



Lucy McKnight

**infested**

for violin, cello, piano,  
and robot bugs

*dedicated to my sibling, Milo, who helped wrangle the bugs*

ca. 8'

2019

# Performance Notes

## Piano Preparations

### Putty inside the piano:

Place a small amount of blue-tack putty on the 3 strings of each of the following notes. Putty should be placed on the specified partials.

Partial:	2nd	3rd	5th	2nd	2nd	2nd	2nd	2nd
Sounding pitch:	Gb	F#	E	Db	D	Eb	E	F



On the following note, place a small amount of blue-tack putty on 2 of the 3 strings (middle and right) with just a bit of the putty sticking out to touch the left string. This should create a sound similar to the other putty-prepared notes, but the slight touching of the 3rd string should result in a small metallic rattling and a minor 2nd dyad.

Partial: 5th

Sounding pitch: A



## Noteheads

normal playing  
on keyboard



place drone bug



slam down THB on  
lowest piano strings



vibrate string with  
rubber head of bug



with putty on finger,  
tap string



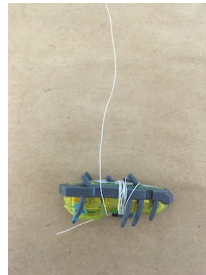
# Performance Notes

## Robot Bugs

You will be using 8 HEXBUG Nano toys, which are small robot bugs that vibrate to move. Using plastic tubing and cardboard, I built cages to keep each bug vibrating in place to create a drone, or held sound.

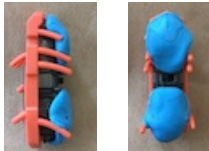
### Drone bug 1, 2, 3, and 4

Each of these four bugs has an individual cage with a hole drilled in the middle. Securely tie a thread around the middle of the bug and thread the string through the hole.



#### Drone Bug 1

Stick a small amount of putty on both exposed plastic parts of the bug's belly.

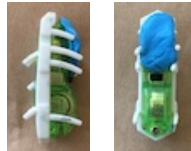


Place on the part of the string closest to keyboard (before the dampers)

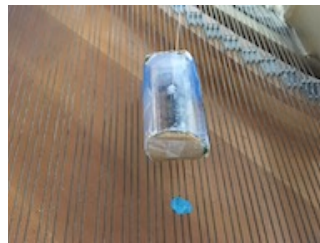


#### Drone Bug 2

Stick a small amount of putty on the smaller exposed plastic part of the bug's belly.



Place slightly north of the string's putty preparation

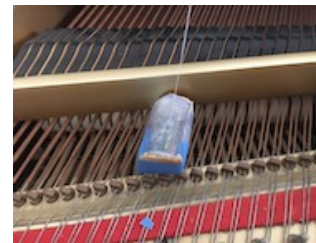


#### Drone Bug 3

No putty, leave bug as is.



Place on the part of the string closest to keyboard (before the dampers)



#### Drone Bug 4

No putty, leave bug as is.



Place perpendicular to the strings, to vibrate a small cluster of pitches



# Performance Notes

## Triple Helicopter Bugs (THB)

Tape two pencils together to create an approximately foot-long stick.

Use the thread attached to each bug through the hole in the cages' roofs to fasten the bugs to the stick such that the bugs can reach the piano strings when the THB is placed in the piano.

For extra security, use strong tape to keep the threads and cages attached to the stick.



### 1 bug

The remaining bug should be kept cage-less and putty-less to be used to vibrate specified strings in the melody on pg. 8.

## Violin and Cello:

Some parts of this piece involve playing with a “bug bow” - a cheap child violin's size bow with a HEXBUG placed in between the bow's hair and wood, at the tip of the bow, perpendicularly. Turn the bug on right before starting the piece and place it nearby on something similar to a percussionist's mallet pad so the vibrating is inaudible.



# Performance Notes

-----> gradually change from one technique to the next

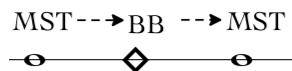
BB - bow on the bridge to create an airy noise (no pitch)

MST - multo sul tasto, play about 3-5cm above fingerboard

ST - sul tasto, play slightly over fingerboard

SP - sul ponticello, play close to the bridge

mute strings with left hand



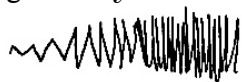
create a continuous airy sound, like breathing, by slowly bowing any string lightly from multo sul tasto to bowing on the bridge and back

VS  
trem.



VS trem. (Vertical Scratch tremolo) — unpitched scratch sound created by rapidly moving bow hair (near the frog) up and down (sul tasto to sul pont) on any string (muted by left hand)

slowly crank bow hair at the frog  
gradually becoming VS trem



using the bow hair at the frog as a fixed axis, crank the bow to create scratch sounds like a door creaking open and gradually accelerate to become VS trem.

