How Much Better if Plymouth Rock Had Landed on the Pilgrims

David Rosenboom

(collected notations)

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Introductory Note

How Much Better if Plymouth Rock Had Landed on the Pilgrims is a body of work developed through continuous practice and aural transmission, utilizing particular musical, technical, and active focused listening practices, without relying a great deal on notating structural forms in typical Western style. The documentation of the overall work lies in experiencing these practices and passing them on, in performances, and in an archive of recordings. This collection contains a combination of original manuscripts and some of the subsequent notations used to develop later performances and recordings.

At the time of its origin, *How Much Better if Plymouth Rock Had Landed on the Pilgrims* functioned more like a way of life than a piece, emphasizing individual practice, collaboration, and emergence. It is both strict, asking for discipline, and very free, offering opportunities for creative growth.

The work's nine sections have been given subtitles as follows:

Section I (essential tension to universe)
Section II (symmetrical harmonies in chaotic orbits)
Section III (world)
Section IV (life)
Section V (humanity)
Section VI (culture)
Section VII (impression)
Section VIII (unification)
Section IX (links)

Many varied realizations have emerged, and a number of them have been recorded and released. Creative musicians are encouraged to contribute to the continued evolution of this practice.

Additional Notes on Sections

Section I (essential tension to universe) — a composition koan to be realized through personal contemplation of infinite possibilities. An example realization for twenty celli is provided.

Section II (symmetrical harmonies in chaotic orbits) — to date, this has been realized with voltage-controlled, chaotic frequency dividers, additional electronics, and other instruments. Other possibilities are limitless.

Section III (world) — find an inspiring acoustic environment and follow the score prompt. An example of frequencies selected for a realization in a large subterranean space are shown.

Section IV (life) — examples from a realization tuned for Central Park, New York are provided. A performance could be outdoors. Another possibility is to make field recordings with which musicians may interact in other spaces, treating sounds as their scores.

Section V (humanity) — the original manuscript's pattern materials are provided along with parts prepared later for instruments in various keys. Realizations for electronic systems and instrumentalists from around the world have been made and are encouraged.

Section VI (culture) — both original and rewritten scores are provided for convenience. Realizations for varied ensembles, including dual progressive rock bands, have been made.

Section VII (impression) — the original manuscript shows an open-form, gradual process piece. Materials are also provided showing how a piano was tuned to match instruments in a Balinese gamelan. An altered score for that version is provided, in which the written notes are altered to show the piano keys that must be played on the retuned piano. Instruments from around the world may be used.

Section VIII (unification) — the original manuscript, which invokes a human delay chain, is provided along with materials that were made later for realizations involving multiple trumpets and accompanying keyboard(s). Other instruments may be used, and versions employing electronic delay systems may be made as well.

Section IX (links) — this is a gradual process piece for fast, continuous permutations and combinations of short, three-note patterns. The original score was also known as *Piano Etude I*. That version is provided along with a condensed, one-page score showing the pattern modules with guidelines.

David Rosenboom
May 1, 2021
Valencia, California

a collection of materials from

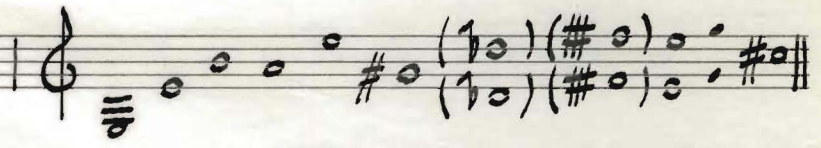
How Much Better If Plymouth Rock Had Landed On The Pilgrims

David Rosenboom
New York / Toronto / ...

1969-1972- ...

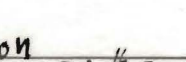
I. Start with one tone. Proceed to the next tone when you know what it should be.

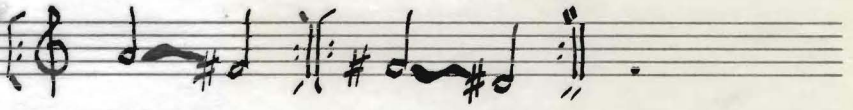
II. A piece using frequency dividers, Pythagorean intervals and improvisations on tones that enter in the following order:



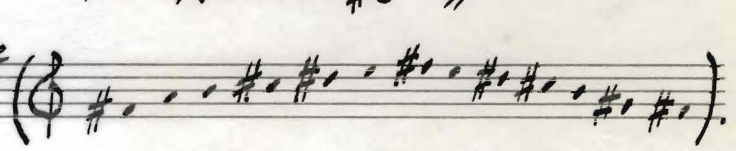
III. Tune the pieces to the ecological and geographical resonances of the areas in which they are to be played. As you would according to the acoustic or geological resonances of a room or a canyon. Birds are good instructors.

IV. A piece tuned for Central Park, (72nd Street, West side area).

A. Drones on 

B. Glissandi 

C. Drones on

D. Improvisation mode 

E. Subordinate keys , The wildlife of the area have learned this piece and perform it usually around 5:00 AM each day in Spring. Microtonal intervals are used as tension controling devices.

5/17/69

How Much Better If Plymouth Rock Had Landed On The Pilgrims

Realization of Section I

for Erika Duke-Kirkpatrick

David Rosenboom
1969 and 2008

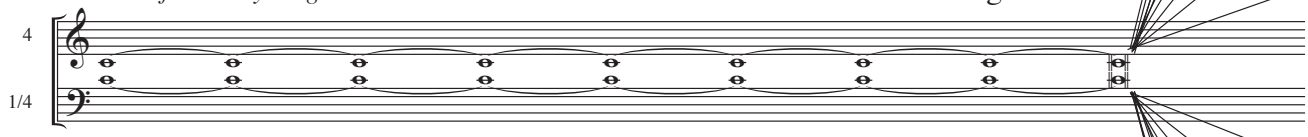
"***Start with one tone. Proceed to the next tone when you know what it should be.***"

essential tension to . . .

Twenty Celli

Hold for a very long time.

glissandi

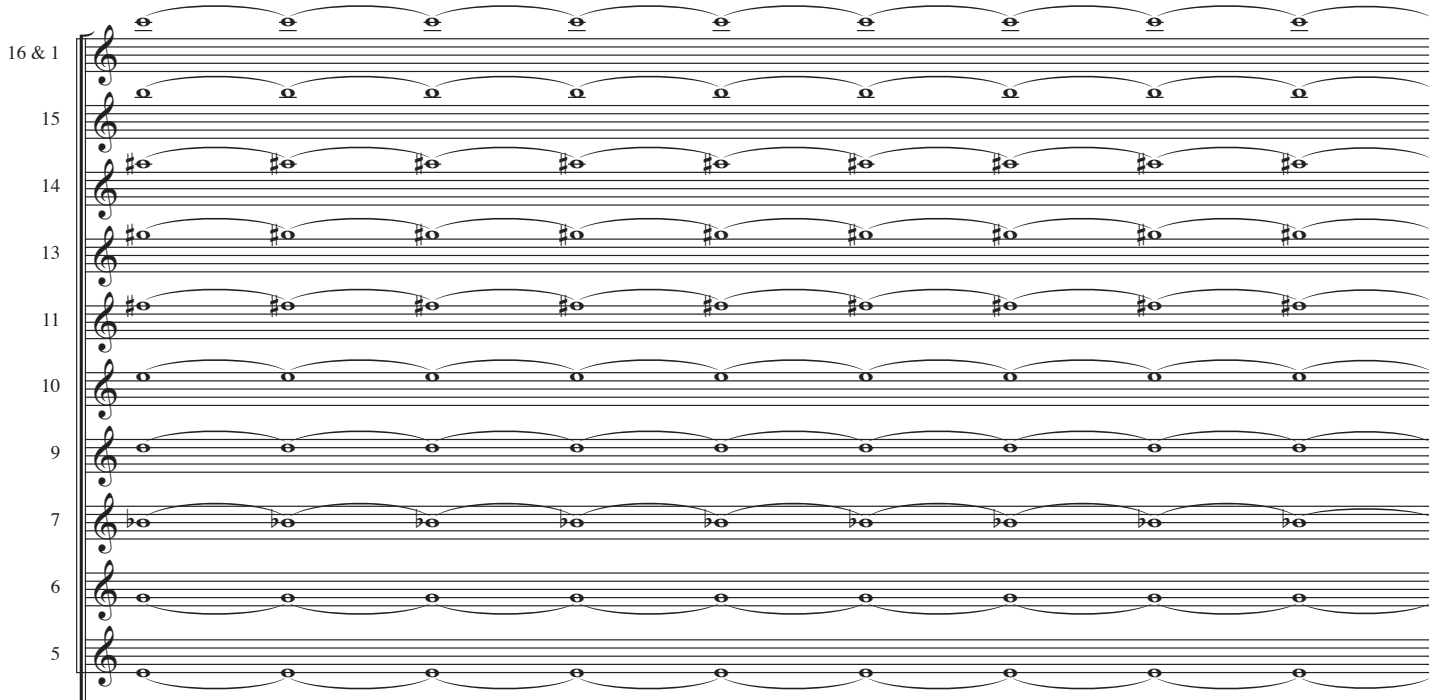


glissandi

See harmonic and subharmonic ratios and frequencies chart.

