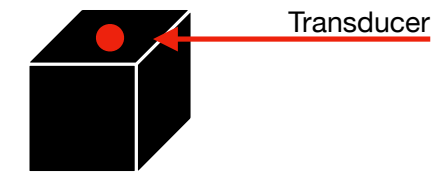
The Boxes:

The electronics for the work center around four cardboard boxes. All of which will have tactile transducers attached to them. Two of these will additionally have contact mics attached as well. The signal from the saxophonist's microphone will be sent to and amplified through the boxes via the transducers. This sound, of the saxophone filtered through the cardboard, will then be sent back to the MAX patch via the contact mics and mixed into the saxophone's signal live.

The selection of the boxes is left to the discretion of the performers, however, regardless of the boxes chosen a few holes should be cut into the boxes to aid in the sound production. The boxes will inherently add a visual quality to the performance and it is encouraged that the players take time beforehand to customize the boxes to add an aesthetic quality to them. Examples of customizations include box placement on stage, painting them, adding lights inside, and varying/aligning the size selection. However, caution should be exercised, as loose materials attached to the box could vibrate and cause a dramatic increase in noise produced from the box

The Transducers:

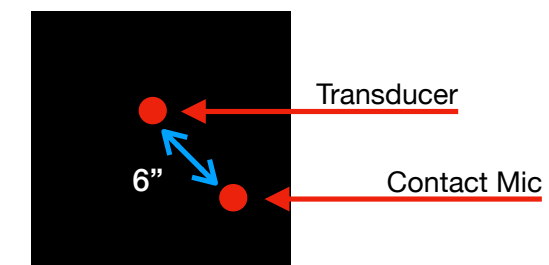
The transducer should be secured to the top of the box, preferably on the inside and as close to the center as possible (as shown below).



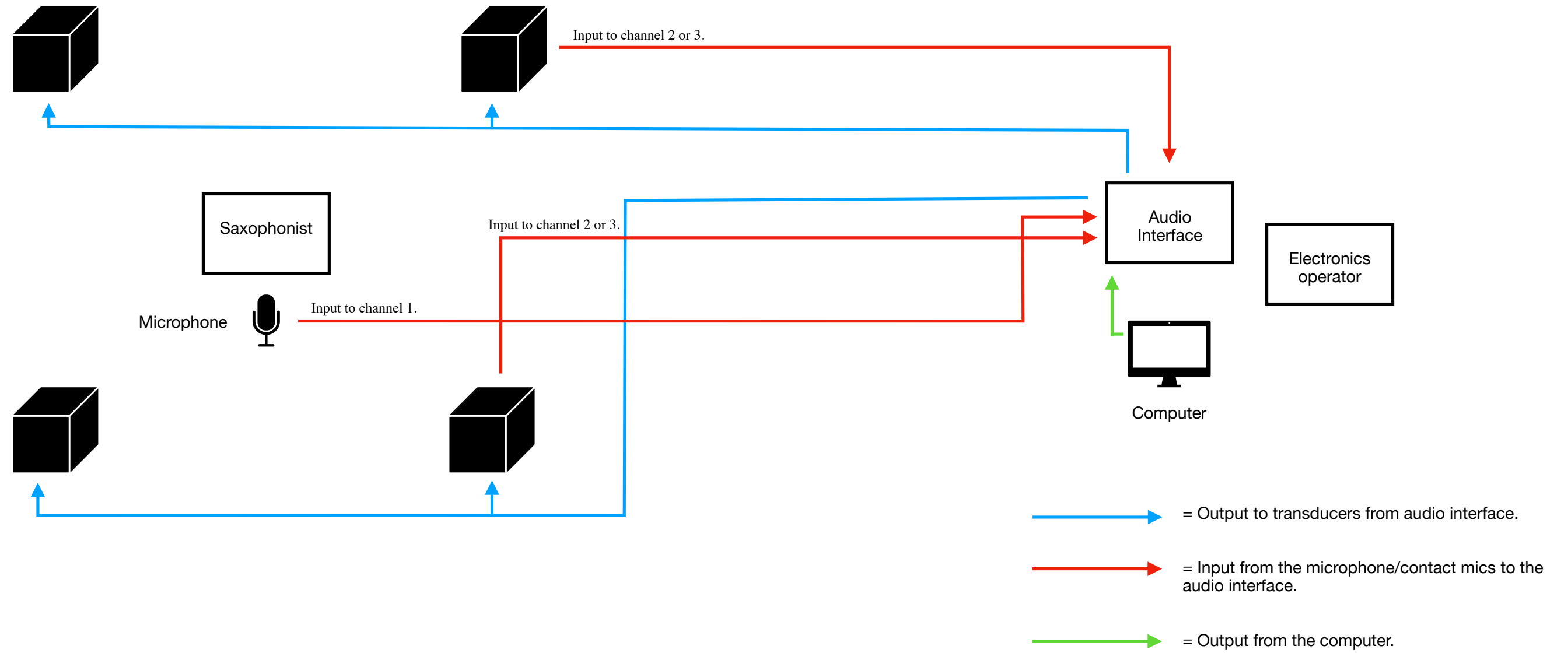
While four transducers are called for in the piece, the work still utilizes a standard stereo output with two transducers for the left output and two transducers for the right output signal (see general setup diagram).

