P a v a k o o t h u

For Bb clarinet, fixed media and electronics

Diana Simpson

2007

Premiered by Esther Lamneck on 4th November 2007, in the Cosmo Rodewald Concert Hall, University of Manchester.

A recording of this work can be found on Audio CD 1 (Track 5).

The recording and the tape part can be found in 24bit 44.1kHz resolution on Data DVD 1.

The Max/MSP patch and associated files can be found on the Data CD

Programme Note

The word *pavakoothu* (puppet dance) is often used in references to Indian puppetry, particularly the practice of shadow puppetry. Consequently this piece is an exploration the act of puppetry through sound. The clarinet acts as a metaphorical 'puppeteer' within a sonic landscape which alludes to enchanted and ethereal elements. The dance of the puppets themselves is characterised by percussive sounds, and increased gestural energy towards the middle of the work. At this point much of the sonic activity stems from the clarinet itself through live processing. Ultimately, all of the sound material stems from the clarinet, although this is not always apparent. The piece is characterised by the changing status of the puppeteer, the puppets, and the sonic landscape in which they exist. Traces of narrative or 'story' remain deliberately ambiguous throughout.

With thanks to the clarinettists William Stafford, Thom Harrison and Esther Lamneck for their assistance during the composition of this work.

Technical Information

The following equipment is required for performance of the work with the fixed media and real-time electronic processing:

Computer running Max/MSP 4.6. (A free run-time version of Max/MSP for PC or Mac is available from http://www.cycling74.com/downloads.) A minimum of a 1.66 GHz processor with 1GB of memory is recommended.

Mixing Desk with a minimum of 2 microphone inputs, 4 lines in and 2 outputs. (If using more than two microphones, more microphone inputs will be required. In the same manner, if more than two loudspeakers are utilised, an equivalent number of extra outputs will be required.)

Audio interface (e.g. MOTU 828mk3) with a minimum of 2 inputs (If using more than two microphones, up to four inputs will be required) and 4 outputs.

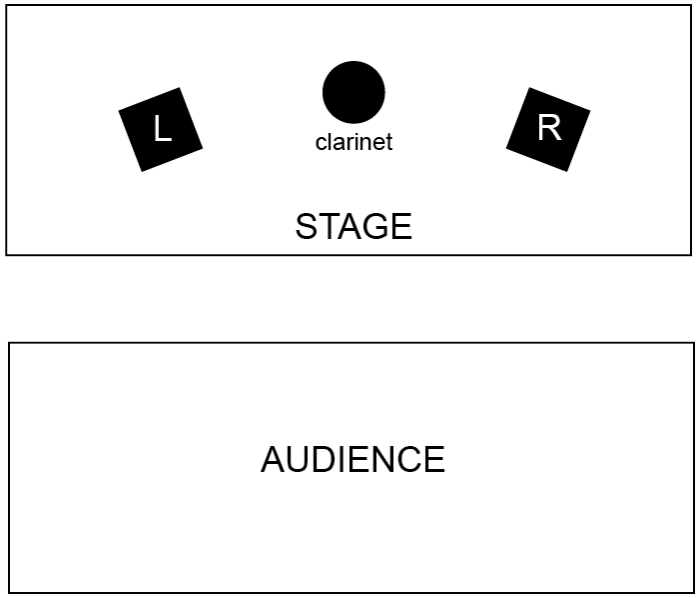
2 condenser microphones (e.g. matched stereo pair of Rode NT5s) **and stands** positioned to the sides of the clarinet, close to the right and left hands of the performer in order to capture low amplitude extended techniques. The patch allows for up to four microphone inputs, and so a third and fourth microphone may be added, for example a clip microphone on the player to capture key-clicks, hence the condenser microphones could be placed slightly further away.

Minimum 2 high-quality loudspeakers (e.g. Genelec 8040As) placed either side of the performer.

Depending on the acoustics of the performance venue, and the preference of the clarinettist, an additional monitoring speaker may be required.

In certain concert situations, there may be an opportunity to diffuse the music over multiple loudspeakers. In this case, the two ‘main’ loudspeakers should, as specified, be placed either side of the performer. A mix of the tape part, amplified clarinet and processed clarinet should be sent to these loudspeakers. The remainder of the loudspeakers should receive the tape part only. At the operator’s discretion, a mix of the tape part and processed clarinet output may be actively diffused across the additional loudspeakers, although any diffusion performance should not detract from the clarinettist.

The diagram below shows a basic concert set-up with the position of the two main loudspeakers. It is not necessary for the computer to be on stage. Levels may be more easily balanced if the computer operator and mixing desk are located in the audience.



The diagram (right) shows the minimum set-up for performance of the work, using two condenser microphones, and two speakers.

MIXER INPUTS 1 and 2: Input from microphones 1 and 2 (and 3/4 if required). The adjusted microphone signals are then sent on to the audio interface.

INTERFACE INPUTS 1 and 2: Microphones 1 and 2 (and 3/4 to additional inputs if required).

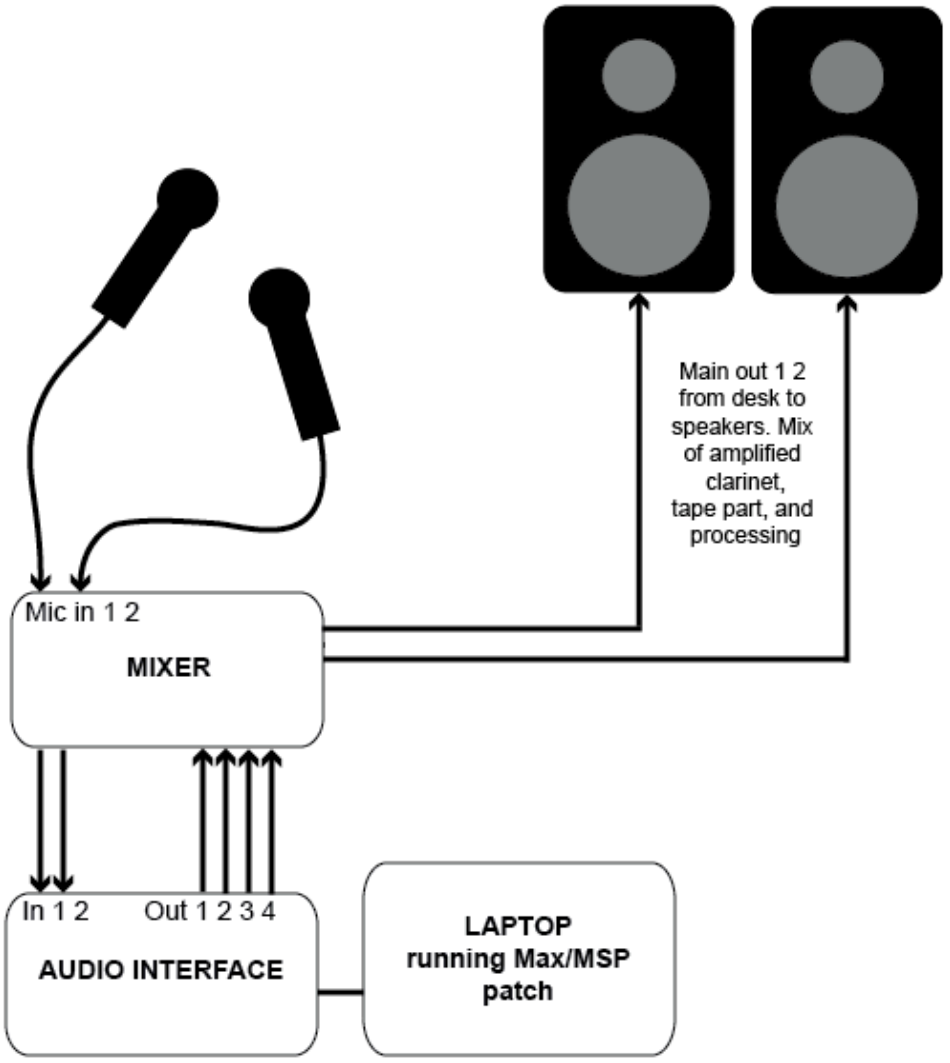
INTERFACE OUTPUTS 1 and 2: Stereo tape part

INTERFACE OUTPUTS 3 and 4: Stereo processing of clarinet

MIXER MAIN OUT: Mix of amplified clarinet, tape part and processed clarinet to main speakers L and R. Optionally, the tape part may be diffused over other speakers if available, and a speaker may be also be utilised for monitoring. *In these circumstances additional mixer outputs will be required.*