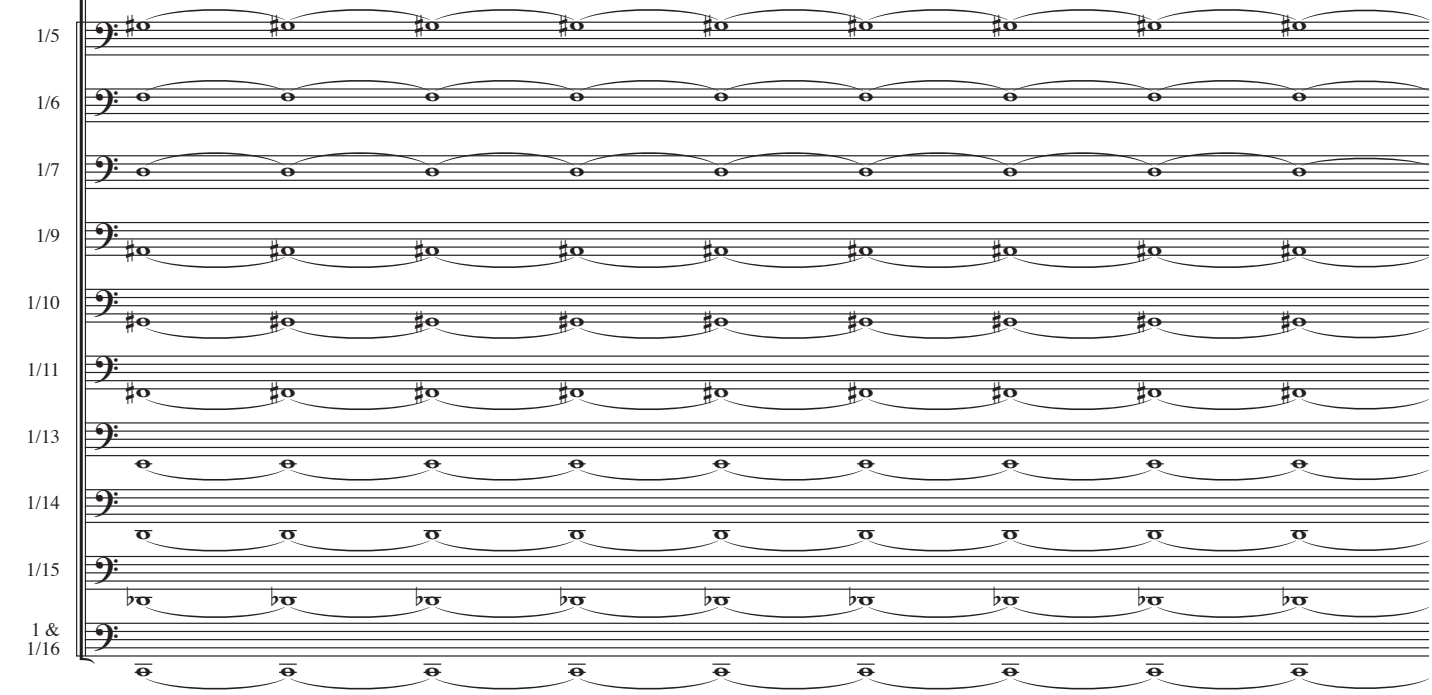
. . . a universe chord

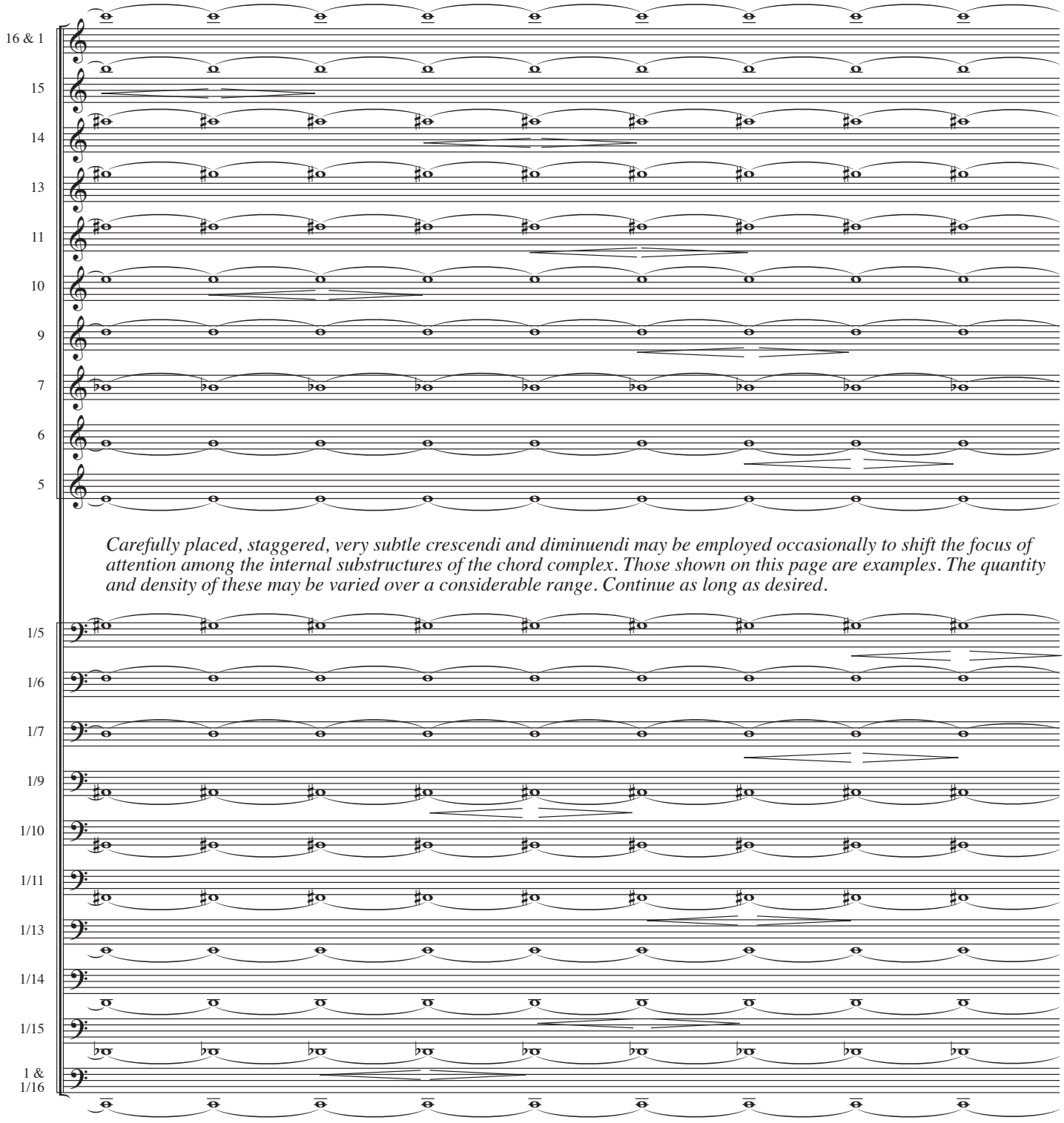
Harmonics



Continue holding for a very long time.

Subharmonics





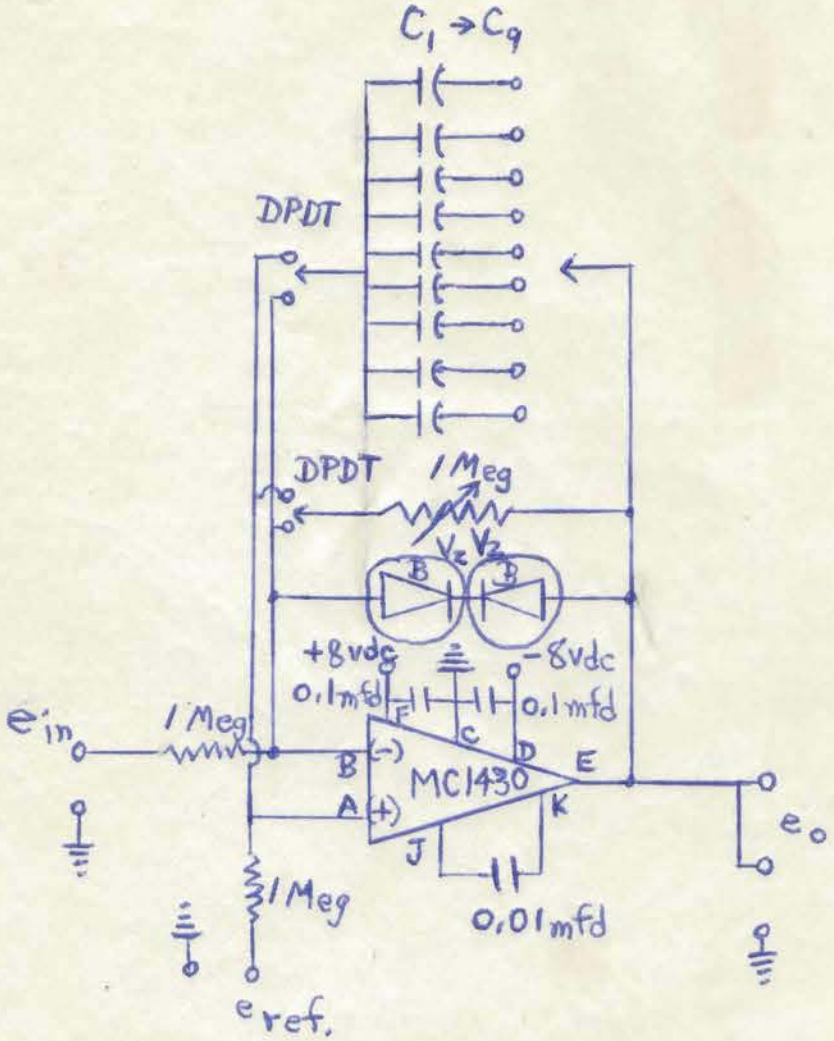
Carefully placed, staggered, very subtle crescendi and diminuendi may be employed occasionally to shift the focus of attention among the internal substructures of the chord complex. Those shown on this page are examples. The quantity and density of these may be varied over a considerable range. Continue as long as desired.

Harmonic and subharmonic ratios and frequencies used in “A Universe Chord”

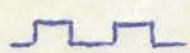
		Harmonic (Mult)			Subharmonic (Div)			
Mult/Div Order	**Contiguous Ratios**	**Nearest Name**	**Freq Hz if C4=256**	**Freq Hz if A4=440**	**Nearest Name**	**Freq Hz if C4=256**	**Freq Hz if A4=440**	**Hrm/Sbhrm Diad Ratios**
16	1.067	C6	1024.00	1046.56	C2	64.00	65.41	16/1
15	1.071	B5	960.00	981.15	C#2	68.27	69.77	225/16
14	1.077	A#5	896.00	915.74	D2	73.14	74.75	49/4
13	1.083	G#5	832.00	850.33	E2	78.77	80.50	169/16
12	1.091	G5	768.00	784.92	F2	85.33	87.21	9/1
11	1.100	F#5	704.00	719.51	F#2	93.09	95.14	121/16
10	1.111	E5	640.00	654.10	G#2	102.40	104.66	25/4
9	1.125	D5	576.00	588.69	A#2	113.78	116.28	81/16
8	1.143	C5	512.00	523.28	C3	128.00	130.82	4/1
7	1.167	A#4	448.00	457.87	D3	146.29	149.51	49/16
6	1.200	G4	384.00	392.46	F3	170.67	174.43	9/4
5	1.250	E4	320.00	327.05	G#3	204.80	209.31	25/16
4	1.333	C4	256.00	261.64	C4	256.00	261.64	1/1
3	1.500	G3	192.00	196.23	F4	341.33	348.85	9/16
2	2.000	C3	128.00	130.82	C5	512.00	523.28	1/4
1	1.000	C2	64.00	65.41	C6	1024.00	1046.56	1/16
			Tempo MM=64	**Tempo** MM=65.41		**Tempo** MM=64	**Tempo** MM=65.41	