VS trem and HS trem ad. lib.



HS trem. (Horizontal Scratch tremolo) — unpitched scratch sound created by rapidly bowing normal up and down bows with overpressure on any string (muted by left hand)

VS trem. and HS trem ad. lib. — constant scratch sound changing between VS trem and HS trem at your own liberty

# infested

Lucy McKnight

**1**

ca. 30" long, seamless staggered bow changes

ca. 15" gradually add grit/scratch (no pitch)

ca. 5" VS (vertical scratch) trem.

dampen strings with left hand  
MST ---> BB ---> MST

Violin

*p* *mf* *ff*

ca. 30" long, seamless staggered bow changes

ca. 15" gradually add grit/scratch (no pitch)

ca. 5" VS (vertical scratch) trem.

dampen strings with left hand  
MST ---> BB ---> MST

Violoncello

*p* *mf* *ff*

**1**

ca. 45"

ca. 5"

pedal down throughout unless otherwise indicated

ca. 2" place drone bug 1

Ped.

The score is divided into three parts. The Violin and Violoncello parts are identical in notation and performance instructions. They begin with a dynamic of *p* and a tempo of ca. 30" for "long, seamless staggered bow changes". This is followed by a section of ca. 15" where they "gradually add grit/scratch (no pitch)", with dynamics increasing to *mf*. The final section is ca. 5" of "VS (vertical scratch) trem.", with dynamics reaching *ff*. The Piano part consists of two staves. The upper staff has a treble clef and the lower staff has a bass clef. The instruction "pedal down throughout unless otherwise indicated" spans both staves. In the final ca. 5" section, there is a bracketed area labeled "ca. 2" place drone bug 1" on the bass staff, with a corresponding "Ped." instruction below it.

**2**

**Vln.**

ca. 10" switch to vibrating bug bow

ca. 30" Dampen the E string halfway down the fingerboard and slowly move the wooden bow tip back and forth (ST to SP) along the string

ca. 5" On the dampened E string, slowly crank bow hair at the frog (no pitch) gradually becoming VS trem.

*p*

**Vcl.**

ca. 8" switch to vibrating bug bow

ca. 30" Place the wooden bow tip on the fabric-bound part of the C string (below bridge) and slowly move up and down vertically along the fabric

ca. 7" Dampen C string. Slowly crank bow hair at the frog on the string (no pitch) gradually becoming VS trem.

*p*

**2**

**Pno.**

ca. 45" Glis. slowly along the harmonics of the vibrating string ad. lib

The score consists of three staves: Violin (Vln.), Viola (Vcl.), and Piano (Pno.). Each staff has a box with the number '2' at the beginning. The Violin and Viola parts include specific performance instructions and diagrams of bowing techniques. The Piano part includes a glissando instruction. A thick black line at the bottom of the page represents a timeline or recording indicator.

infested - McKnight

3 ♩ = ca. 60  
accel. . . . .

3

*rubato*  
(does not need to be perfectly together with pno)

Vln.

ca. 40" Move between VS trem and HS trem ad. lib. to create constant scratch sound Use any and all strings

ca. 10" switch to normal bow

ST -----> SP

*f*

*p* -----> *mf*

repeat ad. lib.

Vcl.

ca. 40" Move between VS trem and HS trem ad. lib. to create constant scratch sound Use any and all strings

ca. 10" switch to normal bow

*f*

3 ♩ = ca. 60  
accel. . . . .

*rubato*  
(does not need to be perfectly together with vln)

Pno.

ca. 40" place drone bug 2

ca. 10"

*p* -----> *mf*



gradually lower pedal -----> *Red.*



infested - McKnight

4

4

ca. 45"

Using any part of your instrument's range, improvise a constant, nauseating pool of sound by microtonally bending in and out of unison with the piano and any overtones you hear. In your own time, repeatedly swell the intensity (by increasing then decreasing, in any combination: volume, pressure/scratch, timbre, tremolo/speed, vibrato, harmonics, and any other parameter you can think of).

Vln.

*f* [continuous intensity swells ad. lib.]

increase intensity simultaneously with vcl. ca. 5"

6/4

ca. 45"

Using any part of your instrument's range, improvise a constant, nauseating pool of sound by microtonally bending in and out of unison with the piano and any overtones you hear. In your own time, repeatedly swell the intensity (by increasing then decreasing, in any combination: volume, pressure/scratch, timbre, tremolo/speed, vibrato, harmonics, and any other parameter you can think of).

Vcl.

*f* [continuous intensity swells ad. lib.]

increase intensity simultaneously with vln. ca. 5"

6/4

4

ca. 45"

turn on triple helicopter bugs (THB) to prepare for next section

ca. 3"  
place drone bug 4

Pno.

place drone bug 3

6/4

(Ped.)