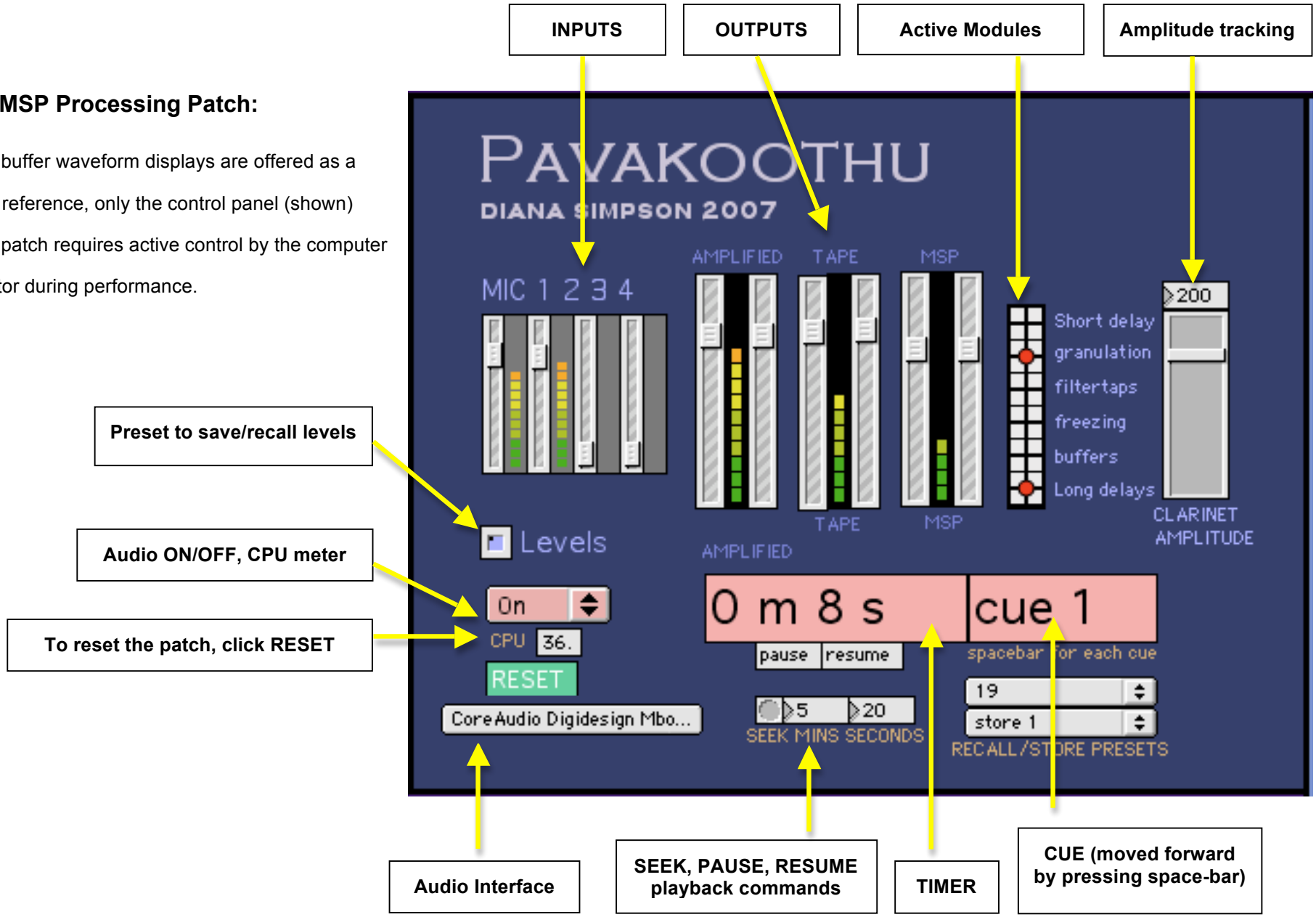
Balance

During the performance it is advisable to balance, on the mixer, the relative levels of the amplified clarinet, processed clarinet and tape part. The amplified clarinet should be audible above the tape part at all times. The processed clarinet sounds should blend with the tape part, without 'standing out' in the mix.



Max/MSP Processing Patch:

While buffer waveform displays are offered as a visual reference, only the control panel (shown) of the patch requires active control by the computer operator during performance.



Performance Instructions for the Electronics

1. Open patch (located on Data CD 1, labelled 'PavakoothuPATCH'). Click RESET. All presets will load automatically.
2. Choose the appropriate audio interface from the drop-down list and switch on audio.
3. Adjust levels (or alternatively recall preset levels). Adjust clarinet amplitude scale* (number box above fader) to incorporate full dynamic range on fader.
4. Hit space bar to commence playback of tape and load Cue 1. Further hits of the spacebar will move through the cues and their associated presets.
5. The cue number is shown to the right of the timer display. To jump to a specific cue number, use the drop-down menu directly below the cue display. Cue points are shown as numbers within squares in the score.

*Selected parameters of the processing modules are altered according to the amplitude of the clarinet. The number box above the amplitude meter should be adjusted to incorporate the full dynamic range of the clarinet.

Max/MSP External Objects

The patch folder includes copies of all external objects used. (All links correct at September 2009.)

munger~ by Dan Trueman, included in the PeRColate collection, available from http://www.music.columbia.edu/PeRColate/

pvcompand~ from the FFTease library by Eric Lyon, available from http://www.sarc.qub.ac.uk/~elyon/LyonSoftware/MaxMSP/FFTease/

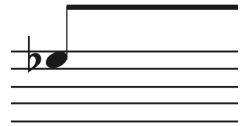
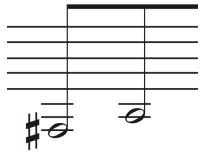
tap.shift~ from the Tap.Tools collection by Electrotap. Free trial download available at http://shop.electrotap.com/products/taptools

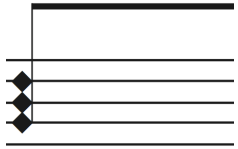
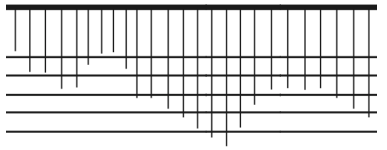
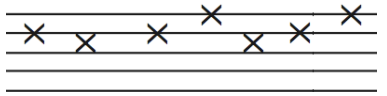
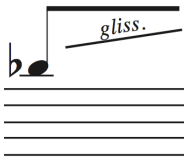
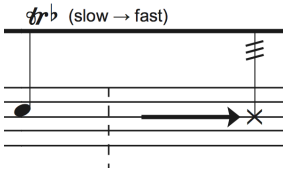
cpPan~ from the Granular Toolkit by Nathan Wolek, available at http://www.lowkeydigitalstudio.com/2007/03/granular-toolkit-v1-49/

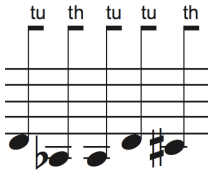
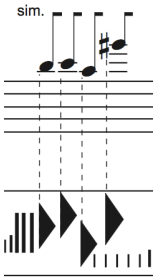
grooveduck and **grooveduck2** are patches which can be found in the examples folder of Max/MSP.

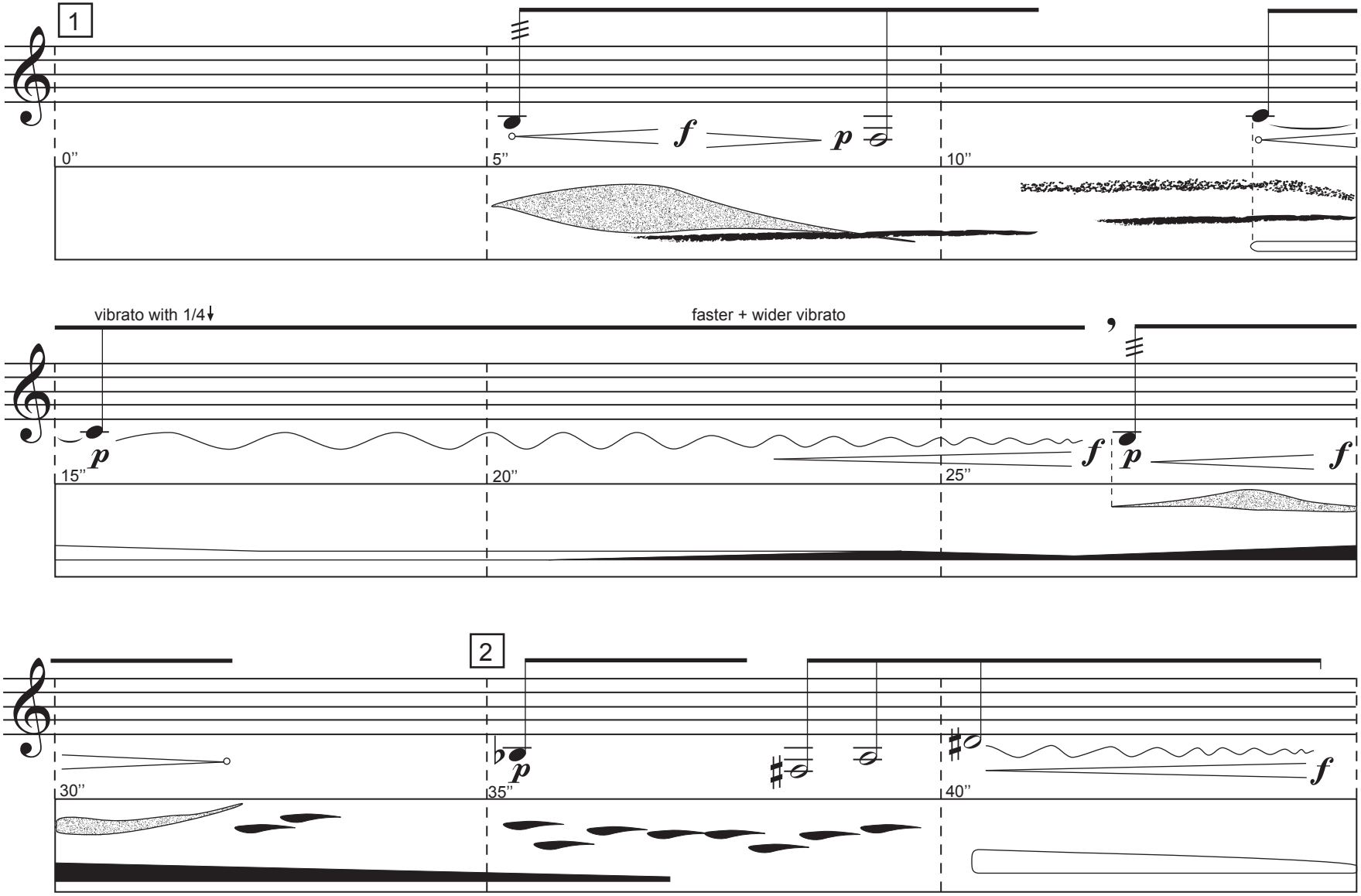
[Links correct at January 2010]