Performance Cuitry for
HOW MUCH BETTER IF PLYMOUTH ROCK HAD LANDED ON THE PILGRIMS
David Rosenboom

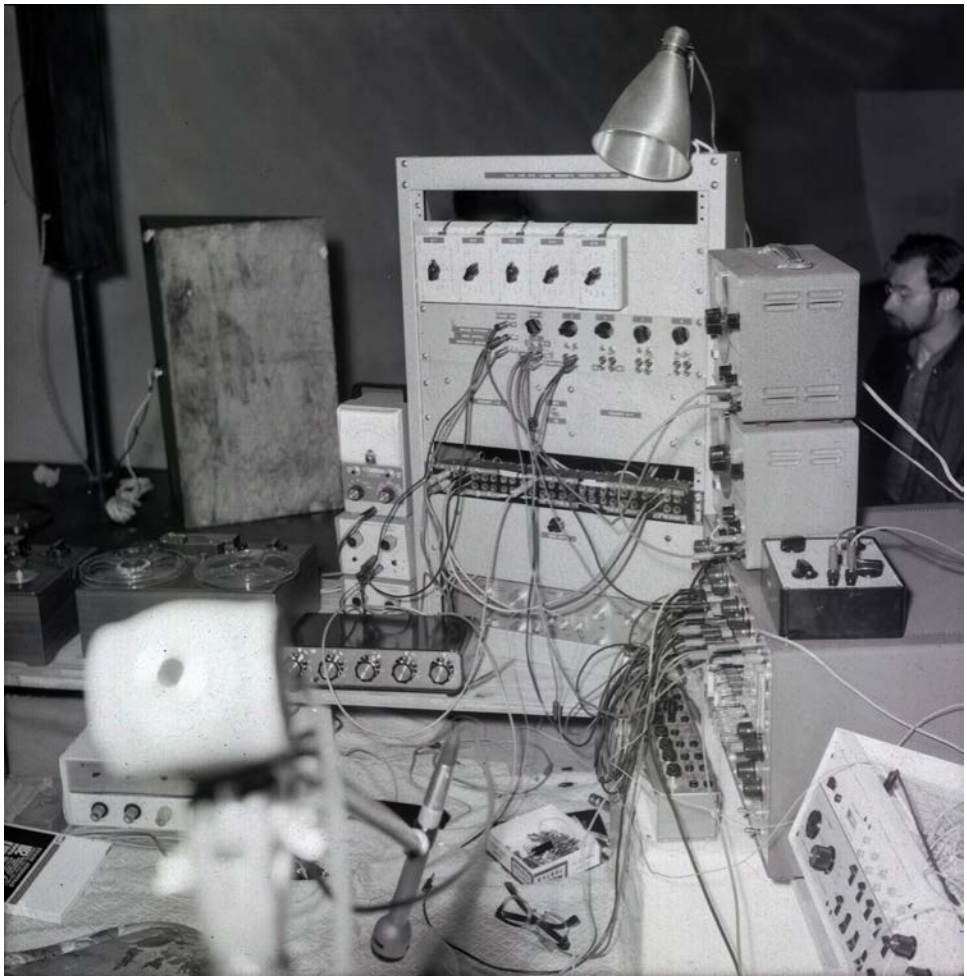
DIAGRAM C:



Repeat for modules 2 through 5. Buss all ground and power connections to single banana jacks for +8, -8, and gnd. V_z is 15 volts. C_1 through C_9 are variable capacitance steps from 0.0001 mfd to 0.22 mfd. Operating formula for Schmitt trigger, (feedback pot and capacitors not connected) is:

for e_{in}  e_0 

$e_0 = +V_z$ IF $e_{in} < e_{ref}$ OR $e_0 = -V_z$ IF $e_{in} > e_{ref}$



Electronic system setup for a performance of *How Much Better if Plymouth Rock Had Landed on the Pilgrims* at the Electric Circus in New York, NY on May 19, 1969. The voltage-controlled, chaotic frequency dividers are in the second panel down from the top of the rack showing six knobs and wires patched to them.

Frequencies used in a subterranean version of Section III

	Freq Hz	Nearest Name
Basic resonance	64.91	C
Final tone	129.82	C
M7th + octave below added, (12th root of 2 * C below)	34.38	C#
Frequency divisions for opening chord		
1/15	69.27	C#
1/13	80.00	E
1/11	94.64	F#
1/10	104.16	G#
1/9	115.78	A#

Sunday approx.

Location recording: 6/17/07 5:40 - 7:05AM

Central Park

birds + other wildlife, general environment

concentrated in tree groves with high canopies off Central Park West in vicinity between 72nd and 77th Streets

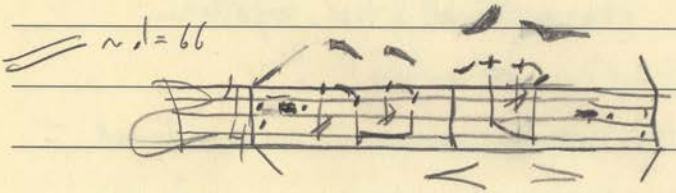
wooded areas, sometimes passing bicyclers, roller skaters, joggers, walkers, service vehicles

ambient traffic + city sound grows gradually -

Marantz PMD 670 solid state Recorder

Audio-Technica AT825 stereo cardiod condenser microphone - hand held

6 tracks recorded



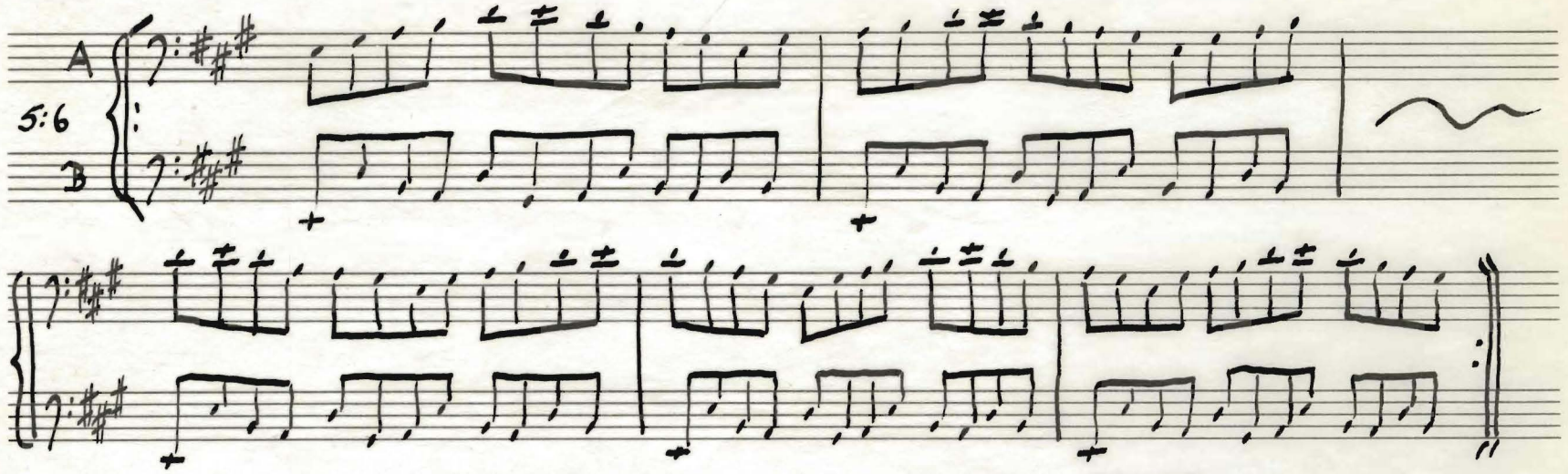
Bird solo given in grove just above 77th St on leaving the park - not recorded - stopped after a few minutes repetition -

maybe basis for a "round"

Two sets of frequencies used in the “Central Park” version of Section IV

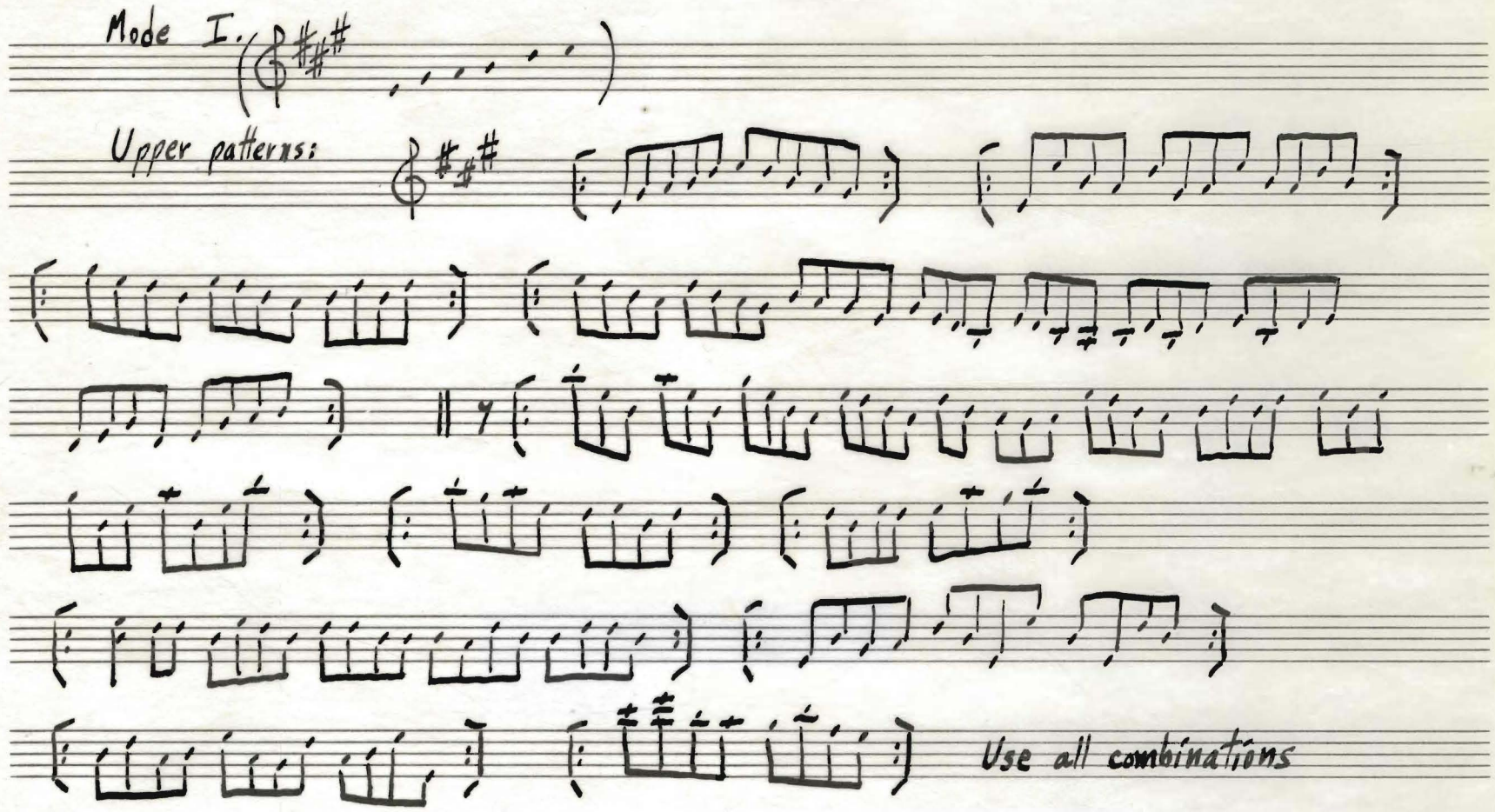
Nearest Name	Freq Hz	Multiplier from lowest frequency
Set 1		
B1	61.74	1.00
B2	123.48	2.00
D#2	154.35	2.50
E2	164.23	2.66
F#2	185.22	3.00
A2	216.09	3.50
Set 2		
C1	65.41	1.00
C2	130.82	2.00
E2	163.53	2.50
F2	173.99	2.66
G2	196.23	3.00
A#2	228.94	3.50

V. Bass pattern



Play in all phases, separately or together, (A+B)

Mode I.



