Spectral Breathing Apparatus

for solo wind instrument (w/o mouthpiece)
& electronics

Stephen de Filippo | 2022

vers. 6/3/22

Spectral Breathing Apparatus

Stephen de Filippo | 2022

for solo wind instrument (w/o mouthpiece) & electronics

Duration: 16'00"

-

for Niamh Dell

Performance Notes

General

- This work can be performed on any six-holed woodwind instrument, without mouthpiece.
- Measures are proportional to their respective system. Each system has a different duration. For instance, m.8 and m.33 are both 14" in duration, but the visual length of each measure is different, only proportional to the measures that are in its system.
- The box above each measure displays the length of the measure in seconds. The electronics display the progression of each measure on-screen as to guide the performance. The durations of the measures often synchronise with an aspect of the electronics, so precision in the length, timings, and placement of musical gestures are paramount as to occur alongside the electronic component.
- Internal markers, second durations in bubbles, give proportion to gestures within a measure. These internal markers are less strict than the measure durations, and are used as a general guide of a particular measure.
- The score depicts gestures, but they are to be interpreted. For instance, m.8 depicts a rallentando of palate clicks, but the stems do not necessarily specify the amount of clicks in the gesture. Although there are 9 stems, an interpretation of m.8 could contain more or fewer clicks as part of the gesture. So, the measures depict a more general direction of a gesture.

Staves

Material is notated on two rhythmically independent staves, connoting the mouth and fingers. For the "mouth" staff, noteheads that appear on the line should be performed in a typical manner, with notes above and below the line referring to raising or lowering the pitch through changing embouchure. Lines exstend from noteheads as to depict the continuation of a gesture, these lines represent movement in pitch and the general quality of the gesture unfolding – lines may become fragmented and dotty, or smooth and continuous.

Symbols


Tap instrument on lips

With vibrato.


Re-articulate.


Ingressive or inhaled.

Noteheads


Alla tromba. The notehead on the line represents tromba embouchure resulting in the 'most natural' tone (as close as possible to the fingering). Anything above or below the line represents a glissandi above or below.


Unpitched percussive vocalisations.
Sometimes, the term 'palate click' accompanies the note head, which indicates create a percussive sound by clicking your tongue on the roof of your mouth.


Whistle tone.


Breath sound, sometimes accompanied by a syllable to suggest mouth shapes.

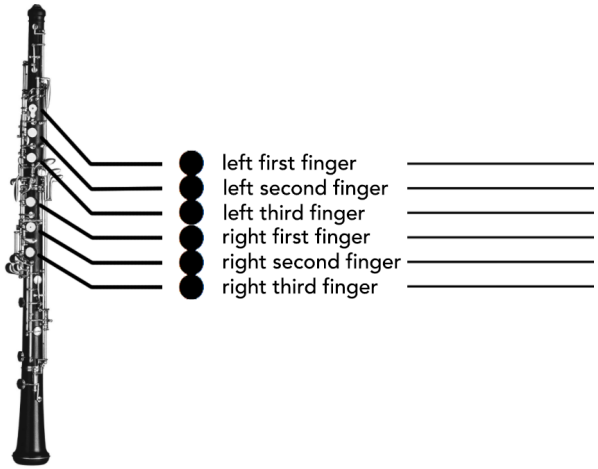

Kissing sound.


Extremely liminal tromba, creating very light squeaks in the instrument.

Fingering

The second staff refers to fingerings, depicted as a kind of tablature. Black noteheads represent depressed keys, and white noteheads depict lifted keys. Often, fingerings are represented with all keys displayed, but sometimes white or black keys will be depicted as part of a gesture, signifying the compression/release of a single finger.

A key chart can be seen below (displayed on an oboe):




Suck through teeth, inhale.

le tchip - This squeak sound can be achieved by placing your front teeth on your bottom lip and attempting to suck air through your teeth. There is little resonance from the instrument, the sound primarily comes from the squeak of air passing through the teeth to the mouth. Difference in pitch can generally be achieved through pouting — pushing your lips out to lower the pitch, and receding them to raise and lower the pitch.

tromba – a more traditional tromba sound, but inhaled and less stable.

Electronics Setup/Technical Requirements

- This work is written for solo instrument, live electronics, and stereo fixed media. The work can be performed with a single input, and a stereo speaker set-up.