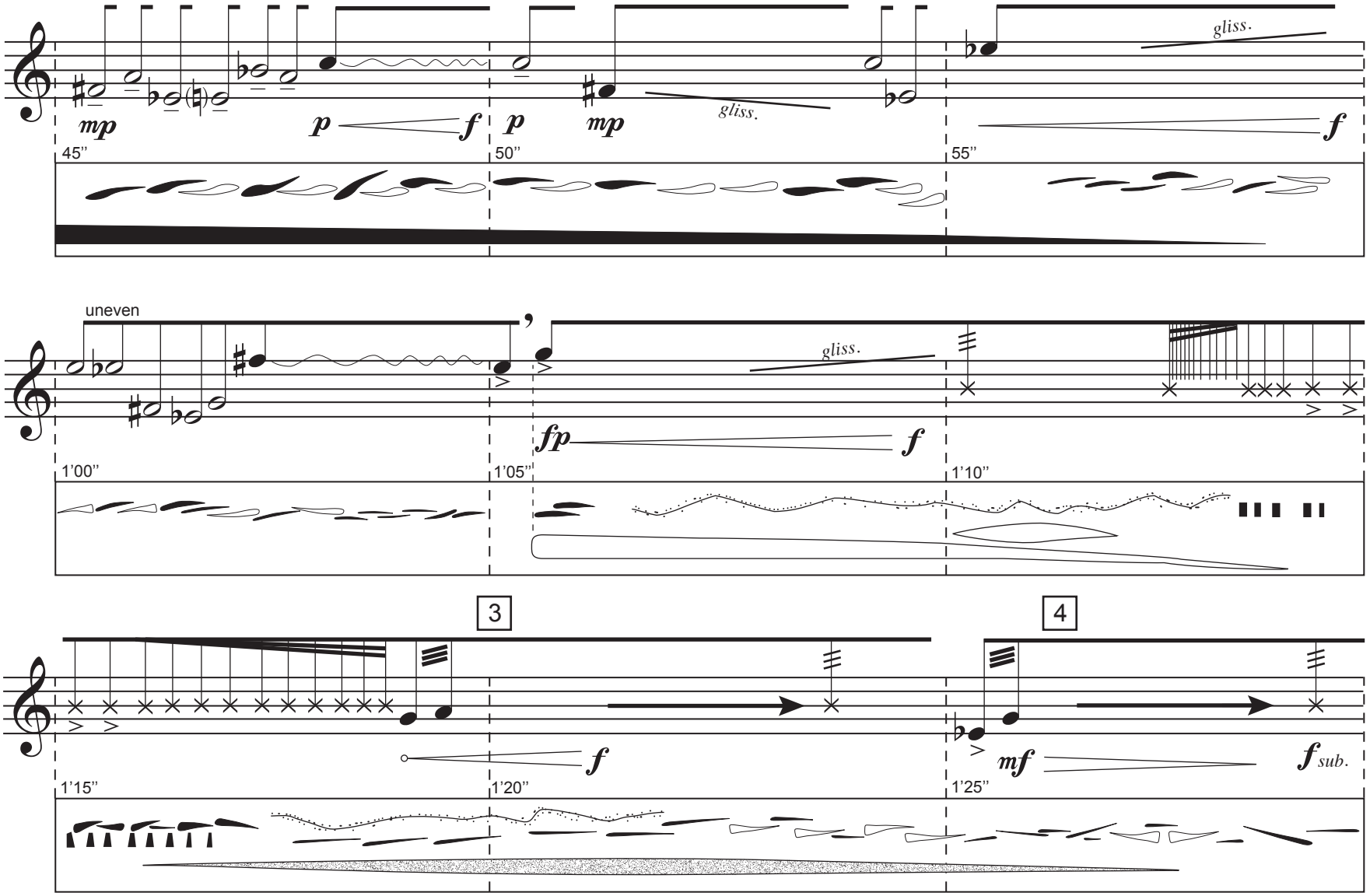
Notational Information

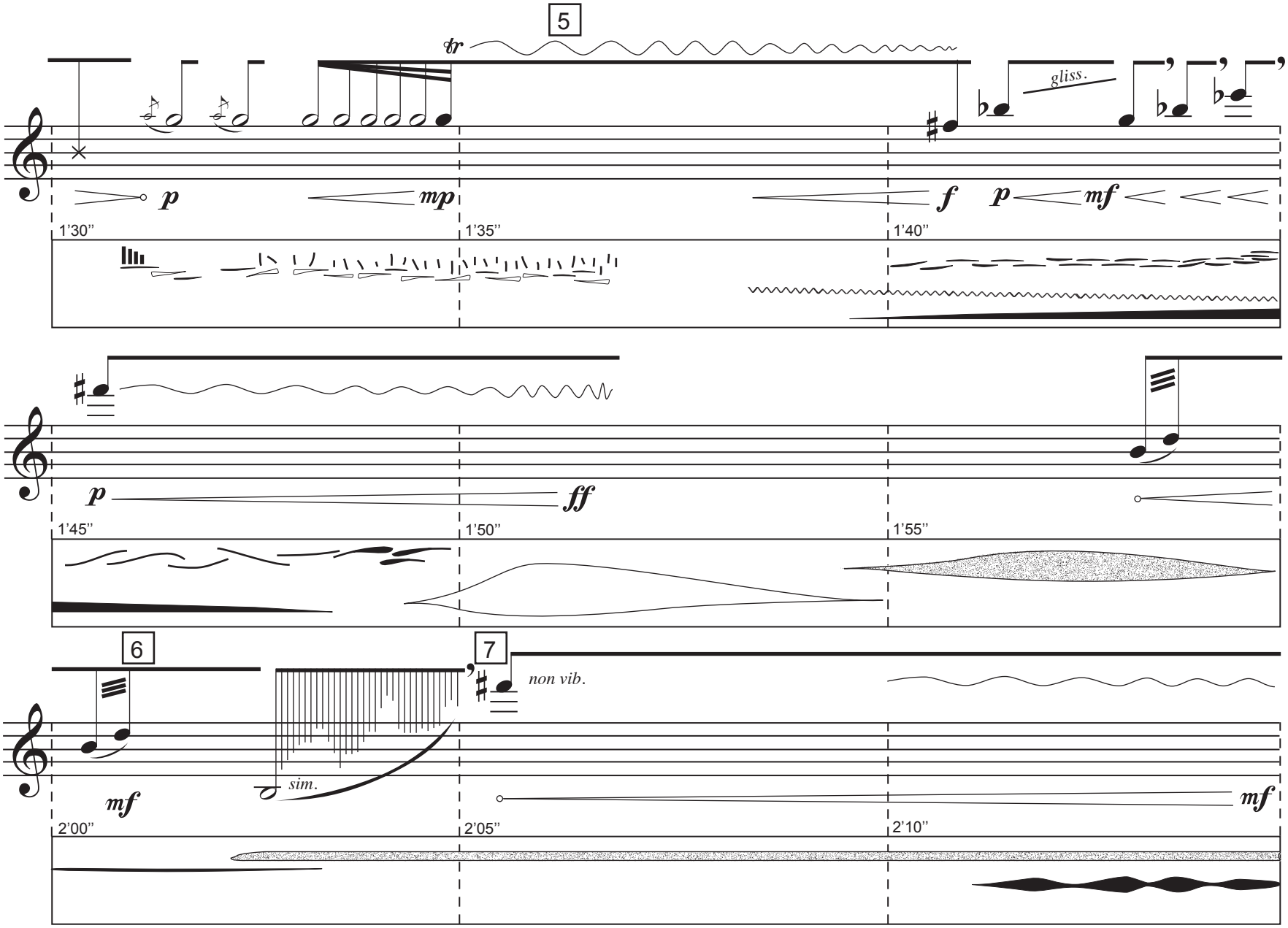
The score uses proportional notation, with a graphic representation of the tape part below the clarinet line. Crucial synchronisation points are indicated by dotted lines, however there is some degree of flexibility as is idiomatic to proportionally notated music.	
Since there are no 'bars' in the conventional sense, accidentals last only for the duration of one note. Therefore the performer should play exactly the note which they read.	
The performer may utilise a stopwatch during performance if required, although it would be preferable for the player to *learn* the tape part, and consequently be aware of blending and synchronisation points rather than relying on time-code.	
Notes should not be thought of as 'crotchets', or 'quavers' etc. The **extended beams** indicate the absolute duration for which a note should be sustained, as specified by its position in the timeline. Notes without a beam, or with a short beat, are consequently of very short duration. All beams are found *above* the stave, no matter what the note's pitch position in the stave. Not only does this avoid cluttering with dynamics, but provides consistency of location for the performer to ascertain duration. At times dense passages of notes do not utilise stems, in order to avoid improve reading clarity for the performer at these points.	
Filled note-heads are conventional sounding notes.	
Those with **empty note-heads** are to be played with a breathy, muted tone-colour.	