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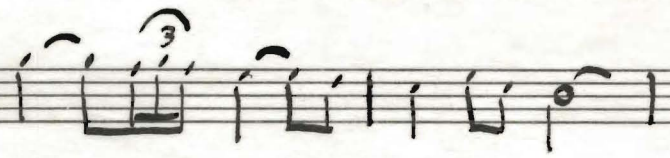


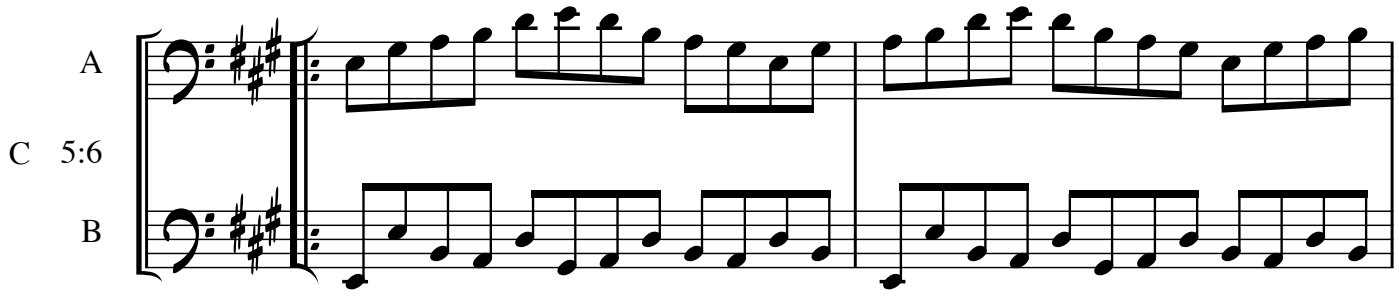
Music Print Corporation—Boulder, Colorado

Section V

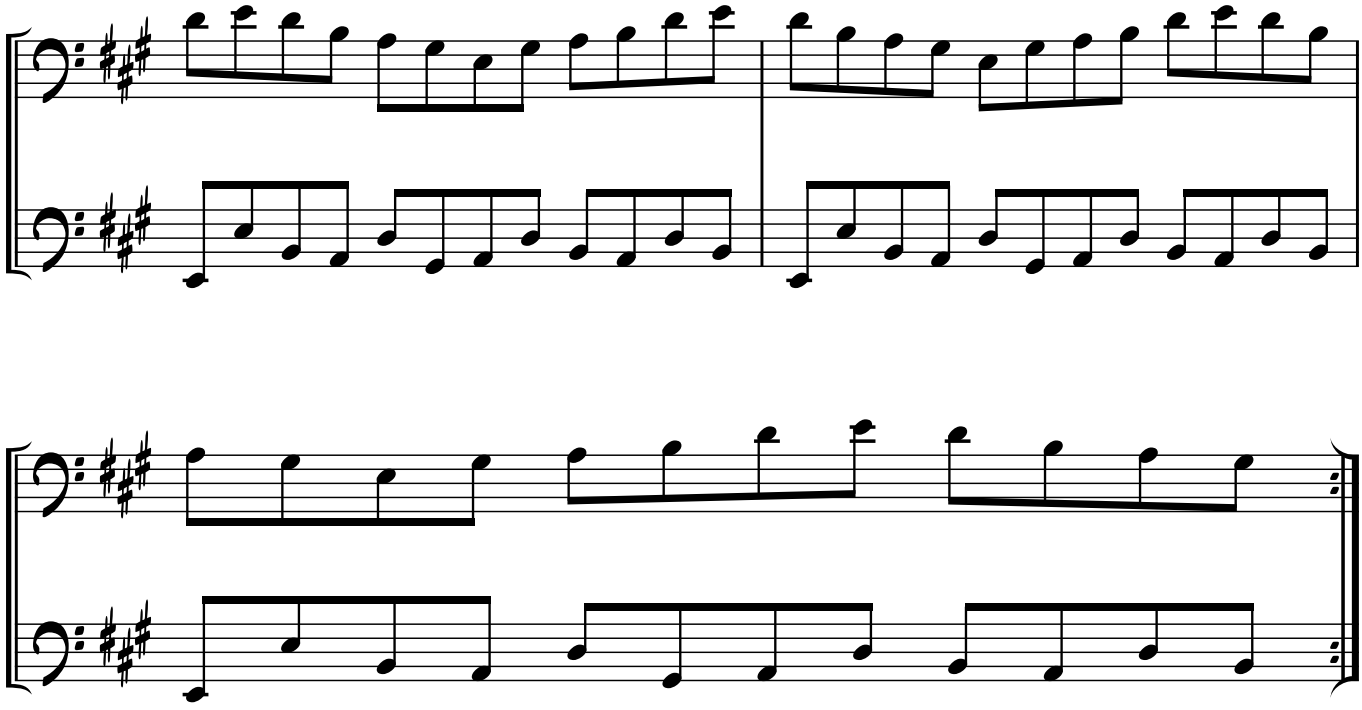
How Much Better If Plymouth Rock Had Landed On The Pilgrims

David Rosenboom (1969)

Bass pattern



Play in all phases, separately or together, (A & B)



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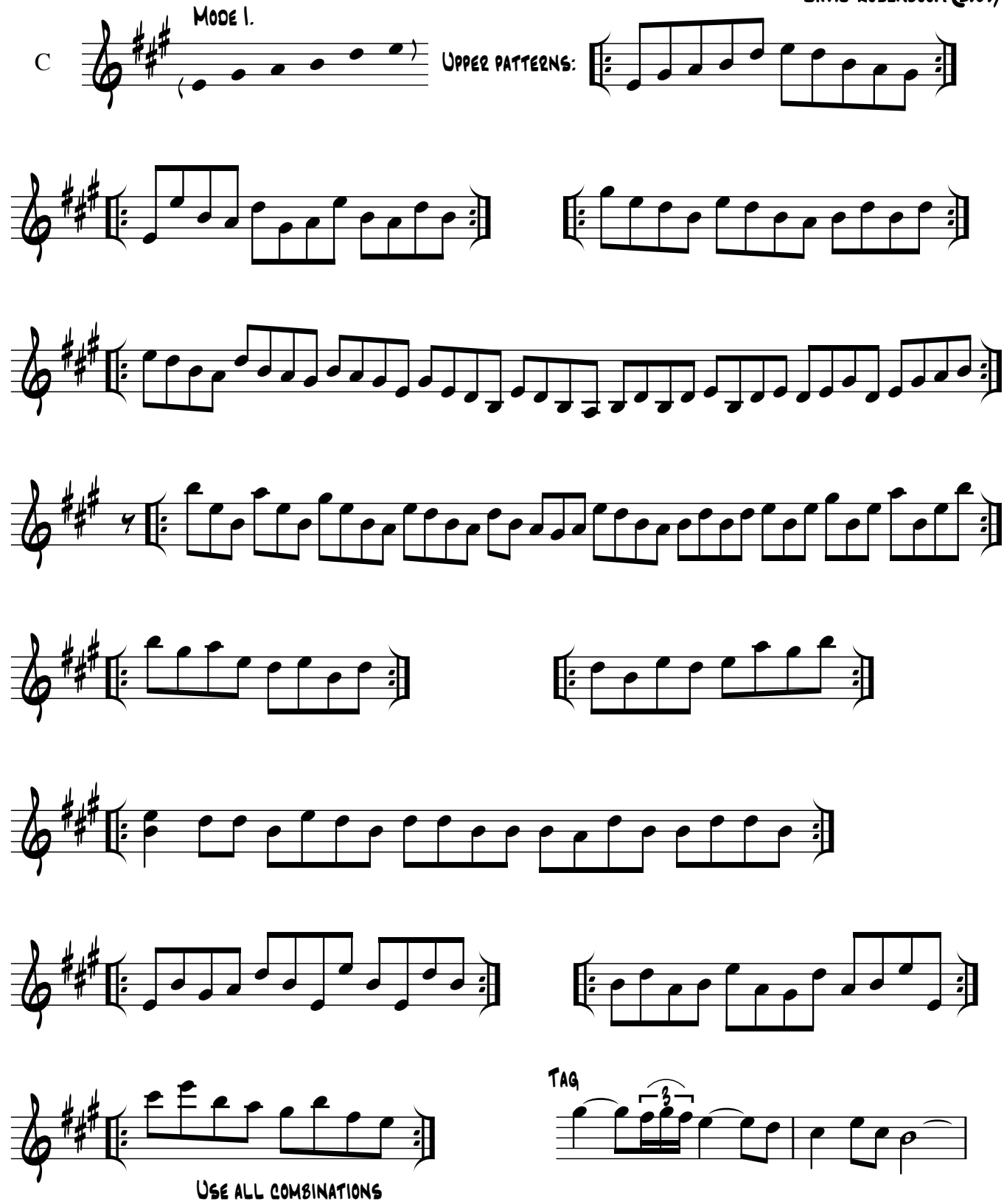