The Contact Mics:

Placement of the contact mics is similar to that of the transducers. They should be placed on the top of the box, preferably on the inside. However, at least 6 inches of distance should be between the transducer and the contact mic (as shown below).



GENERAL SETUP DIAGRAM



Fingering Diagrams

-All fingerings in the piece are taken from *The Techniques of Saxophone Playing*¹ by Marcus Weiss.

-Movement I:

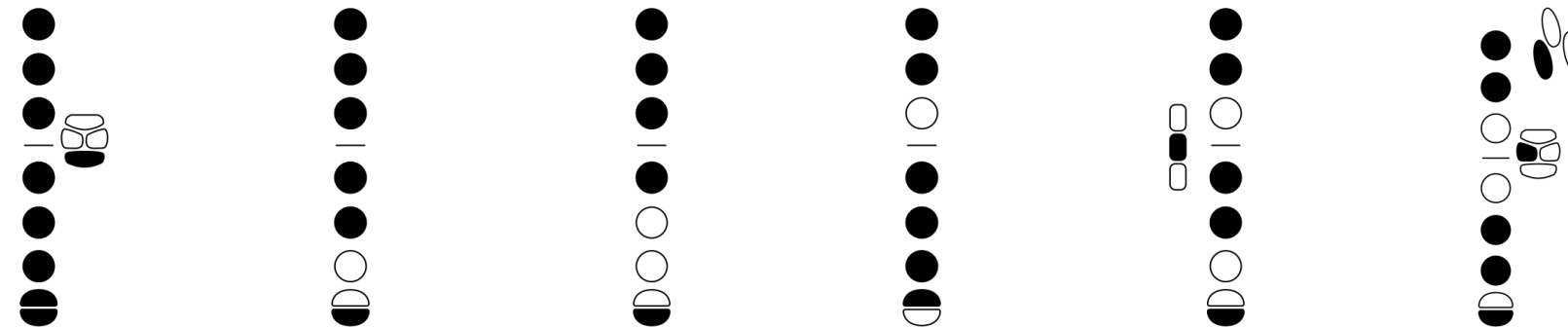
-All fingering diagrams in Movement I are for multiphonic fingerings. Multiphonic fingerings are suggestions and should they not speak well on your instrument, alternative fingerings may be used. Alternative fingerings for multiphonics should be utilized as long as they are based off the same fundamental pitch notated.