Spectral_Breathing.pd instructions

To run this patch, the user must have a working version of Pure Data. The PD application functions on both MacOS and Windows, and can be downloaded for free at: https://puredata.info/downloads/

A link to this composition's PD patch can be found at www.stephendefilippo.com, on the Spectral Breathing Apparatus page. This patch was created by Rand Steiger, with edits and additions by myself.

1. Open Spectral_Breathing.pd
   this will open the patch. You will then be presented with 4 windows: Spectral_Breathing.pd, band, mixer, and player. Connection to hardware can be configured in PD's "audio" settings.
2. Press "open_FM", then load Fixed_media.wav. This will load the fixed media component.
3. Enable "cues".
4. Press "play" in the player window to begin the piece.

Note:

- Pressing "stop" or "reset" in the patch will require you to reload the fixed media (step 2).
- You can use the "next" button or "jump" box in the Spectral_Breathing.pd window to jump through the electronics cues of this piece. This will allow you to hear the electronic processing of a particular measure. However, the timer will not work.
- The timer can only play from the beginning to the end of the piece, you cannot start the timer from a particular measure. However, you can use the timer.mp4 file, which is a video version of the timer window included in the electronics, to support your practise.

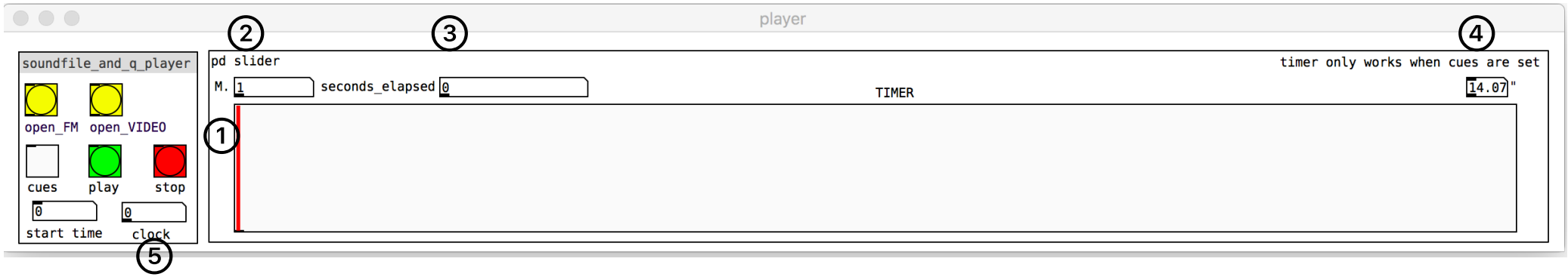
Microphone placement

Because of the prominence of ingressive musical gestures and key sounds in this piece, it is suggested that the microphone input is positioned as to capture the liminal sounds of the mouth. So, it may be more appropriate to position the microphone closer to where the mouthpiece of your instrument should be, as opposed to the bell.

Electronics in performance

The player window helps synchronise performed events with the fixed media. Below highlights the components of the player box:

1. The scrollbar will move from left to right, giving a visual cue of the length of each measure.
2. This box will depict the current measure #.
3. This box depicts in milliseconds the time that has elapsed so far in your current measure
4. This box depicts the duration of the current measure.
5. This clock counts the length of the performance in seconds.