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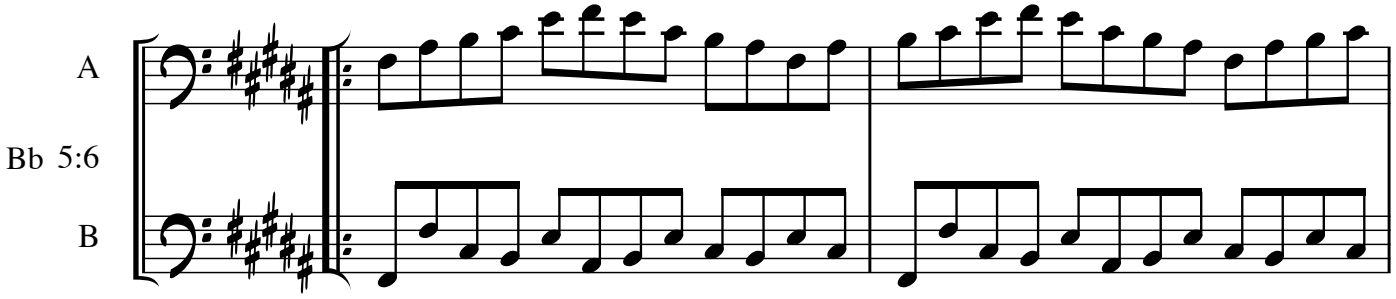

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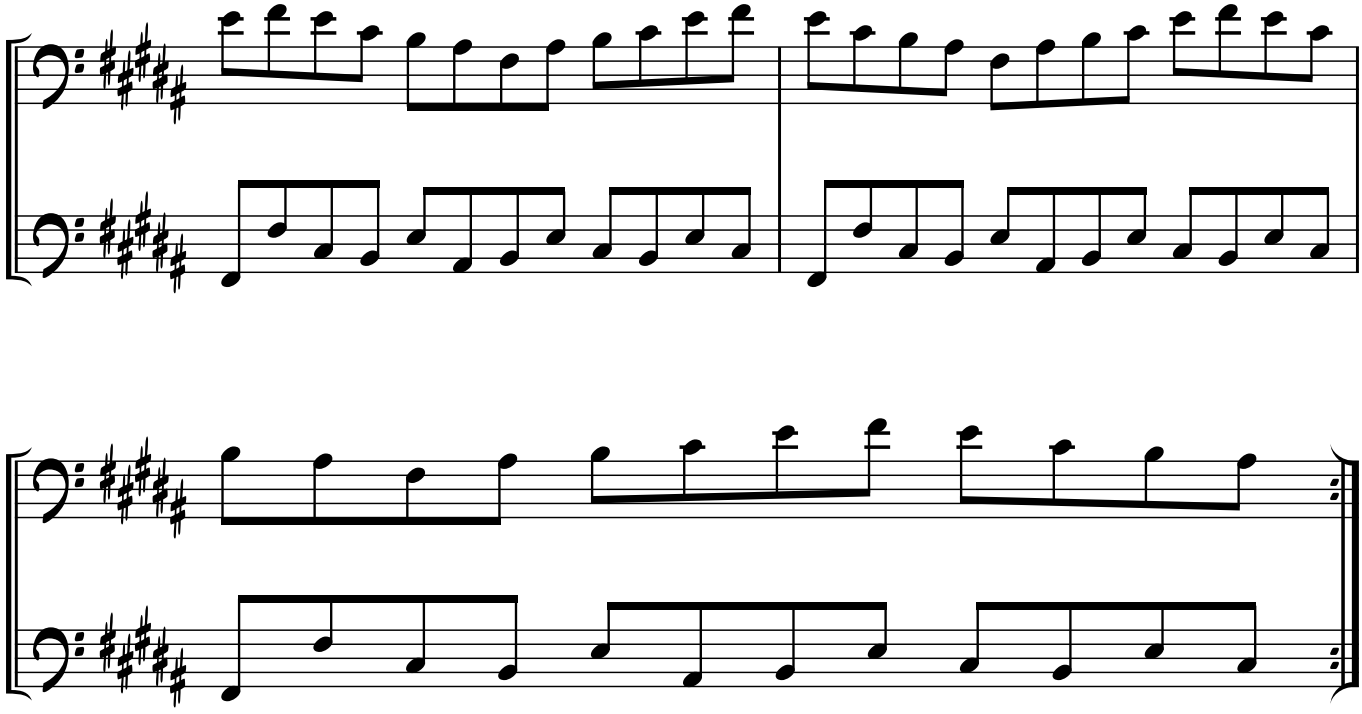

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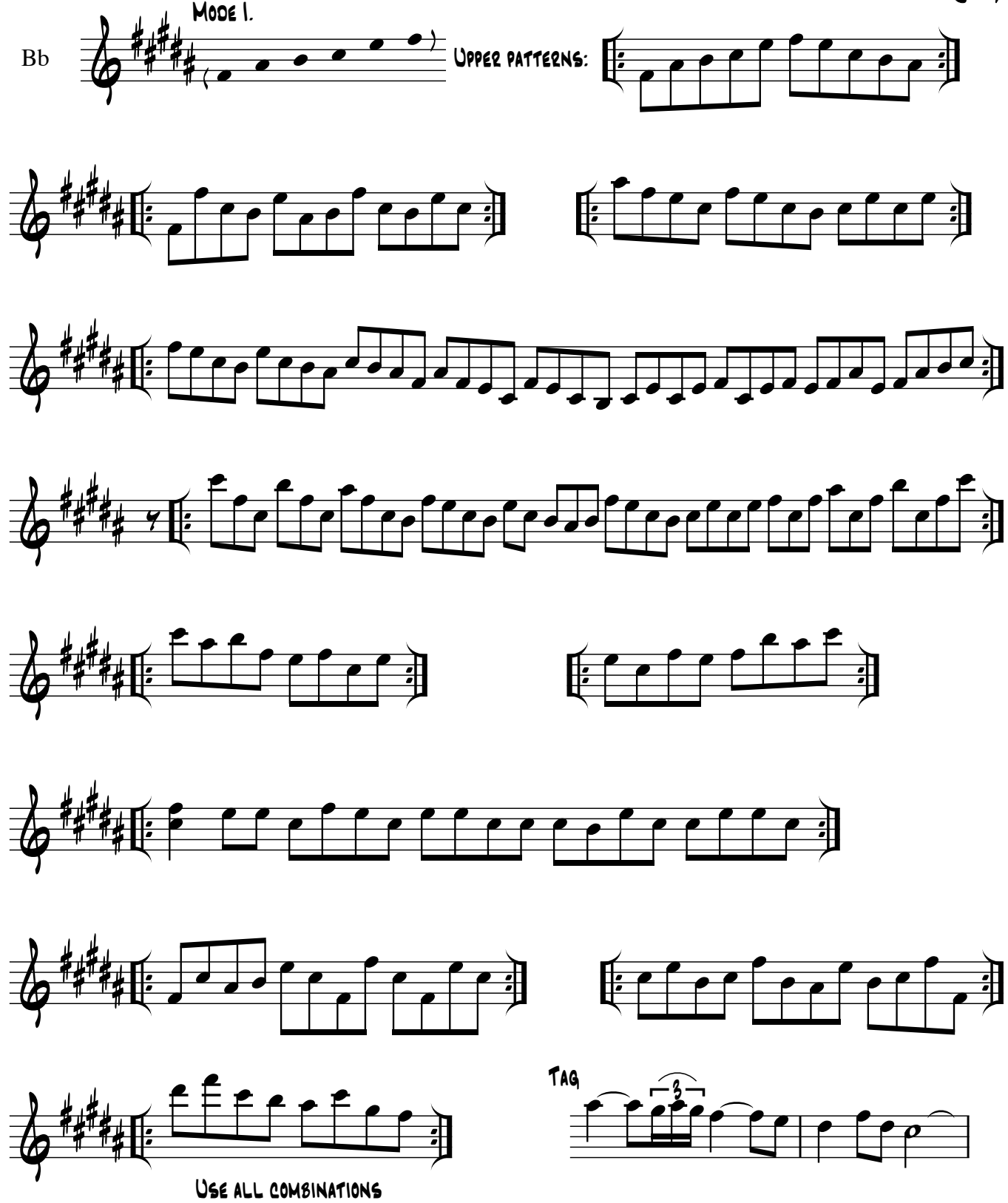

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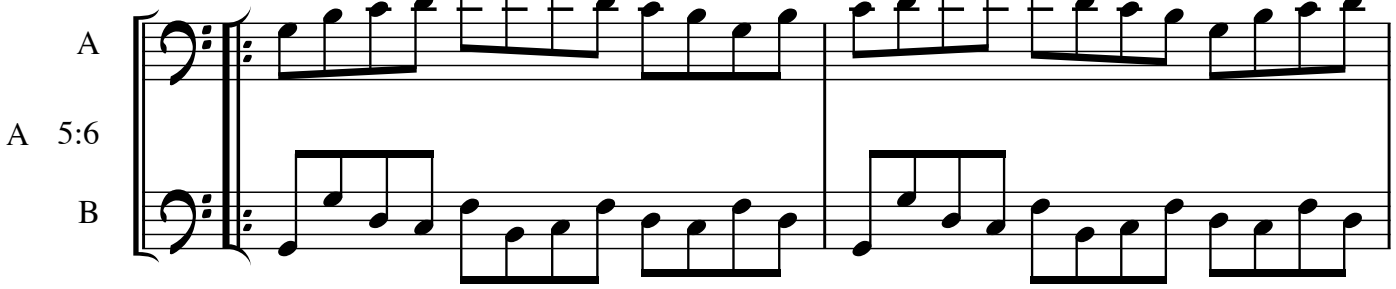
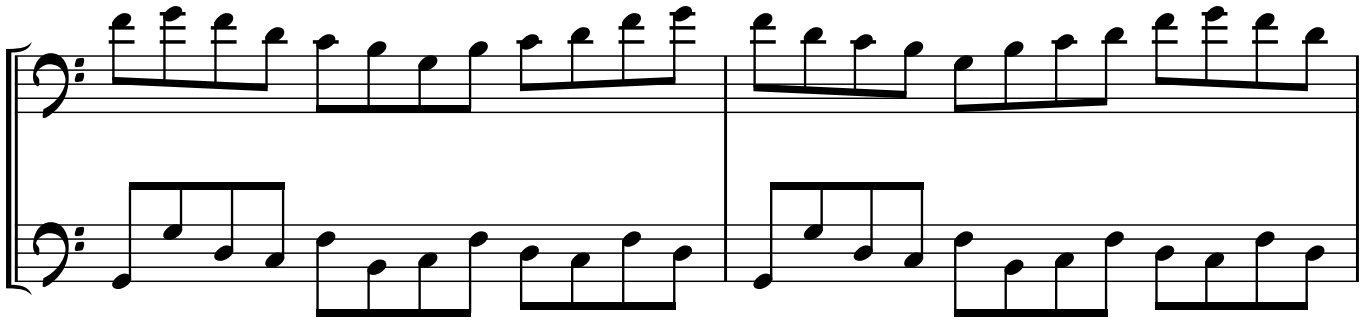
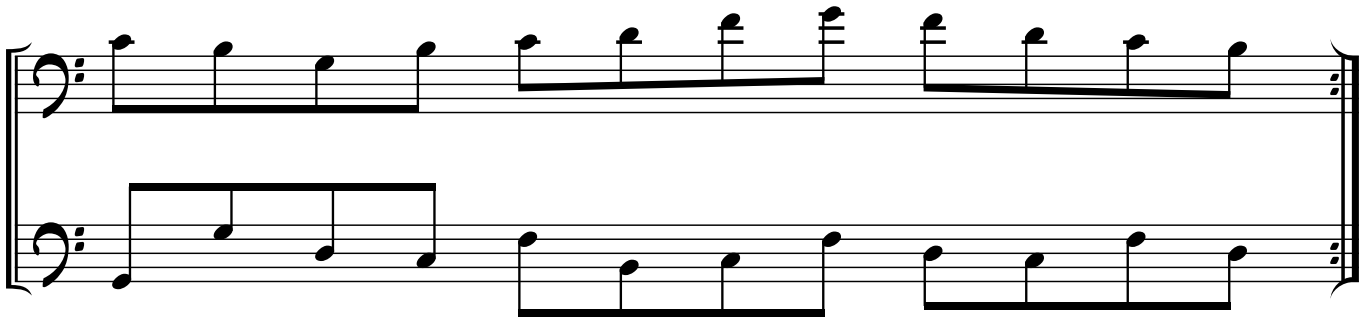
Bass pattern