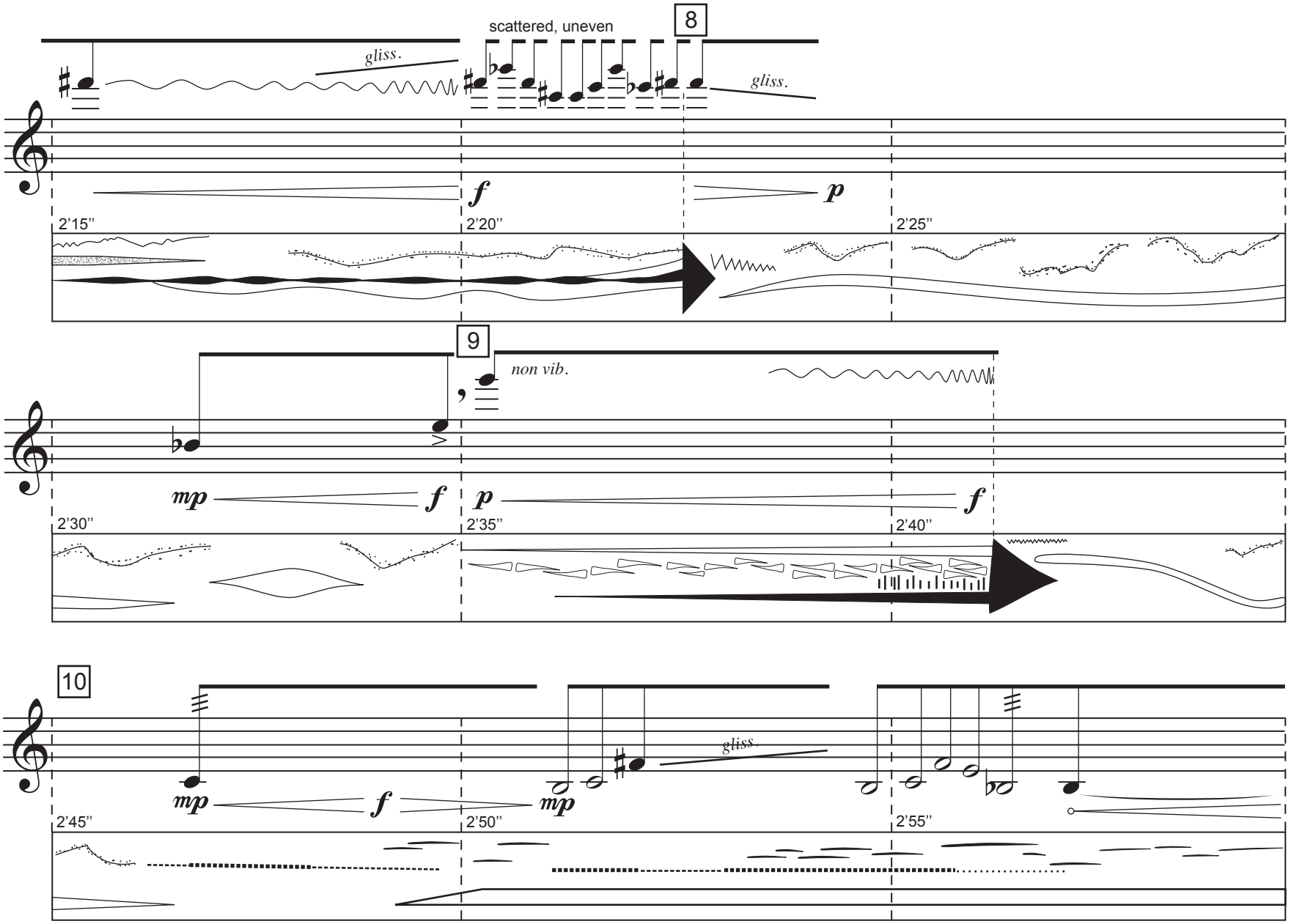
Diamond note-heads indicate a multiphonic. The exact pitching of each multiphonic is for the player to decide, but should blend with the surrounding electronic landscape.	
Stems without note-heads indicate improvisation according to the register and contour indicated within the stave.	
Key clicks are indicated by **crossed note-heads** (with or without stems), and are not sounding notes. If used in conjunction with a tremolo sign they should be played as rapidly as possible. It is not necessary to play exactly the notes specified.	
Large **commas** indicate an intake of breath, resulting in a brief pause.	
Glissandi should be played as extreme note-bending, utilising the same fingering unless an alternative end note is specified.	
An **arrow** between notes indicates that the note should merge to the next. This is usually found when merging from a sounding trill to flutter tonguing on the same note.	
There is extensive use of **flutter tonguing**, notated as:	

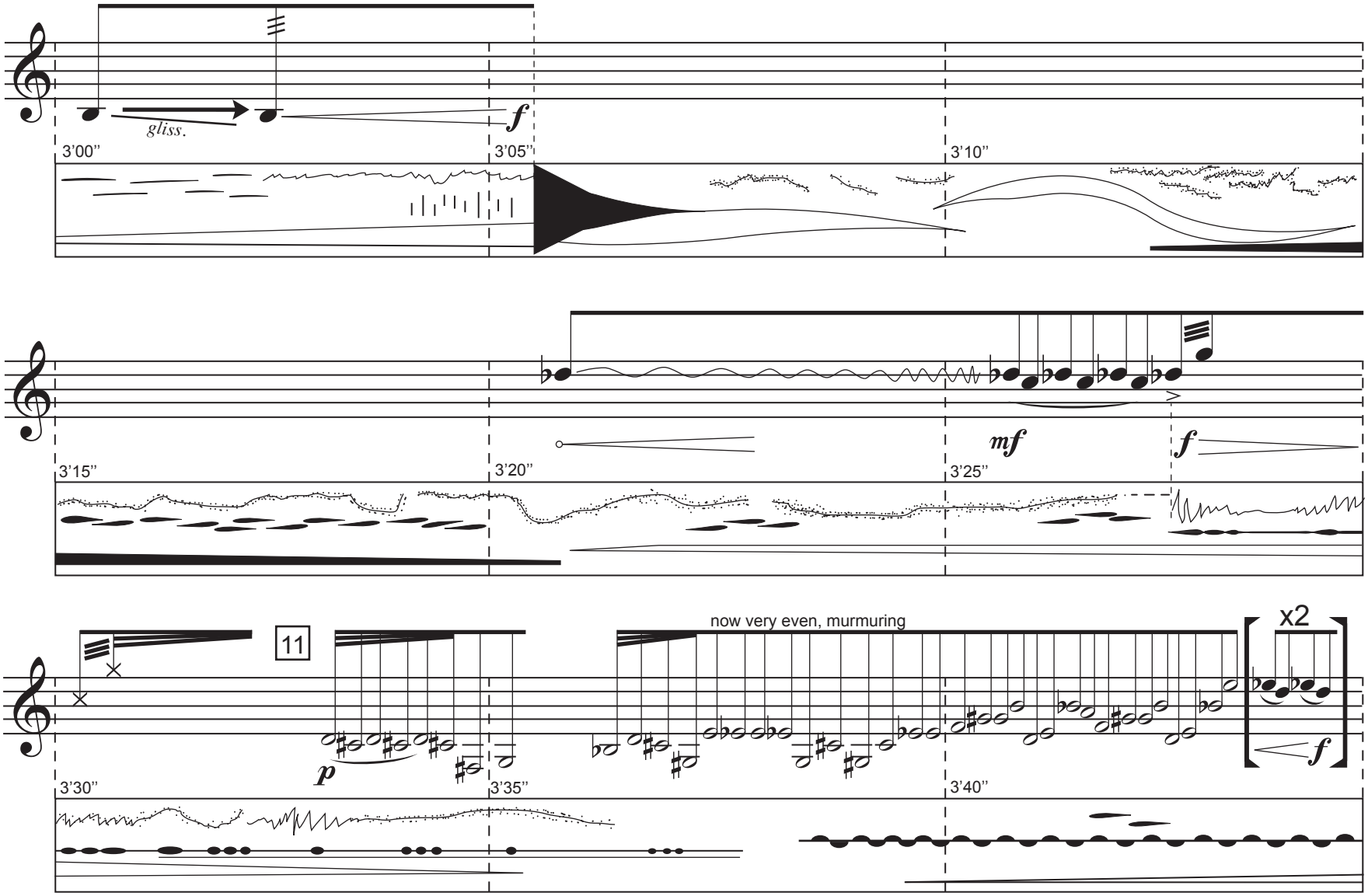
Articulate with given letters, with more emphasis on harsh articulation and air than the note itself.	
Increasing speed and intensity of **vibrato** on the given note.	
If the performer is able to play the notes on the first line of page 13 very rapidly, it may be required to repeat any or all of the section marked between the two stars (9'11 and 9'15) before playing the B at 9'16.	
A dotted line between the clarinet part and the graphic tape part indicates **synchronisation** with the sound-object in the tape part.	
For the operator of the electronics, when a number in a square is given above the score, the space bar should be pressed to move the patch to this **preset**. Precision is required on page 7 in order to capture the brief gestures.	