5 ♩ = ca. 60, boiling over

With left-hand dampening a doublestop on lowest strings, gradually glis. from nut to end of fingerboard.  
The desired sound is scratchy and mostly indiscernible (but audibly rising) pitch.

Vln.

Violin part notation. It starts with a 6/4 time signature, a treble clef, and a forte (f) dynamic. The first measure shows a doublestop with fingerings III and IV. The second measure has a slur over two notes. The third measure is a whole rest. The fourth measure changes to a 5/4 time signature and features a doublestop with a glissando line above it. The final measure is a double bar line followed by five eighth notes, each with a glissando line above it.

With left-hand dampening a doublestop on highest strings, gradually glis. from nut to end of fingerboard.  
The desired sound is scratchy and mostly indiscernible (but audibly rising) pitch.

Vcl.

Violoncello part notation. It starts with a 6/4 time signature, a treble clef, and a forte (f) dynamic. The first measure shows a doublestop with fingerings I and II. The second measure has a slur over two notes. The third measure is a whole rest. The fourth measure changes to a 5/4 time signature and features a doublestop with a glissando line above it. The final measure is a double bar line followed by five eighth notes, each with a glissando line above it.

5 ♩ = ca. 60, boiling over

Pno.

Piano part notation. It features a grand staff with treble and bass clefs. Above the treble clef, there are two thick horizontal lines with a square symbol above them. Above the bass clef, there are two thick horizontal lines with square symbols above them. The text "slam down THB on lowest piano strings" is written between the staves. The bottom staff has a forte (f) dynamic and a series of chords with glissando lines. Below the staff, there are markings: (Ped.) \*, Ped., \*, Ped. \*, Ped., \*, Ped. \*, Ped. \*, Ped. \*, Ped. \*, Ped. \*

**6** explosive

Vln. *ff*

ca. 30" Create continuous, visually large\*, and vigorous gestures

ca. 30" Gradually decrease intensity and density of gestures

ca. 5"

Vc. *ff*

ca. 30" Create continuous, visually large\*, and vigorous gestures

ca. 35" Continue gestures. Maintain visual and sonic intensity.

6/4

**6** explosive

Pno. *ff*

ca. 30" Quickly set aside THB. Then, using two mallets, violently hit the piano strings in erratic rhythm over the entire range. Avoid disturbing the drone bugs.

ca. 30" Relocate a mallet so that both are in one hand. Continue hitting strings, gradually decreasing intensity and density to nothing. Use free hand to gradually remove and turn off drone bugs.

ca. 5"

place drone bug 1 perpendicularly on highest cluster of strings

remove drone bug 4

remove drone bug 2

remove drone bug 1

remove drone bug 3

turn off THB

6/4

7 ♩ = ca. 60, recovering

slow timbral change throughout melody

[ ST ----- ad. lib -----> SP -----> ST ]

Vln. *p* *glis.* 3

Vc. *ff*

Gradually decrease sonic intensity by decreasing finger and bow pressure. Maintain the same visual intensity.

7 ♩ = ca. 60, recovering

Vln. *rit.*

Vc.

Pno. *rit.*

infested - McKnight

8

ca. 45"-60"

*slowly and freely, follow pianist's lead*

[ST ---> SP ---> ST]

Vln.

*pp*

ca. 45"-60"

Arrive at quietest possible sonic level and gradually decrease visual intensity until fully still and silent

Vc.

*pp*

ca. 45"-60"



holding a vibrating bug lightly between thumb and index fingers, vibrate against specified string with the bug's rubber head

with putty on finger, tap corresponding string

repeat ad. lib

Pno.

*p*

*p*



8 ♩ = ca. 54, numb and floating

use vibrating bug bow

bow bridge

Vln.

*p*

use vibrating bug bow  
bow the wood on side of cello lightly for airy sound

Vc.

*p*

8 ♩ = ca. 54, numb and floating



Pno.

*rubato p*

infested - McKnight

Musical score for the first system, featuring Violin I (Vln.), Violin II (Vc.), and Piano (Pno.) parts. The Violin parts consist of two staves with rhythmic patterns of eighth notes and quarter notes, some marked with 'V' and 'x'. The Piano part is in the treble clef, featuring a melodic line with a triplet of eighth notes. A double bar line is present after the first measure of each staff.

Musical score for the second system, featuring Violin I (Vln.), Violin II (Vc.), and Piano (Pno.) parts. The Violin parts are mostly silent, with a final measure containing a half note. The Piano part continues with the melodic line from the first system, ending with a final drone note. Performance instructions include: "pick up the final drone bug and slowly bring it to your chest", "ca. 5''", "bug in cage vibrating against your chest (slightly audible)", "repeat ad. lib.", "Turn off bug bow", and "Turn off drone bug". A double bar line is present after the first measure of each staff.