Play in all phases, separately or together, (A & B)



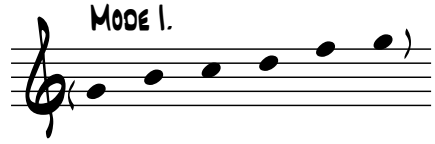


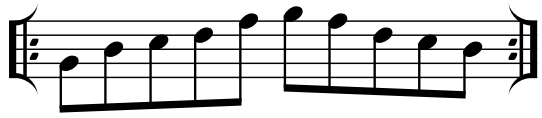
Section V

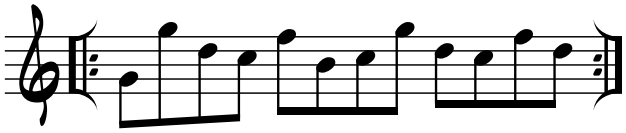
How Much Better If Plymouth Rock Had Landed On The Pilgrims

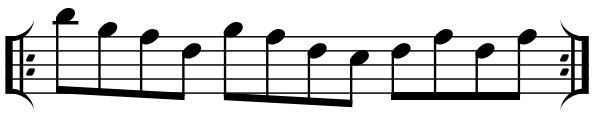
David Rosenboom (1969)

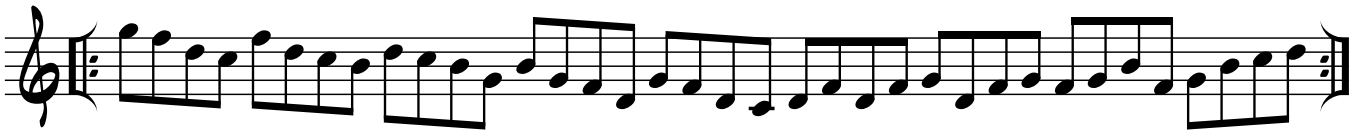
A

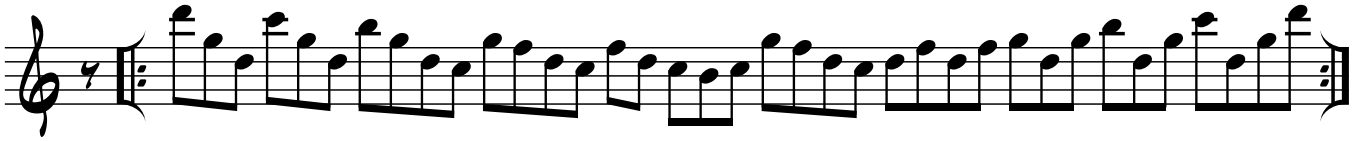


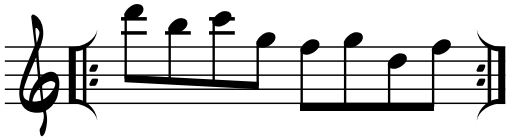


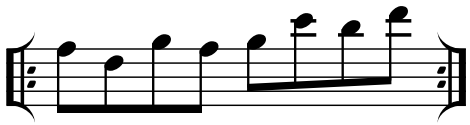


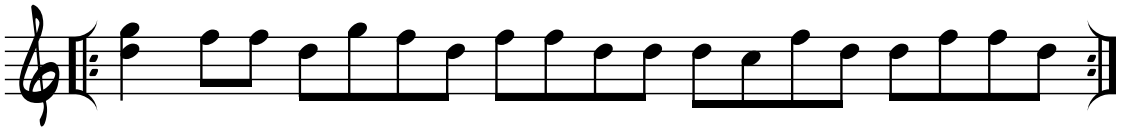


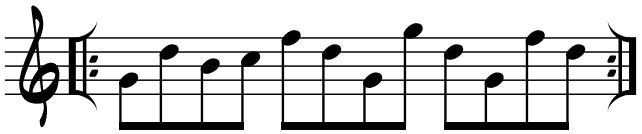


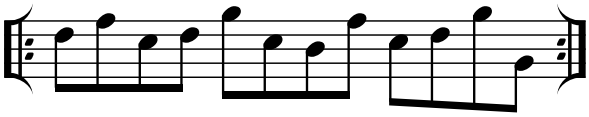


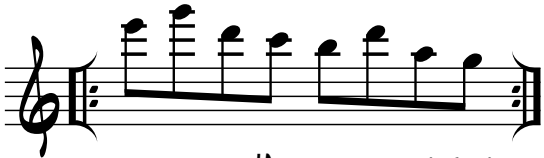


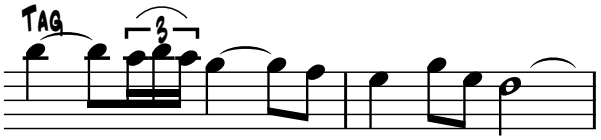












Use all combinations

Section V

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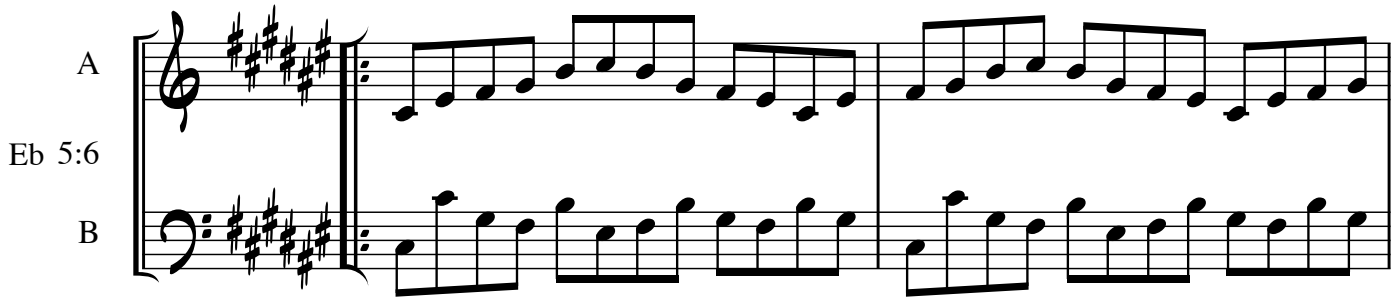
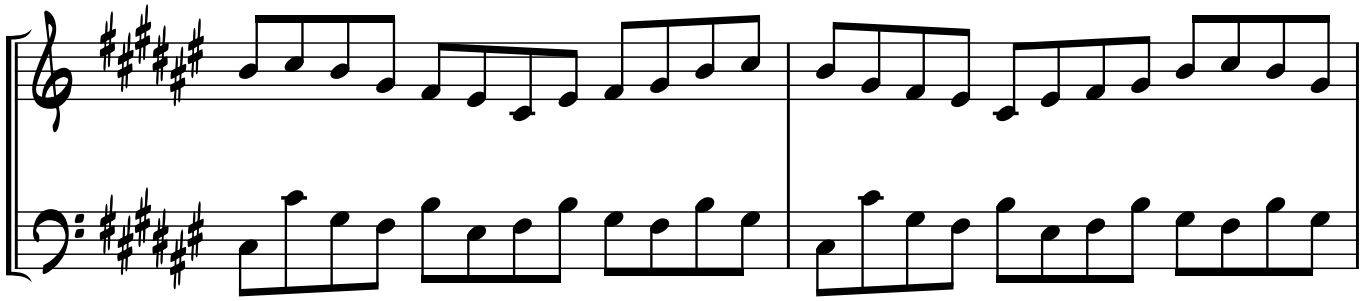
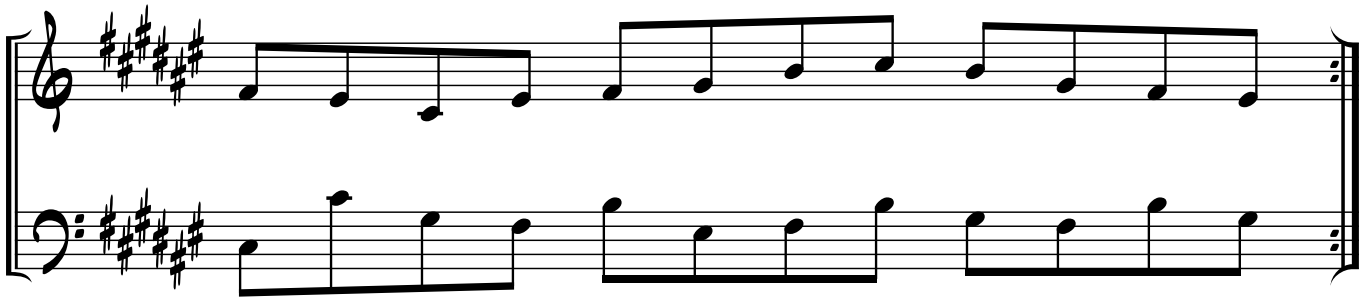
David Rosenboom (1969)