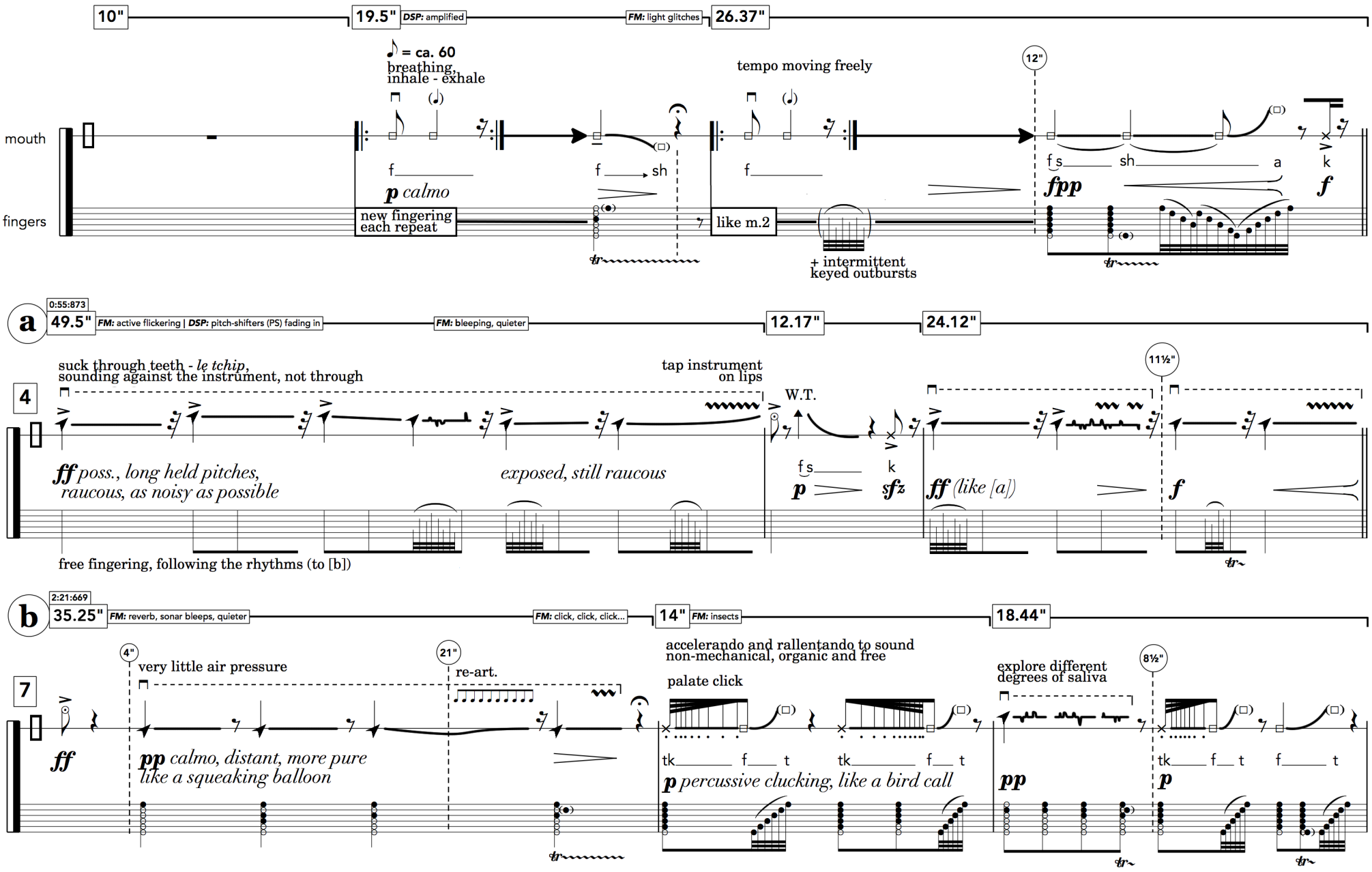
Spectral Breathing Apparatus