-Movement III:

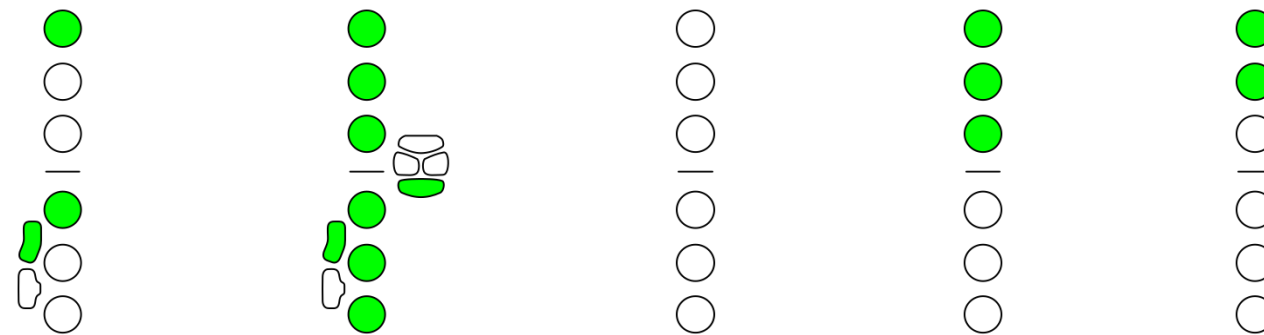
-Fingering diagram color will change from page to page in movement III.

-Fingering diagrams in Movement III are not necessarily multiphonic fingerings. Instead of traditional notation, in this movement the player is only provided with these depicted fingerings. They have the freedom to use any sounds that may be produced from the fingerings.

Movement I Fingerings:



Movement III Fingerings:



¹ Weiss, Marcus, and Giorgio Netti. *The Techniques of Saxophone Playing* = Die Spieltechnik Des Saxophons. Bärenreiter, 2015.

Performance notes

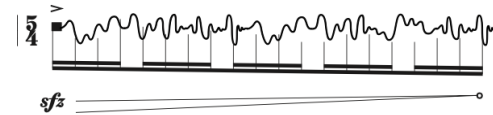
Movement I (Singing):

Microtonal accidentals:

♯ - 1/4th Sharp ♯ - 3/4th Sharp

♭ - 1/4th Flat ♭ - 3/4th Flat

-Breath and key flutters: Blow air violently through the instrument to produce breath tones while rapidly fingering the keys. No specific pitch is meant to be hit, the gesture should be as fast as possible, but only last as long as notated. The whole gesture does not necessarily need to be under one breath, however, the initial breath should be the strongest.



-Repeats: When a repeat appears, there will be either have an indication telling how many times the passage is to be repeated, or are marked “repeat ad lib.” In this case, the performer is free to decide how many times the passage is repeated. Dynamics are to be repeated each time as well.

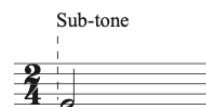


Example of repeat ad lib.



Example of a repeat with an indicated amount.

-Sub-tones: Sub-tones are utilized throughout the movement. The sub-tone effect only applies to the indicated note.



-Multiphonics: When multiphonics are used, a suggested fingering will appear above the measure.



-Dotted slurs: Dotted slurs indicated phrasings that do not occur under the same breathe.



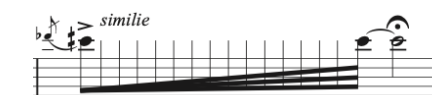
-Singing while playing: Notes appearing in parenthesis are to be sung while the notated pedal tone is being played simultaneously. The indicated dynamic applies to both notes.



-Resonance trills: Play the indicated note and trill with the right hand.



-Feathered beaming: Feathered beams are gestural and should be exaggerated. They do not need to conform to the notated meter.



Performance notes

Movement II (Breathing):

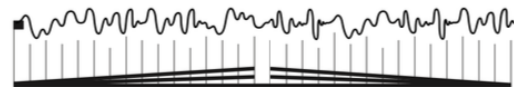
-Air-tones: Square note heads indicate the use of air-tones. Air-tones should still reflect the notated pitch and an approximately 50/50 split between pitch and air is the most desirable result.



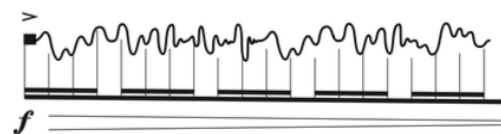
-Shift to air-tones: Slowly shift from regular playing to an air-tone over the duration of the indicated note. This gesture only applies to the note directly underneath the symbol.