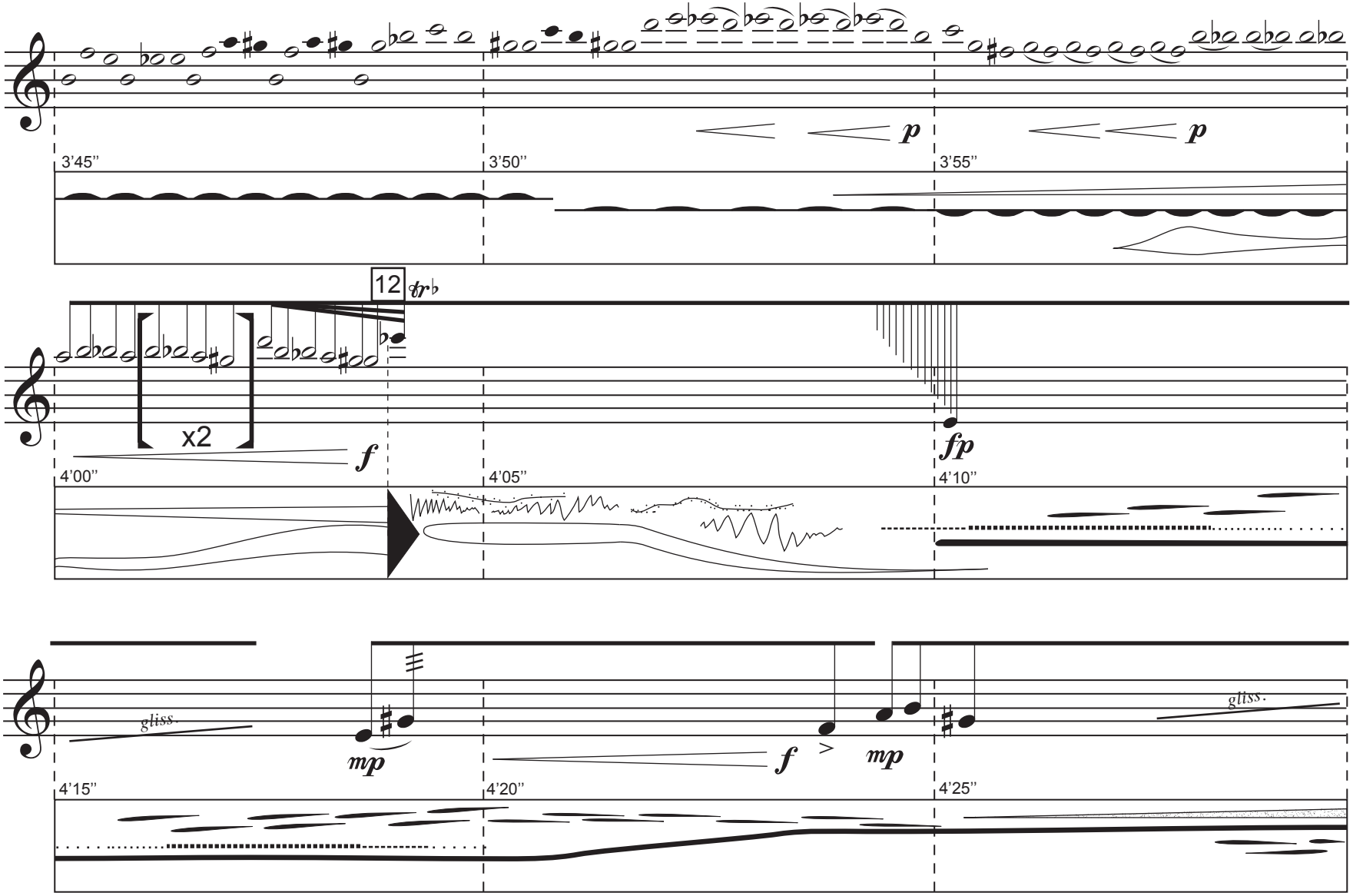

1
0''
5''
10''
f
p
vibrato with 1/4
faster + wider vibrato
15''
20''
25''
p
f
p
f
2
30''
35''
40''
p
f

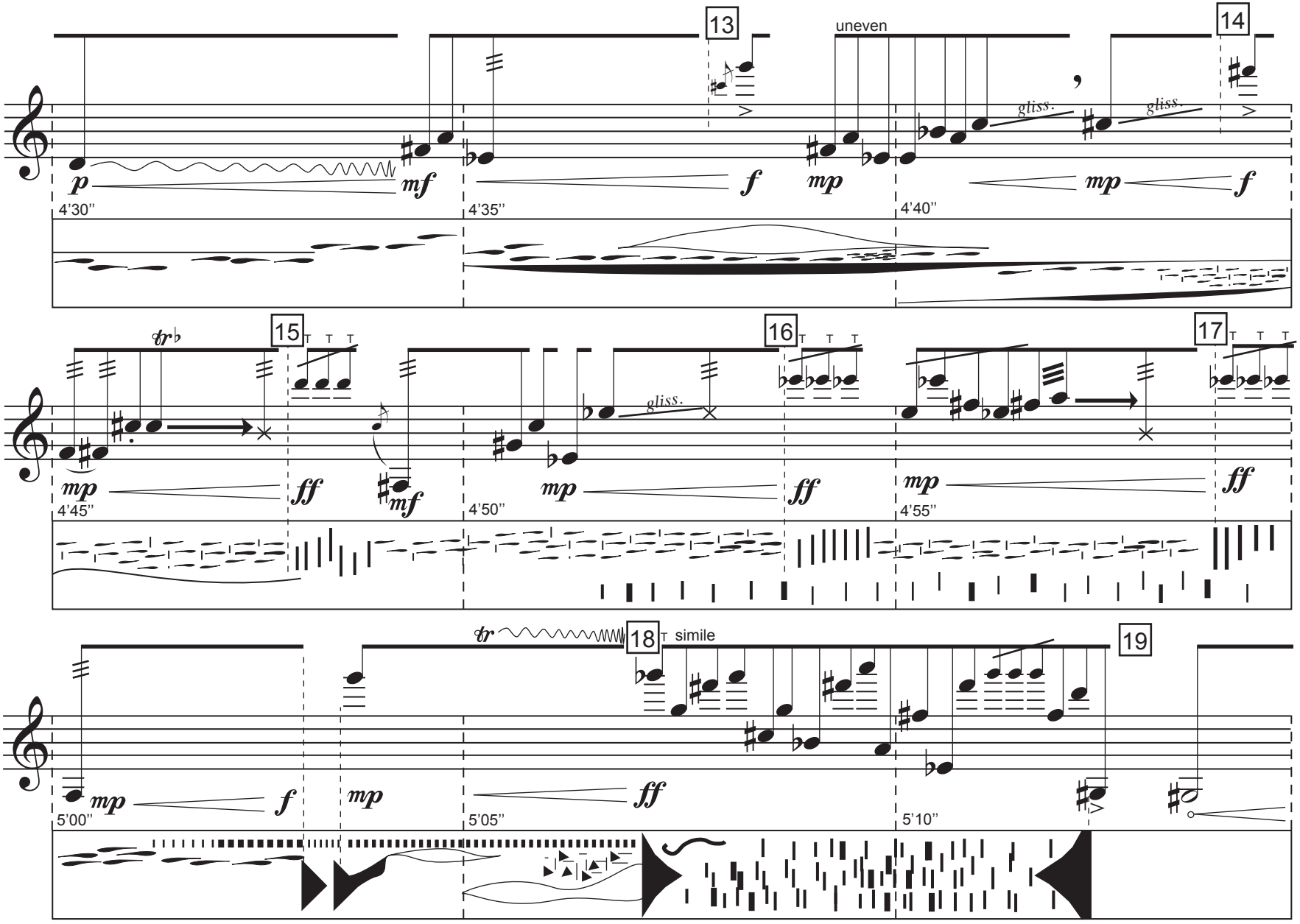

mp
p
f
p
mp
gliss.
gliss.
f
45''
50''
55''
uneven
gliss.
fp
f
1'00''
1'05''
1'10''
3
4
f
mf
f sub.
1'15''
1'20''
1'25''

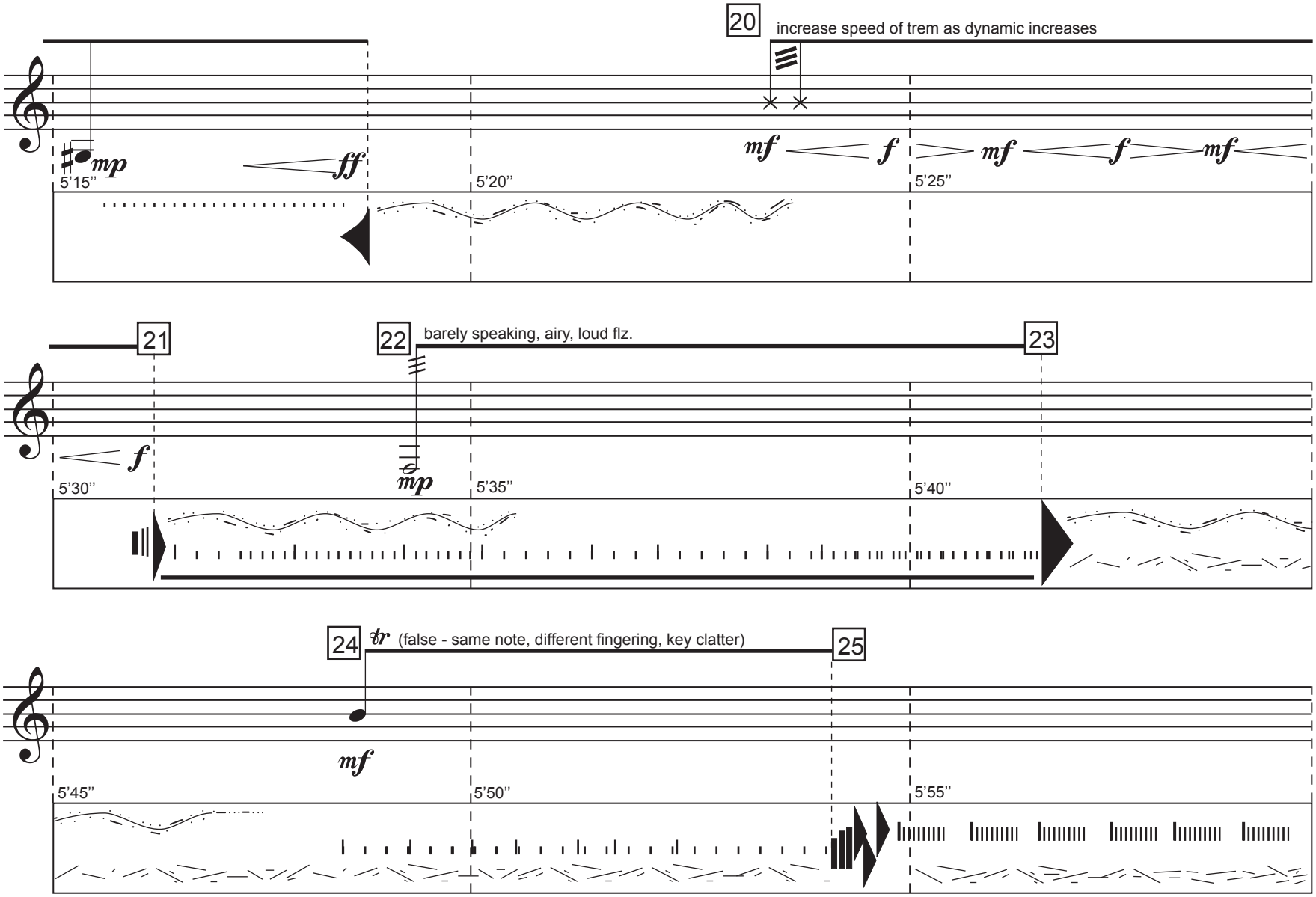

5
tr
gliss.
p
mp
f
p
mf
1'30"
1'35"
1'40"
p
ff
1'45"
1'50"
1'55"
6
7
non vib.
mf
sim.
mf
2'00"
2'05"
2'10"