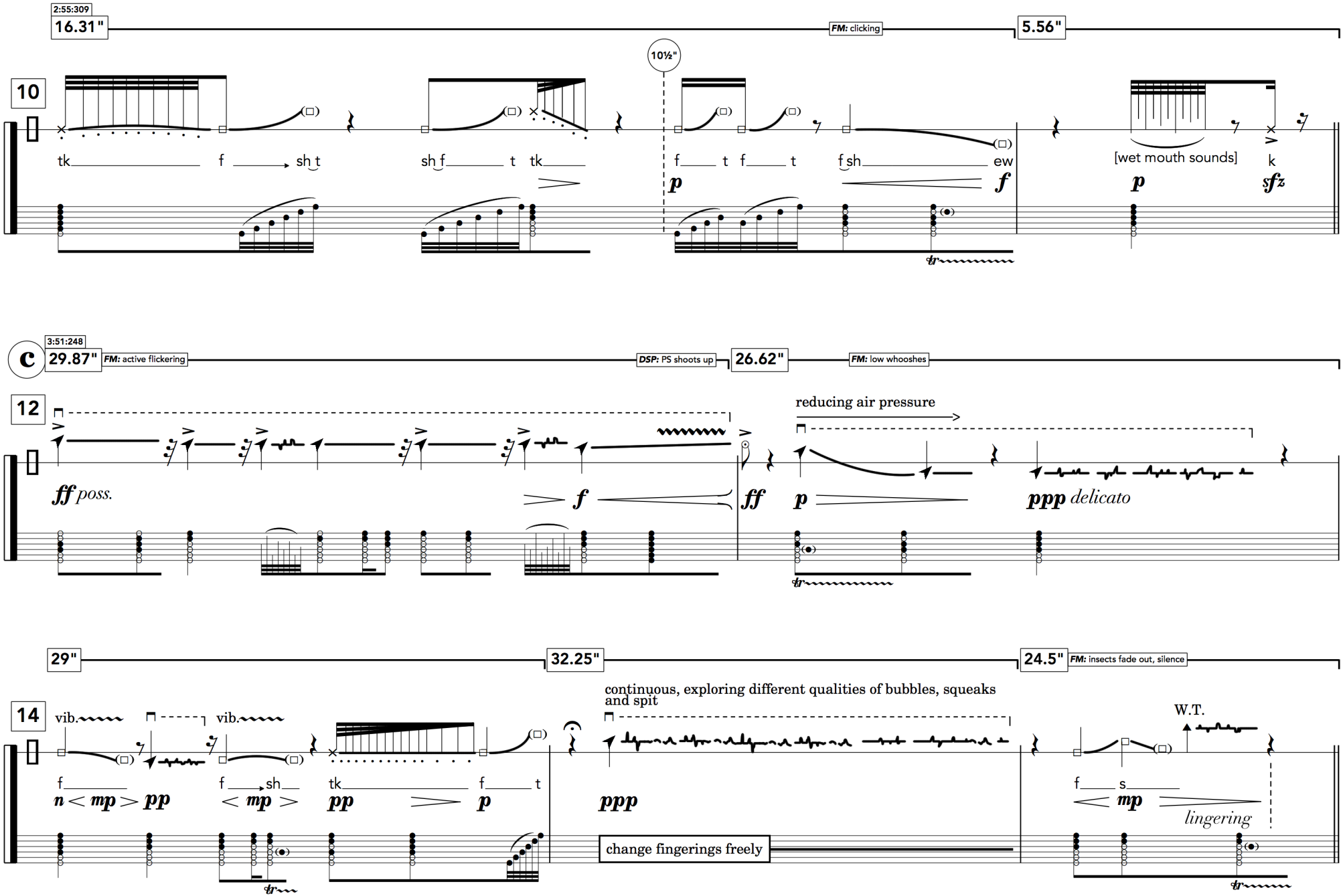
for solo wind instrument (w/o mouthpiece) & electronics