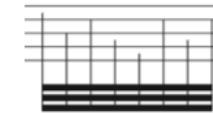
-Breath and key flutters (Feathered Beaming): Blow air violently through the instrument to produce breath tones while rapidly fingering the keys. No specific pitch is meant to be hit and the speed of the gesture should follow the contour of the feathered beaming. Feathered beams are gestural and do not need to conform to any meter. The whole gesture does not necessarily need to be under one breath.



-Breath and key flutters: Blow air violently through the instrument to produce breath tones while rapidly fingering the keys. No specific pitch is meant to be hit, gesture should be as fast as possible, but only last as long as notated. The whole gesture does not necessarily need to be under one breathe, however, the initial breath should be the strongest.



-Key-clicks: Stems with no note heads indicate key-clicks. Key-clicks should always be performed with good volume and as fast as possible but last only as long as notated.



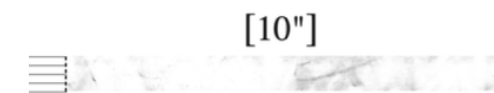
-Slap-tongue: A “+” symbol above a note indicates that that note should be performed as a slap-tongue. Slap-tongues should still reflect the notated pitch.



-Feathered beaming: Feathered beams are gestural and should be exaggerated. They do not need to conform to the notated meter.



-Improvisation: When gradient lines appear, the performer is to improvise connecting material to link the two parts. Unlike the third movement, the performer is not restricted to any predetermined fingerings, however, the rules on improving over gradients described in the third movement still apply here. The lighter the gradient line, the softer and less intense the improvisation should be. The darker the line, the more intense and loud the improvisation should be.



The duration of the improvisation is notated above each gradient in seconds. In the example above, the improvisation shown is to last for 10 seconds.

Performance notes

Movement III (Thinking):

-Movement III of this work is a movement based around a guided improvisation. Provided with the score is the graphic score and four accompanying pages. Each page has a unique set of differently colored saxophone fingering diagrams on them to be used with Movement III. These should be printed out onto transparency sheets to be overlaid on top of the graphic score. A demonstration of how this should look can be seen by following [this link](#). For the performance, the player should select 1-2 of the fingering sheets to play. The pages may be played in any order.

-The piece is read from left to right, starting at the top. After the player has finished performing a line, they will move to the line beneath.

-**Fingerings:** Depicted on each transparency sheet is a different variation of a set of five fingerings, all four sheets are derived from the same set of five fingerings. During the performance the player has access to the peripheral keys of the saxophone (such as the octave key, or side keys), however, the keys indicated by the fingering chart must remain depressed and may not be changed until a new fingering is given. This is an essential limitation of the work.



Depicted above is an example of reading the fingering diagrams. The player will hold down and improvise using the first fingering and not change until the next fingering is reached in the score.

-**The Gradient:** The Graphic score consists of four gradient lines. The darkness of the line dictates the intensity of the improvisation. This means the whiter and wispier the line, the more quiet and delicate the playing. The darker the line, the louder and more violent the improvisation. The performer is encouraged to employ a wide variety of techniques, both extended and traditional, in an effort to realize the gradient lines. The performer also has the option to utilize silence whenever appropriate.



quieter ————— -loud— ————— quiet— ————— loud— ————— quieter

Depicted above is a rough example of how the line can be read.

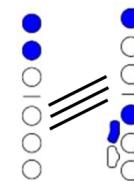
-**Time:** Time in the piece is measured by the small tic marks on the transparency sheet. Each mark represents about 10 seconds of time (example shown below). One sheet should last approximately four minutes, give or take.



-**Repeats:** When a repeat is presented in this movement, the performer should repeat the line they just finished. Only one repeat of the line should be performed. The repeated passage does not need to be an exact replica but should reflect what the performer has already played for the given line.



-**Tremolos:** When a tremolo is indicated, the performer should oscillate between the two depicted fingerings. The speed of the oscillation is left to the discretion of the performer and can speed up or slow down as the player sees fit.



Noise Box

Mvt. I: Singing

Restrained ♩ = 72

*Staccato notes should be played as secco as possible.