Bass pattern



Play in all phases, separately or together, (A & B)

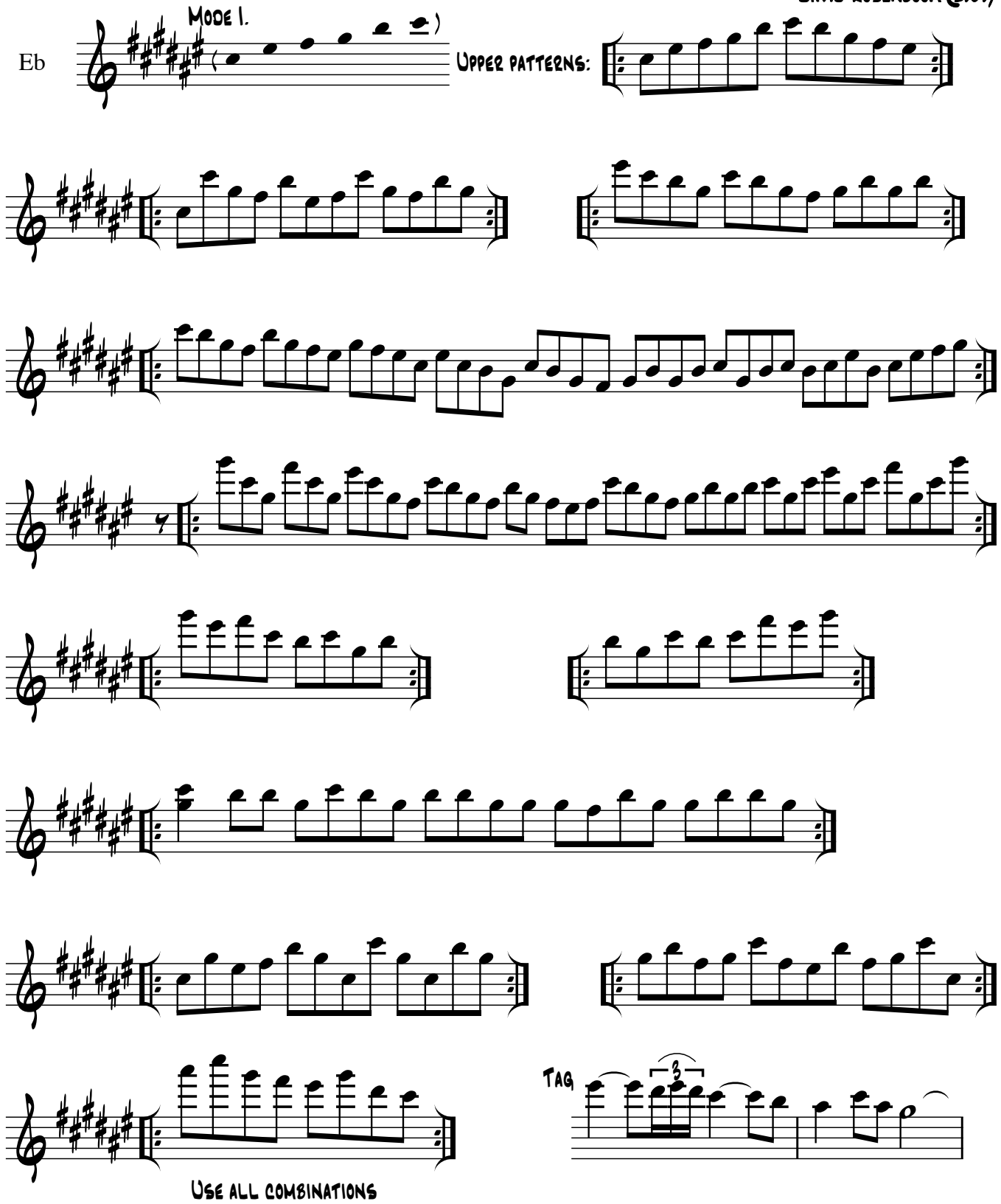




Section V

How Much Better If Plymouth Rock Had Landed On The Pilgrims

David Rosenboom (1969)

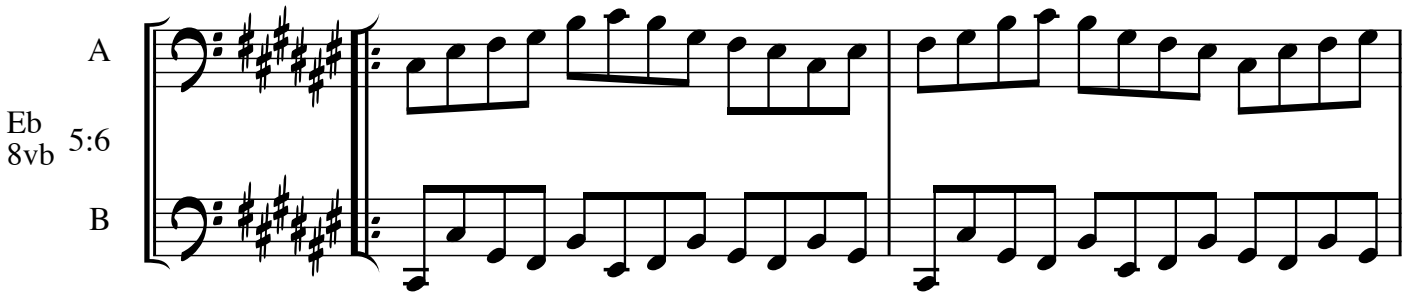


Section V

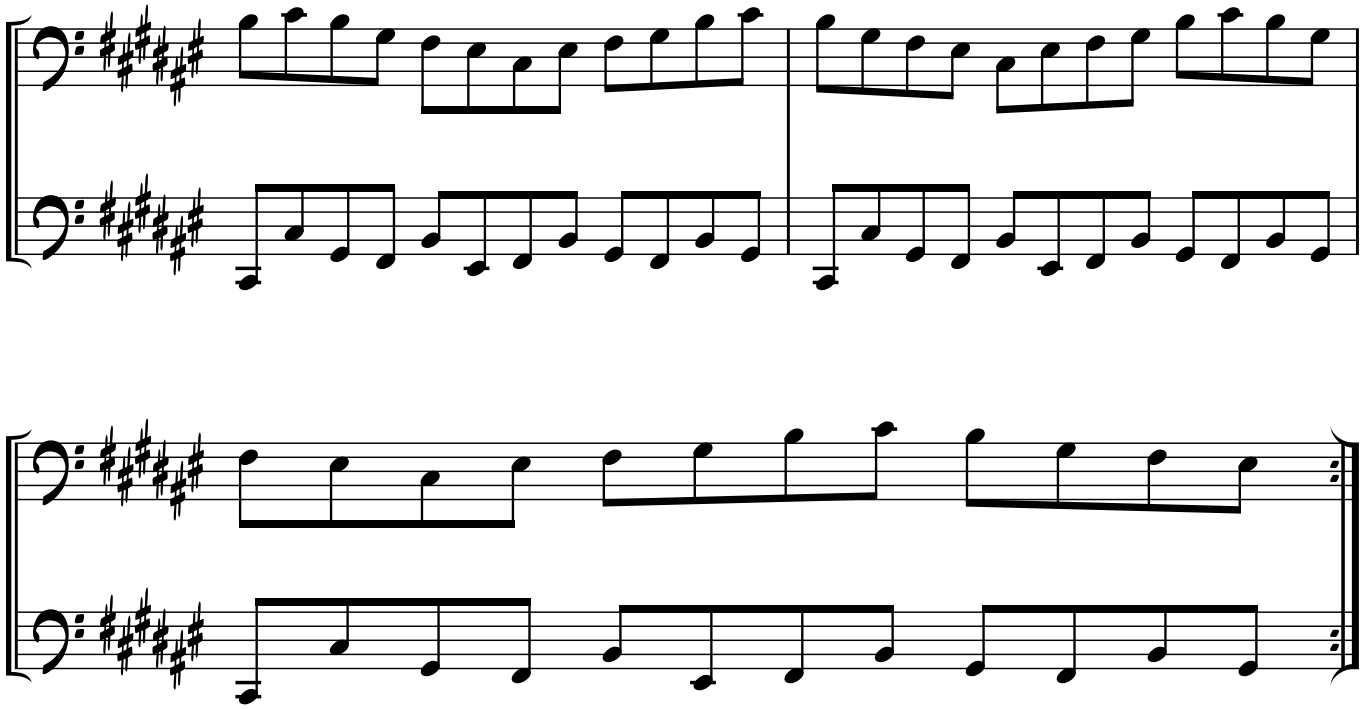
How Much Better If Plymouth Rock Had Landed On The Pilgrims

David Rosenboom (1969)

Bass pattern



Play in all phases, separately or together, (A & B)



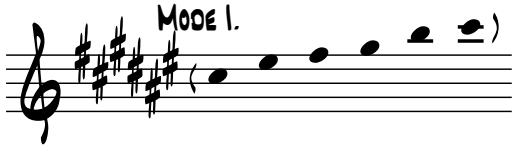
Section V

How Much Better If Plymouth Rock Had Landed On The Pilgrims

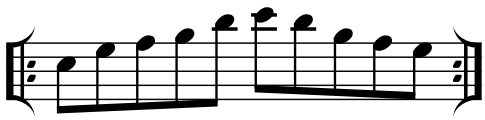
David Rosenboom (1969)

Eb

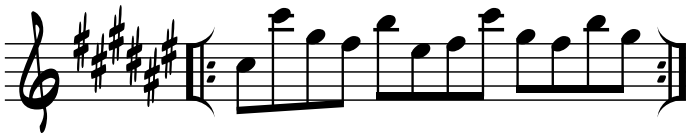
Mode I.