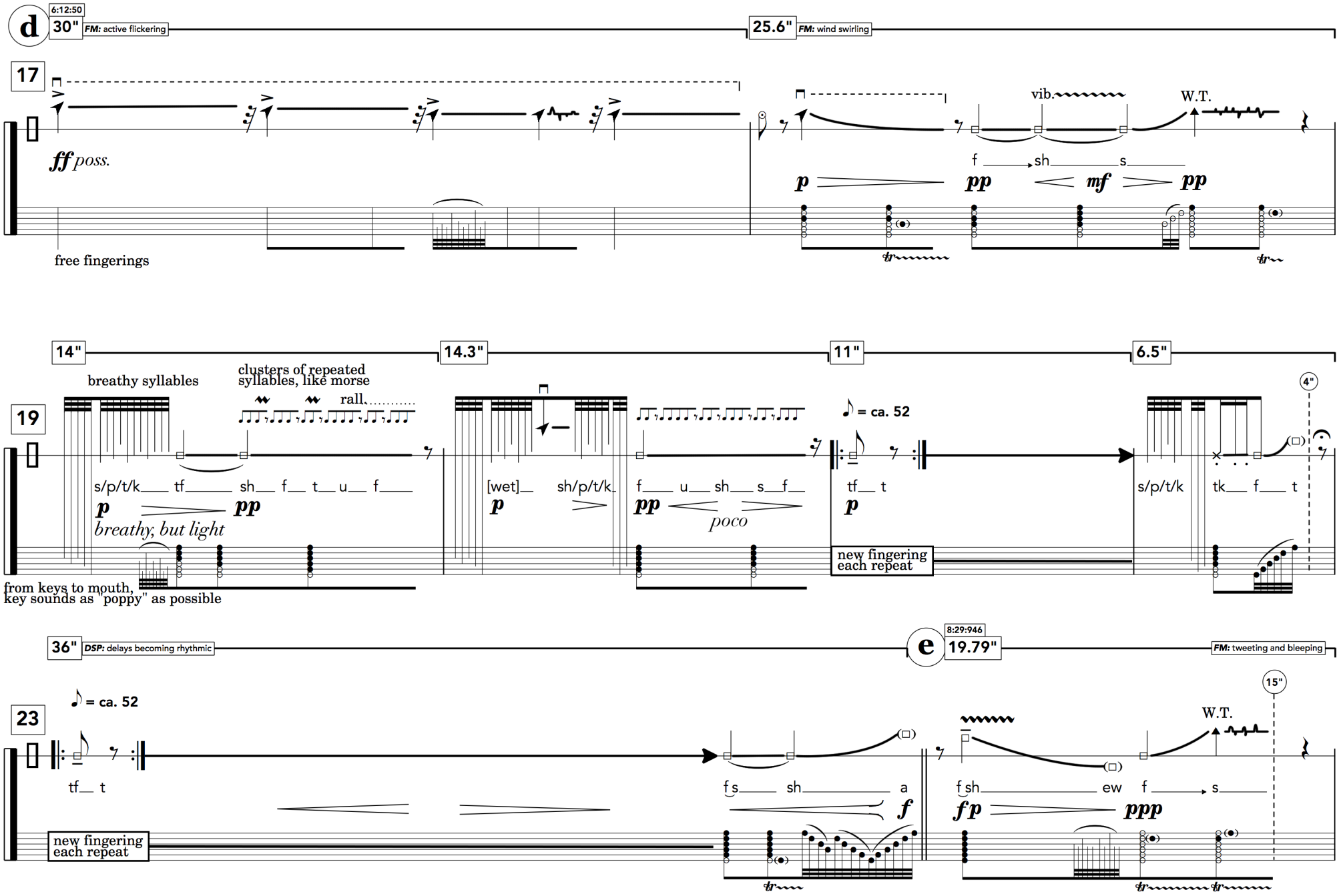
Stephen de Filippo | 2022

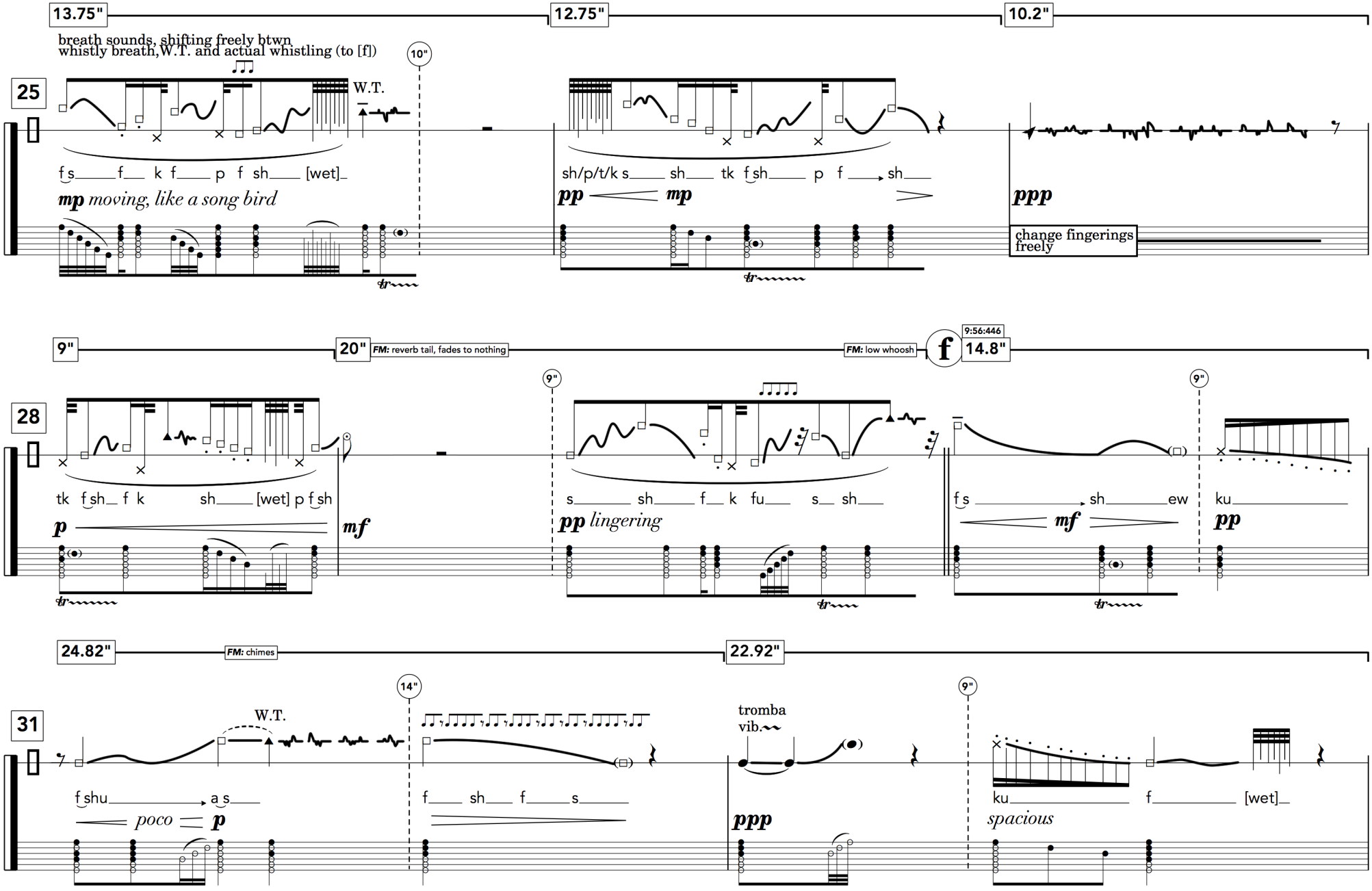
General Notes

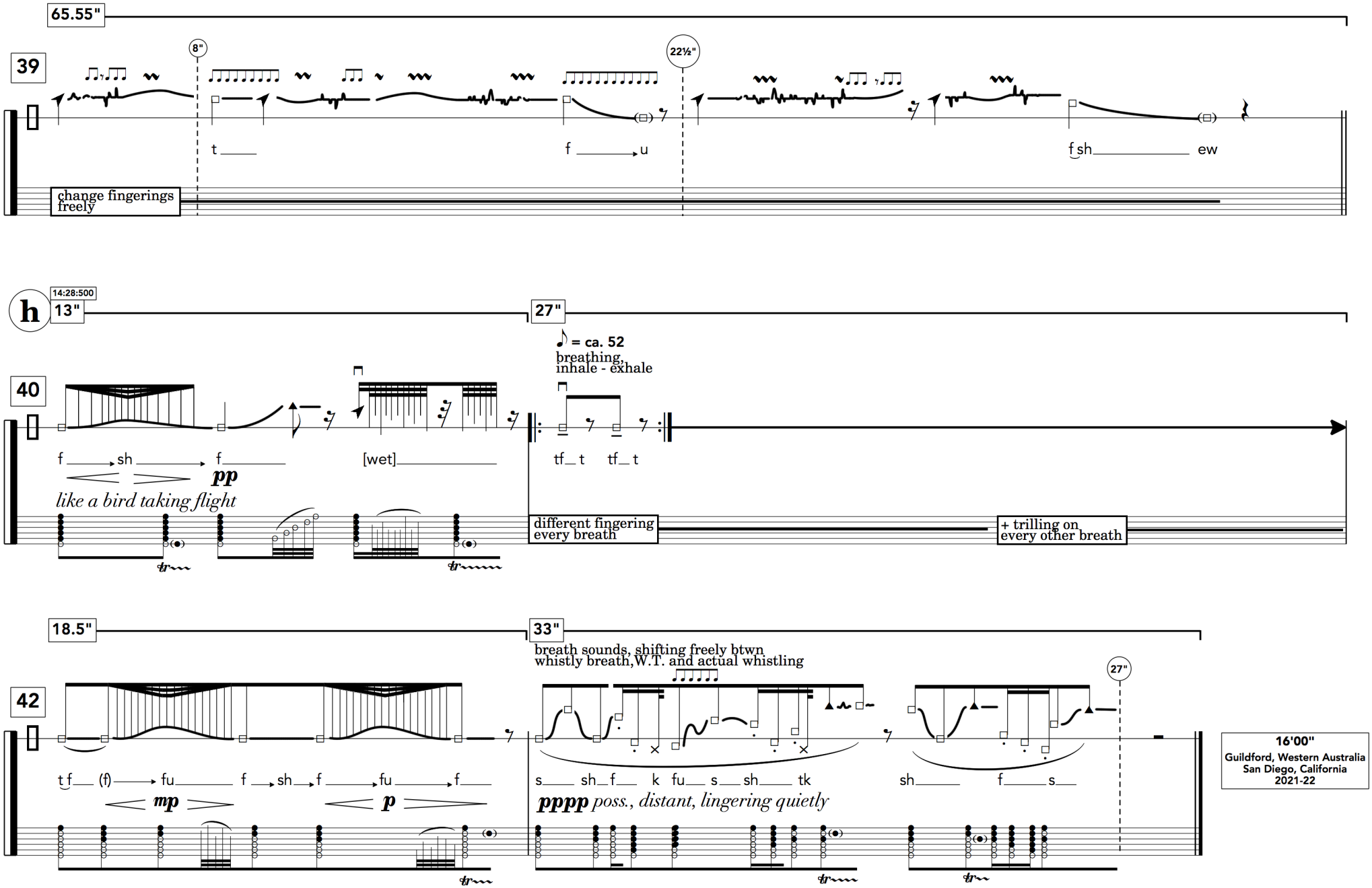
Measures are proportional to their respective system. Each system has a different duration.
Each measure [boxed duration] is guided by the scrolling displayed in the patch.
Circled numbers can be synced to the milisecond clock, these are not strict