*Breath and key flutters: blow air violently through the instrument to produce breath tones while rapidly fingering the keys. No specific pitch is meant to be hit, gesture should be as fast as possible, but only last as long as notated.

The score is written for Alto Saxophone (A. Sx.) and Alto Sax. It consists of five systems of music, each with dynamic markings and performance instructions. The first system (measures 1-8) features a mix of staccato notes and breath/key flutters. The second system (measures 9-13) includes a sub-tone and a triplet. The third system (measures 14-19) has a sub-tone and a 'Repeat ad lib.' section. The fourth system (measures 20-25) includes a glissando and a multiphonic section. The fifth system (measures 26-32) features a sub-tone and a multiphonic section. The score includes various dynamic markings such as *mp*, *p*, *sfz*, *mf*, *f*, *ppp*, *ff*, and *p cresc.* It also includes performance instructions like 'Staccato notes should be played as secco as possible.', 'Breath and key flutters: blow air violently through the instrument to produce breath tones while rapidly fingering the keys.', 'Sub-tone', 'Repeat ad lib.', and '*Multiphonic should emerge from fundamental pitch.' The score is written in treble clef with various time signatures (2/4, 3/4, 4/4, 5/4) and includes fingering numbers (5, 6) and articulation marks (accents, slurs).

*Sing notes in parentheses.

*Breathe as necessary but keep energy high.

A. Sx. 33

Sub-tone
ppp
sfz
f

A. Sx. 40

Repeat ad lib.
x2

A. Sx. 44

flz.
sub. p
ff
Repeat ad lib. ord.
x2

A. Sx. 47

flz.
Repeat ad lib. ord.
sffz
f Heavy.
7
ff

A. Sx. 51

ord.
7
x3
f

A. Sx. 54

sfz
sffz
mp
pp

*Play the indicated note and trill with the right hand.

A. Sx. 60

mp *ff* *mf* (Res. Trill)

A. Sx. 67

mf *ff* *pp cresc. poco a poco*

*Feathered beaming is gestural, no specific amount of notes should be played.

A. Sx. 74

fff sub. p *fff* *similie*

Delicate but with weight ♩ = 60

A. Sx. 78

ppp *p* *mf* *mp*

A. Sx. 86

p *mf* *p* *mf* *f* *mp* *sfz*

*Sing or hum notes, no saxophone.

A. Sx. 96

sfz *ppp* *ppp* *PPP Longing, somber.*

Noise Box

Mvt. II: Breathing

Quiet, Thoughtful ♩ = 40-60

*Air-tones: 50/50 split between air and pitch

*Breath and key flutters: blow air violently through the instrument to produce breath tones while rapidly fingering the keys. No specific pitch is meant to be hit, gesture should follow contour depicted by the beaming.

*Key-clicks: No air, as loud as possible.

Alto Sax

9 [5"]

A. Sx.

16 [5"]

A. Sx.

22

A. Sx.

28 [10"]

A. Sx.

34 [10"]

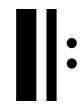
A. Sx.



Noise Box

Mvt. III: Thinking (The Blue Variation)