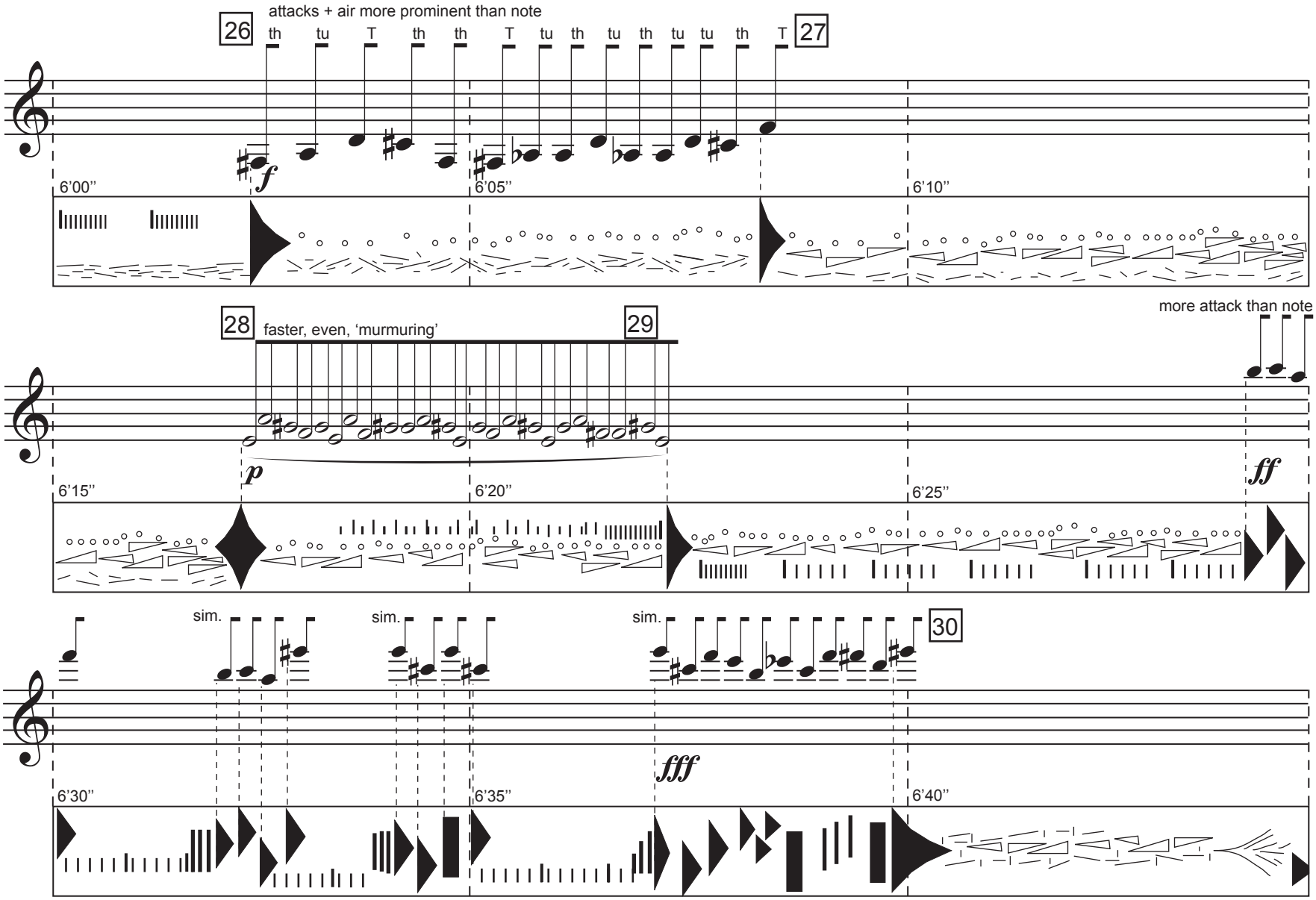

scattered, uneven
8
gliss.
gliss.
f
p
2'15"
2'20"
2'25"
9
non vib.
mp
f
p
f
2'30"
2'35"
2'40"
10
gliss.
mp
f
mp
2'45"
2'50"
2'55"

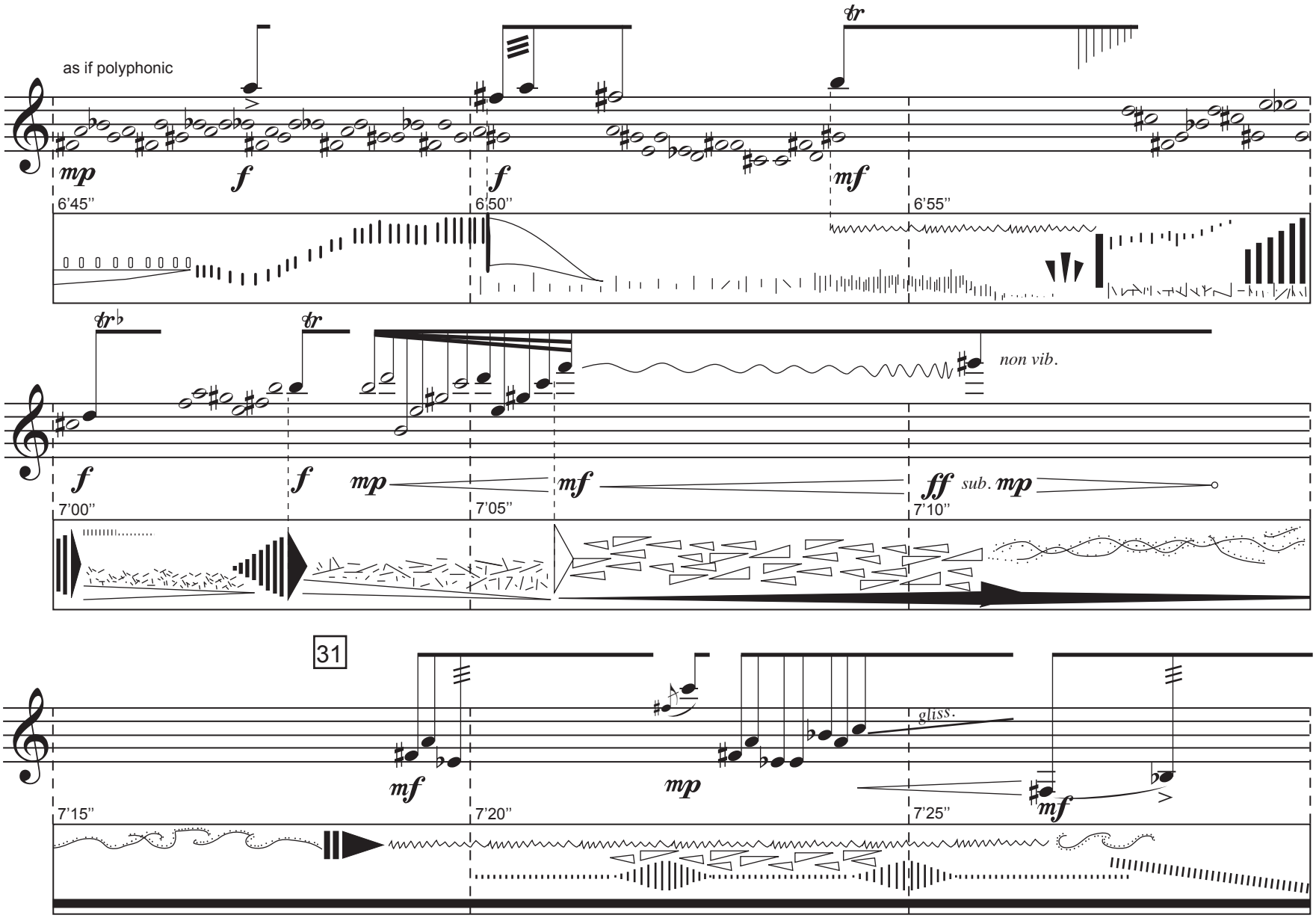

gliss.
f
3'00"
3'05"
3'10"
mf
f
3'15"
3'20"
3'25"
11
now very even, murmuring
x2
p
f
3'30"
3'35"
3'40"