2:55:309
16.31"
FM: clicking
5.56"
10
10½"
tk f sh t
sh f t tk
f t f t
f sh ew
[wet mouth sounds]
k
p
f
p
sfz
C
3:51:248
29.87"
FM: active flickering
DSP: PS shoots up
26.62"
FM: low whooshes
12
reducing air pressure
ff poss.
f
ff
p
ppp delicato
29"
32.25"
24.5"
FM: insects fade out, silence
14
vib.
vib.
continuous, exploring different qualities of bubbles, squeaks and spit
W.T.
f
n < mp > pp
f sh
< mp >
tk
pp
f t
p
ppp
f s
< mp
lingering
change fingerings freely


d
6:12:50
30"
FM: active flickering
25.6"
FM: wind swirling
17
ff poss.
free fingerings
vib.
W.T.
f sh s
p
pp
mf
pp
14"
14.3"
11"
6.5"
breathy syllables
clusters of repeated syllables, like morse
rall.
19
s/p/t/k tf sh f t u f
p
pp
breathy, but light
[wet] sh/p/t/k
p
f u sh s f
pp
poco
= ca. 52
tf t
p
new fingering each repeat
s/p/t/k tk f t
4"
from keys to mouth, key sounds as "poppy" as possible
36"
DSP: delays becoming rhythmic
e
8:29:946
19.79"
FM: tweeting and bleeping
15"
23
= ca. 52
tf t
new fingering each repeat
f s sh a
f
f sh ew f s
fp
ppp
W.T.


13.75"
12.75"
10.2"
breath sounds, shifting freely btwn
whistly breath,W.T. and actual whistling (to [f])
10"
25
W.T.
f s f k f p f sh [wet]
mp moving, like a song bird
sh/p/t/k s sh tk f sh p f sh
pp mp
ppp
change fingerings
freely
9"
20"
FM: reverb tail, fades to nothing
FM: low whoosh
9:56:446
f
14.8"
9"
9"
28
tk f sh f k sh [wet] p f sh
p mf
s sh f k fu s sh
pp lingering
f s sh ew
mf
ku
pp
24.82"
FM: chimes
22.92"
14"
9"
31
W.T.
f shu a s
poco p
f sh f s
tromba
vib.
ppp
ku f [wet]
spacious


65.55"
39
8"
22½"
t
f u
f sh ew
change fingerings freely
h
14:28:500
13"
27"
♪ = ca. 52
breathing, inhale - exhale
40
f sh f
pp
like a bird taking flight
[wet]
tf t tf t
different fingering every breath
+ trilling on every other breath
18.5"
33"
breath sounds, shifting freely btwn whistly breath,W.T. and actual whistling
42
t f (f) fu f sh f fu f
mp
p
s sh f k fu s sh tk
pppp poss., distant, lingering quietly
sh f s
27"
16'00"
Guildford, Western Australia
San Diego, California
2021-22

composed with support from:
The American Australian Association Arts Fund &
APRA AMCOS Art Music Fund

-

www.stephendefilippo.com