Austin Engelhardt



○○○○○○○



●●○○○○○



●●○○○○○

○○○○○○○



○○○○○○○
≡○○○○○



○○○○○○○



●○○○○○



●●○○○○○
≡○○○○○

○○○○○○○



●○○○○○
≡○○○○○



○○○○○○○
≡○○○○○



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≡○○○○○

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≡○○○○○

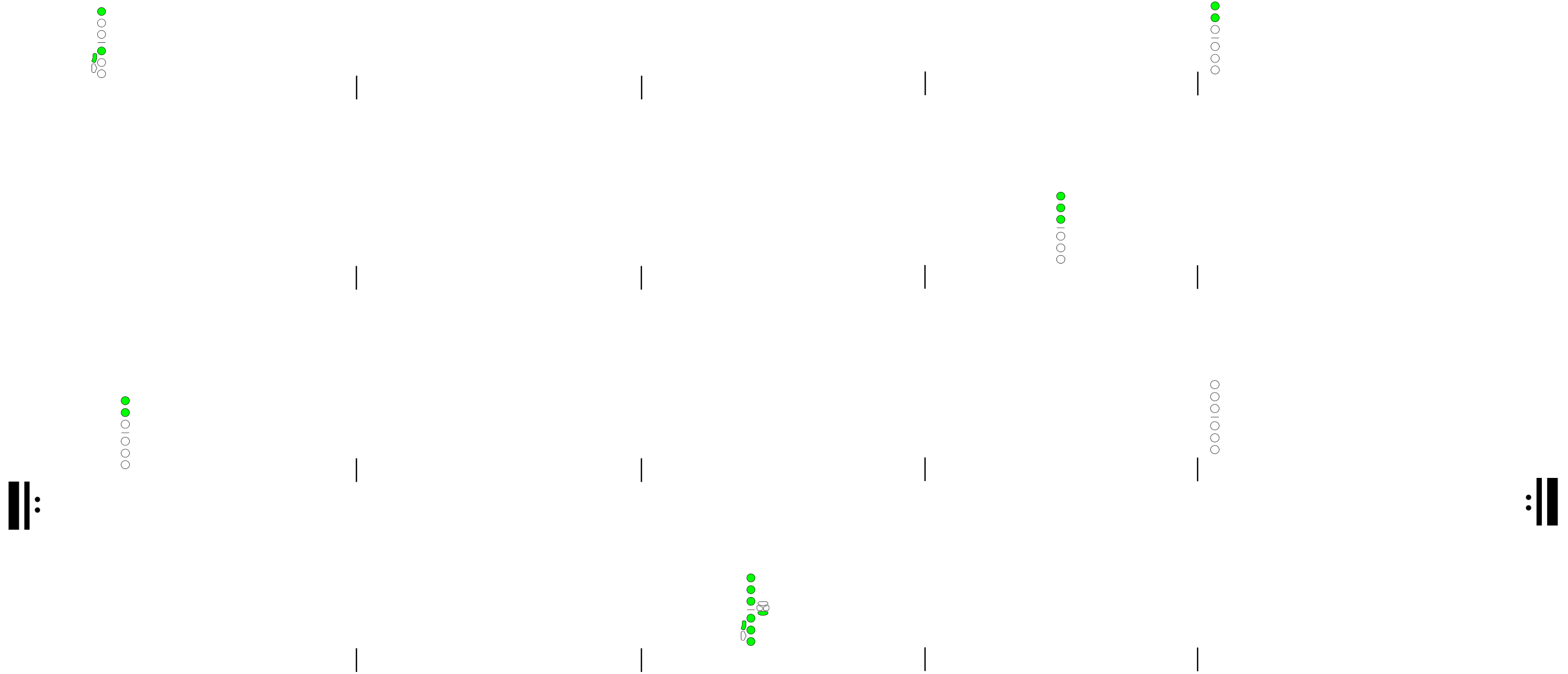
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Noise Box

Mvt. III: Thinking (The Green Variation)

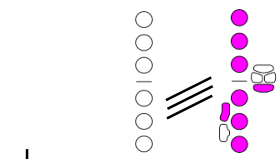
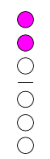
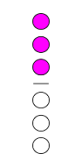
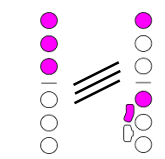
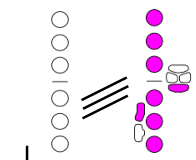
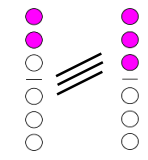
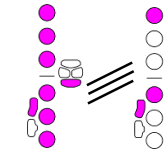
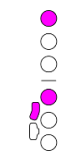
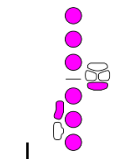
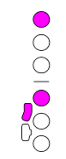
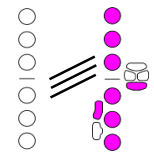
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Noise Box

Mvt. III: Thinking (The Purple Variation)

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Noise Box

Mvt. III: Thinking (The Red Variation)

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