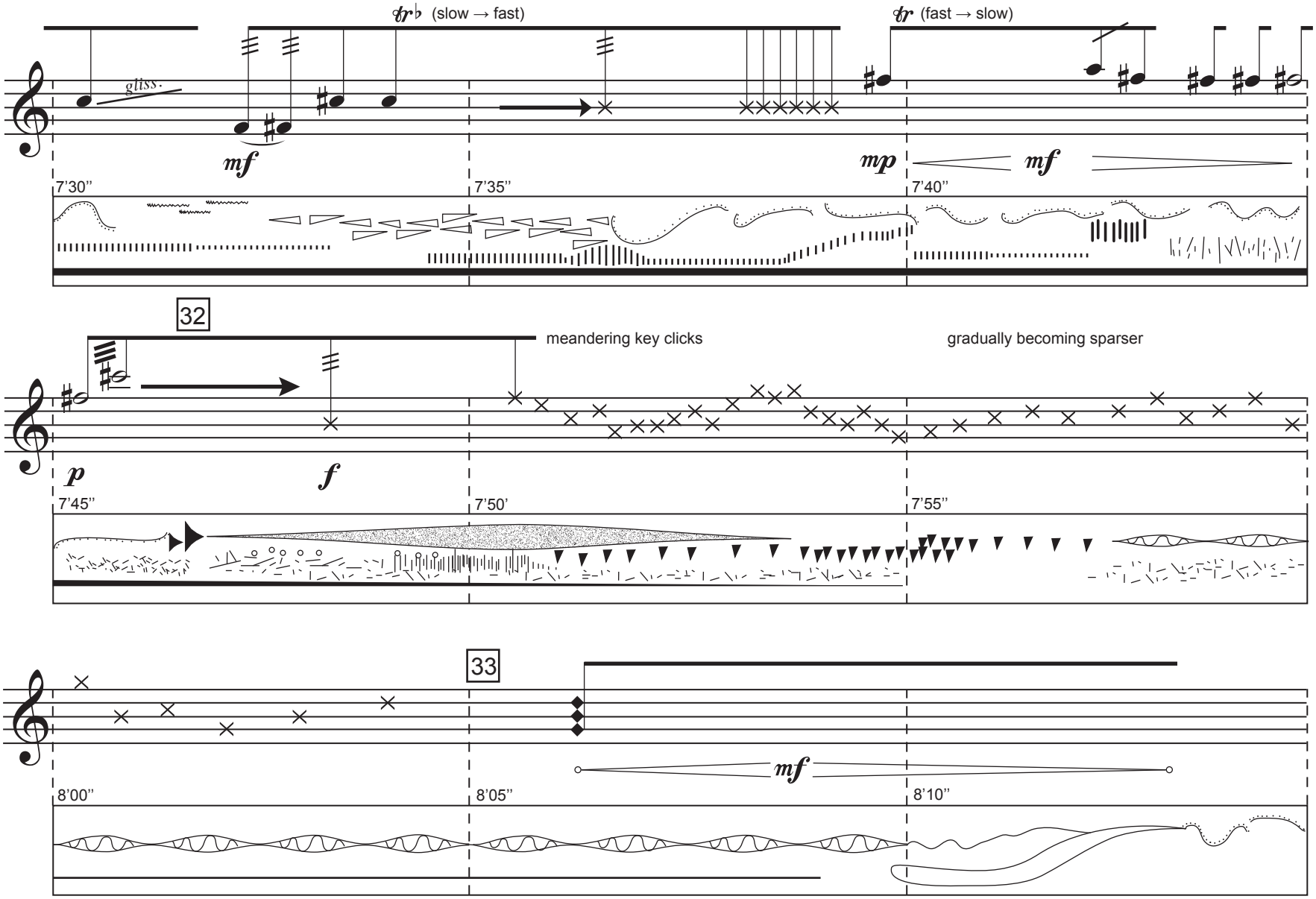

p
p
3'45"
3'50"
3'55"
12
tr
x2
f
fp
4'00"
4'05"
4'10"
gliss.
mp
f
mp
gliss.
4'15"
4'20"
4'25"

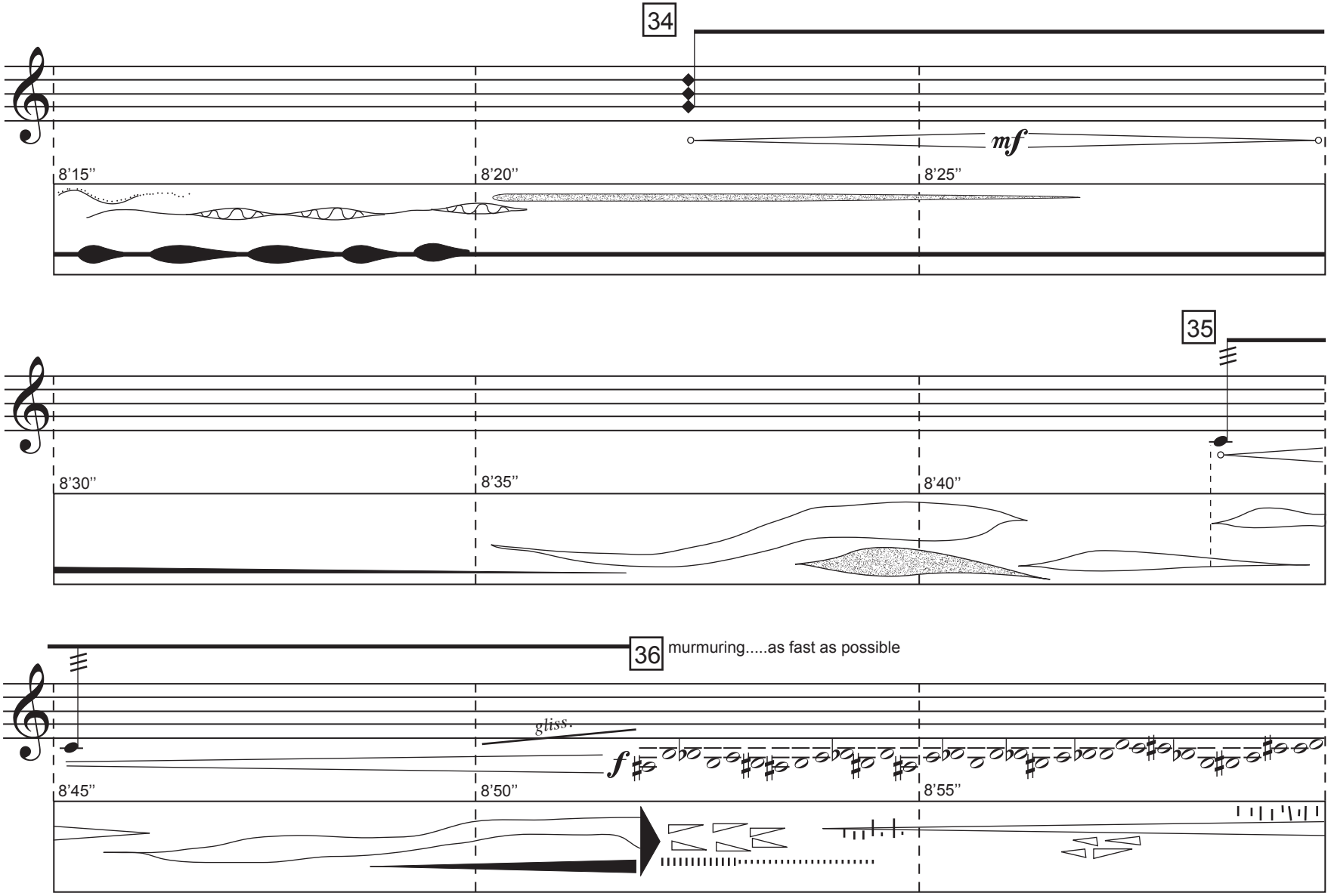

13
uneven
14
gliss.
gliss.
p
mf
f
mp
mp
f
4'30"
4'35"
4'40"
15
16
17
gliss.
mp
ff
mf
mp
ff
mp
ff
4'45"
4'50"
4'55"
18
simile
19
mp
f
mp
ff
5'00"
5'05"
5'10"

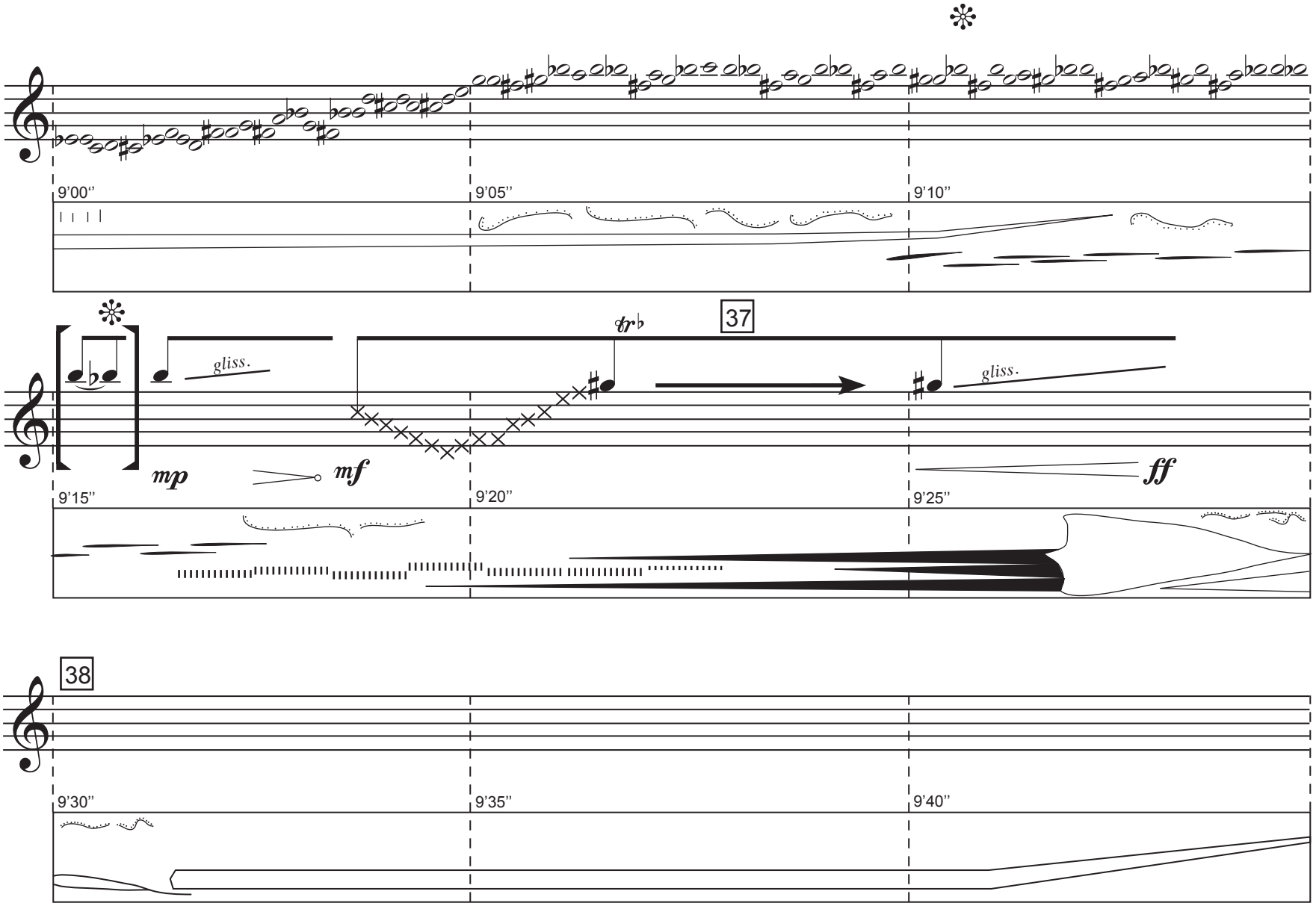

20
increase speed of trem as dynamic increases
mp
ff
mf
f
mf
f
mf
5'15''
5'20''
5'25''
21
22
barely speaking, airy, loud flz.
23
f
mp
5'30''
5'35''
5'40''
24
tr
(false - same note, different fingering, key clatter)
25
mf
5'45''
5'50''
5'55''

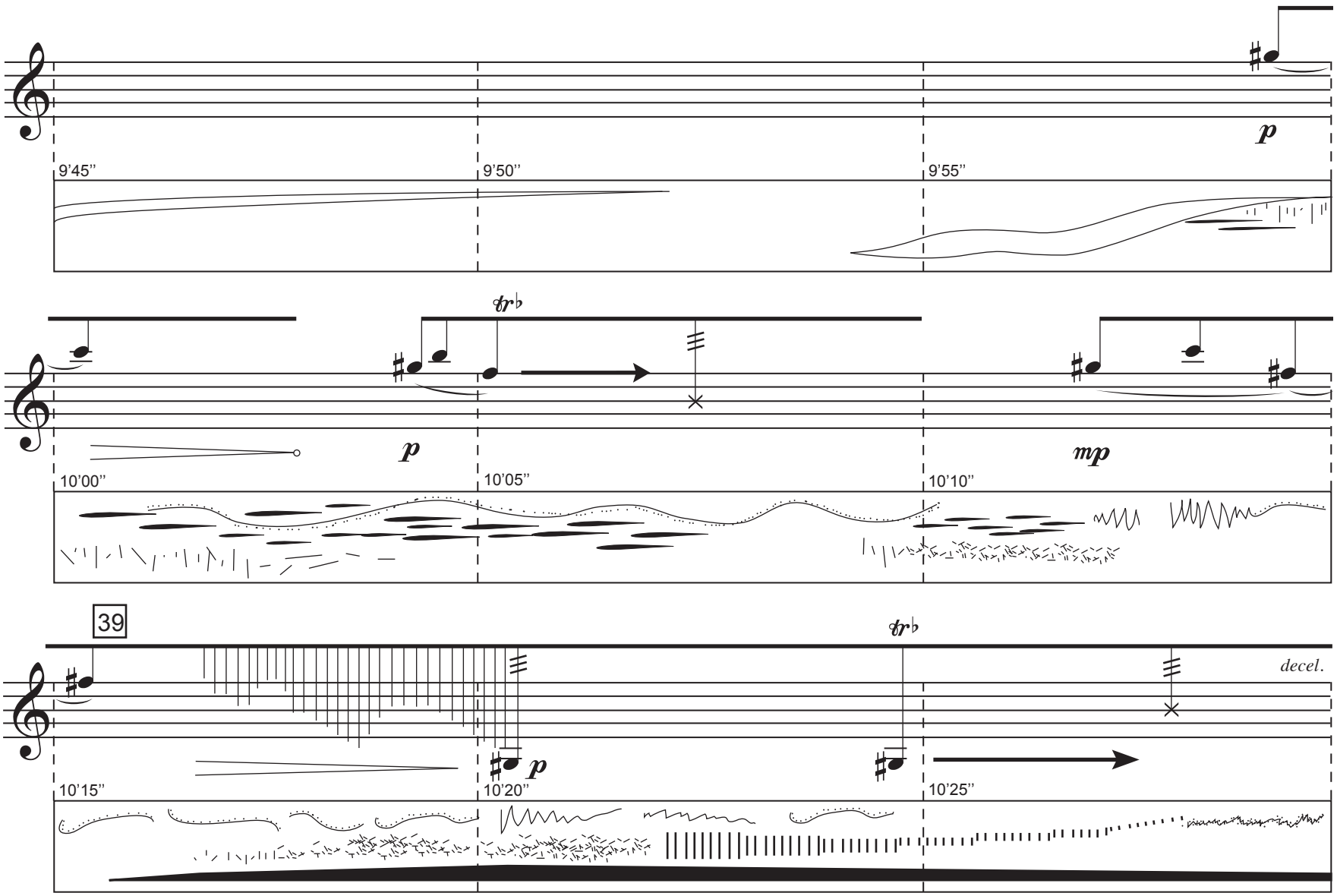

attacks + air more prominent than note
26
th tu T th th T tu th tu th tu tu th T
27
f
6'00''
6'05''
6'10''
28
faster, even, 'murmuring'
29
more attack than note
p
ff
6'15''
6'20''
6'25''
sim.
sim.
sim.
30
fff
6'30''
6'35''
6'40''

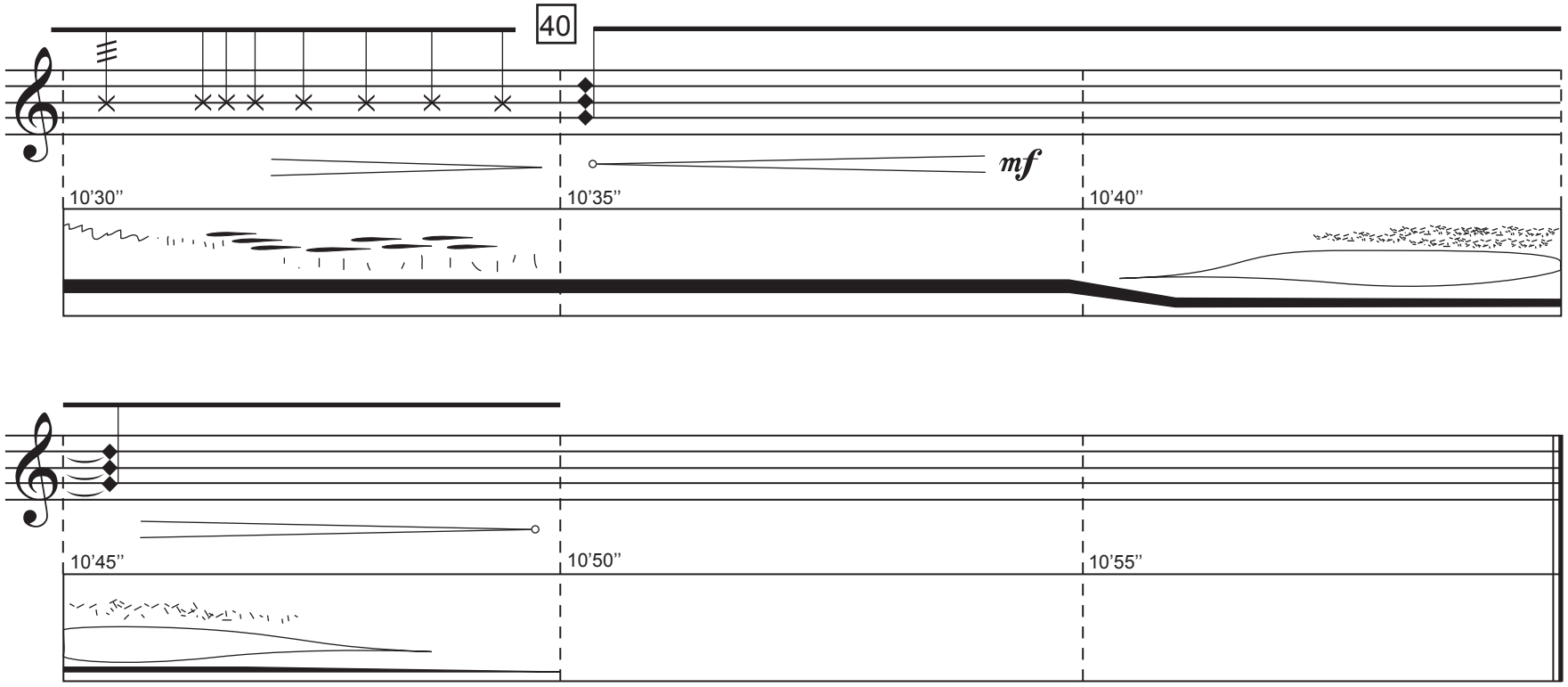

as if polyphonic
mp
f
f
mf
6'45"
6'50"
6'55"
non vib.
f
f
mp
mf
ff
sub. mp
7'00"
7'05"
7'10"
31
mf
mp
gliss.
mf
7'15"
7'20"
7'25"


tr (slow → fast)
tr (fast → slow)
gliss.
mf
mp
mf
7'30"
7'35"
7'40"
32
meandering key clicks
gradually becoming sparser
p
f
7'45"
7'50'
7'55"
33
mf
8'00"
8'05"
8'10"


34
mf
8'15''
8'20''
8'25''
35
8'30''
8'35''
8'40''
36
murmuring.....as fast as possible
gliss.
f
8'45''
8'50''
8'55''


9'00''
9'05''
9'10''
37
gliss.
tr
gliss.
mp
mf
ff
9'15''
9'20''
9'25''
38
9'30''
9'35''
9'40''


p
9'45''
9'50''
9'55''
tr
p
mp
10'00''
10'05''
10'10''
39
tr
decel.
p
10'15''
10'20''
10'25''


40
mf
10'30''
10'35''
10'40''
10'45''
10'50''
10'55''