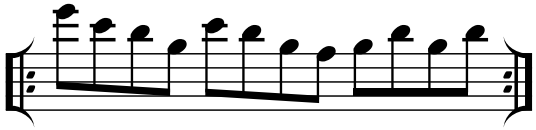


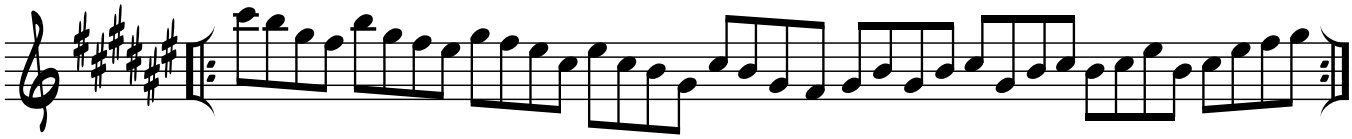
Upper patterns:

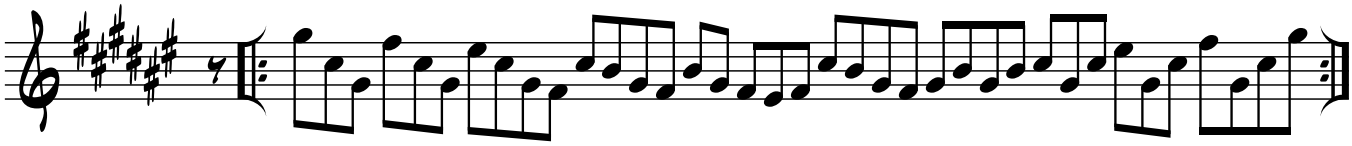


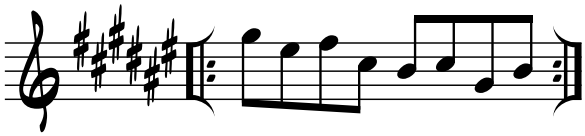
(Some patterns transposed 8vb for ease of reading)

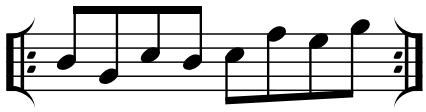


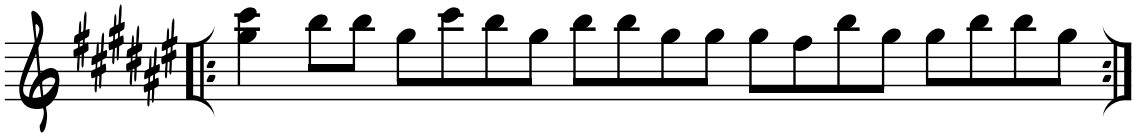


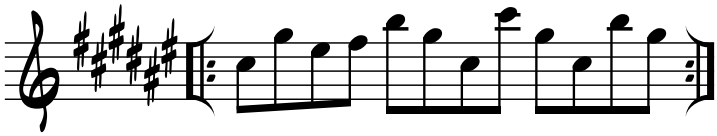


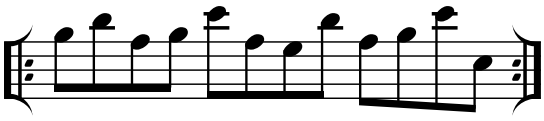


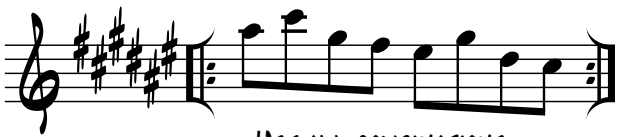






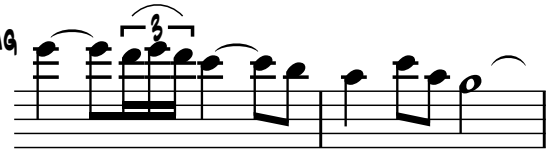




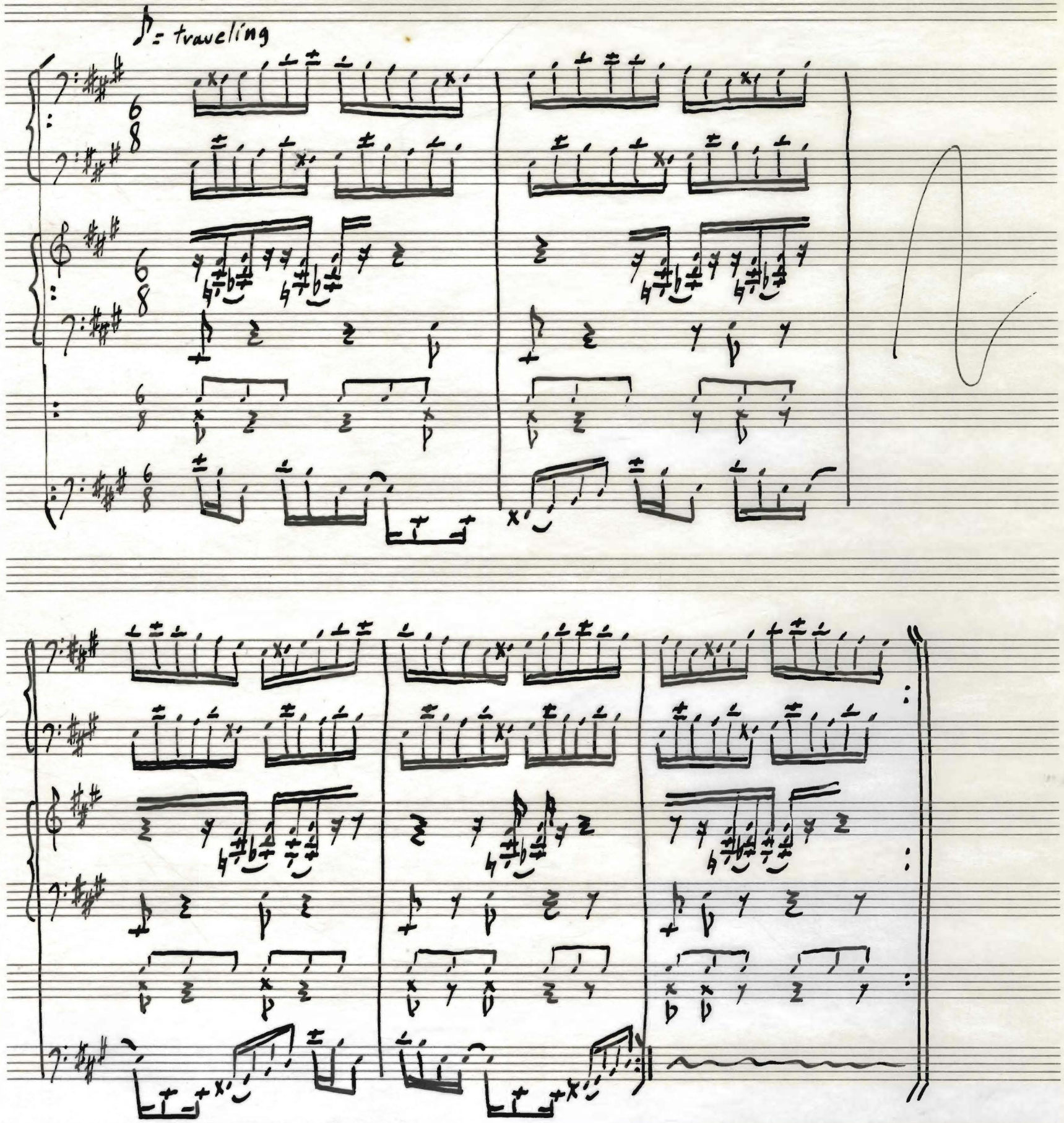


Use all combinations

Tag



VI. Traveling music version of V.

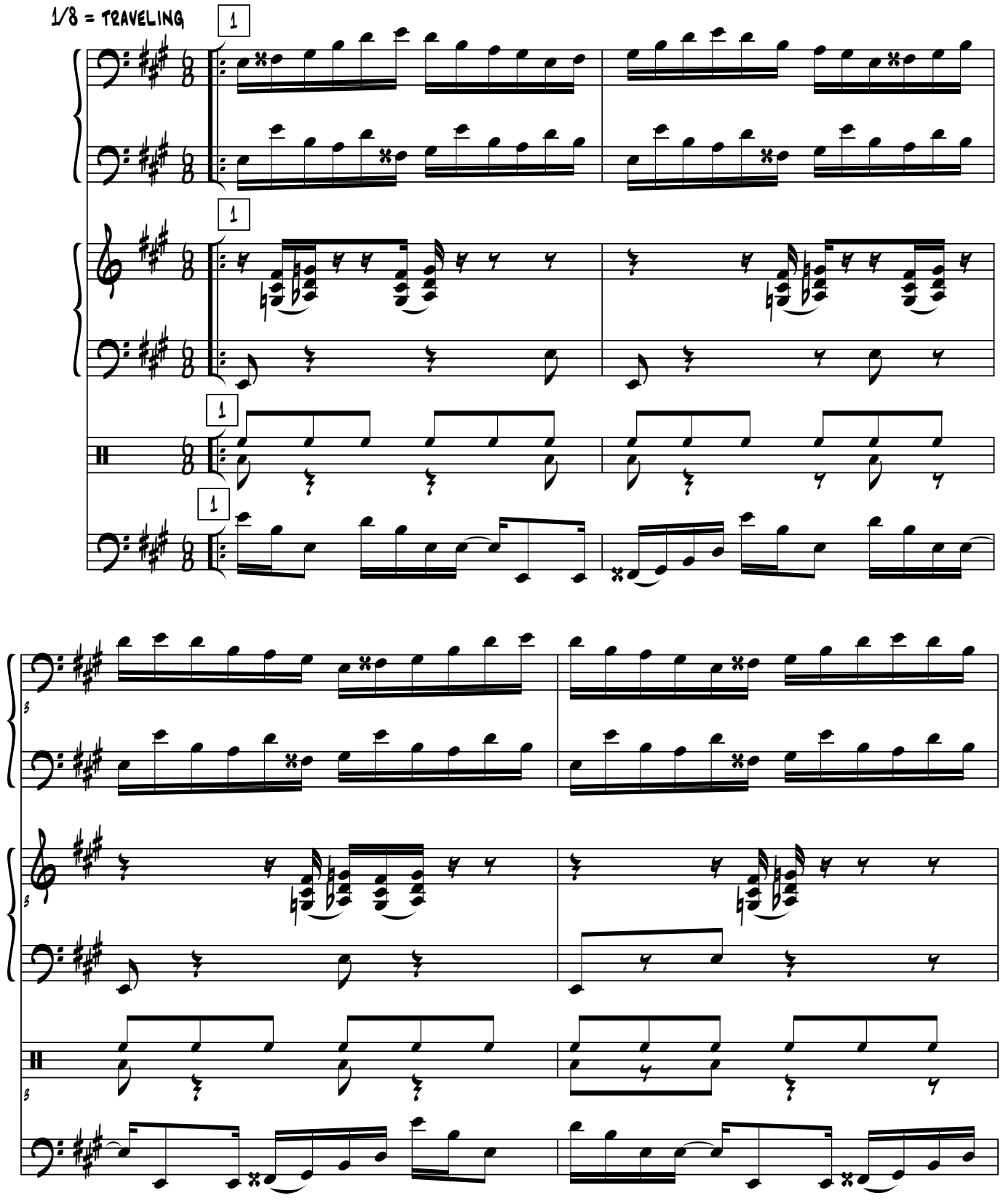


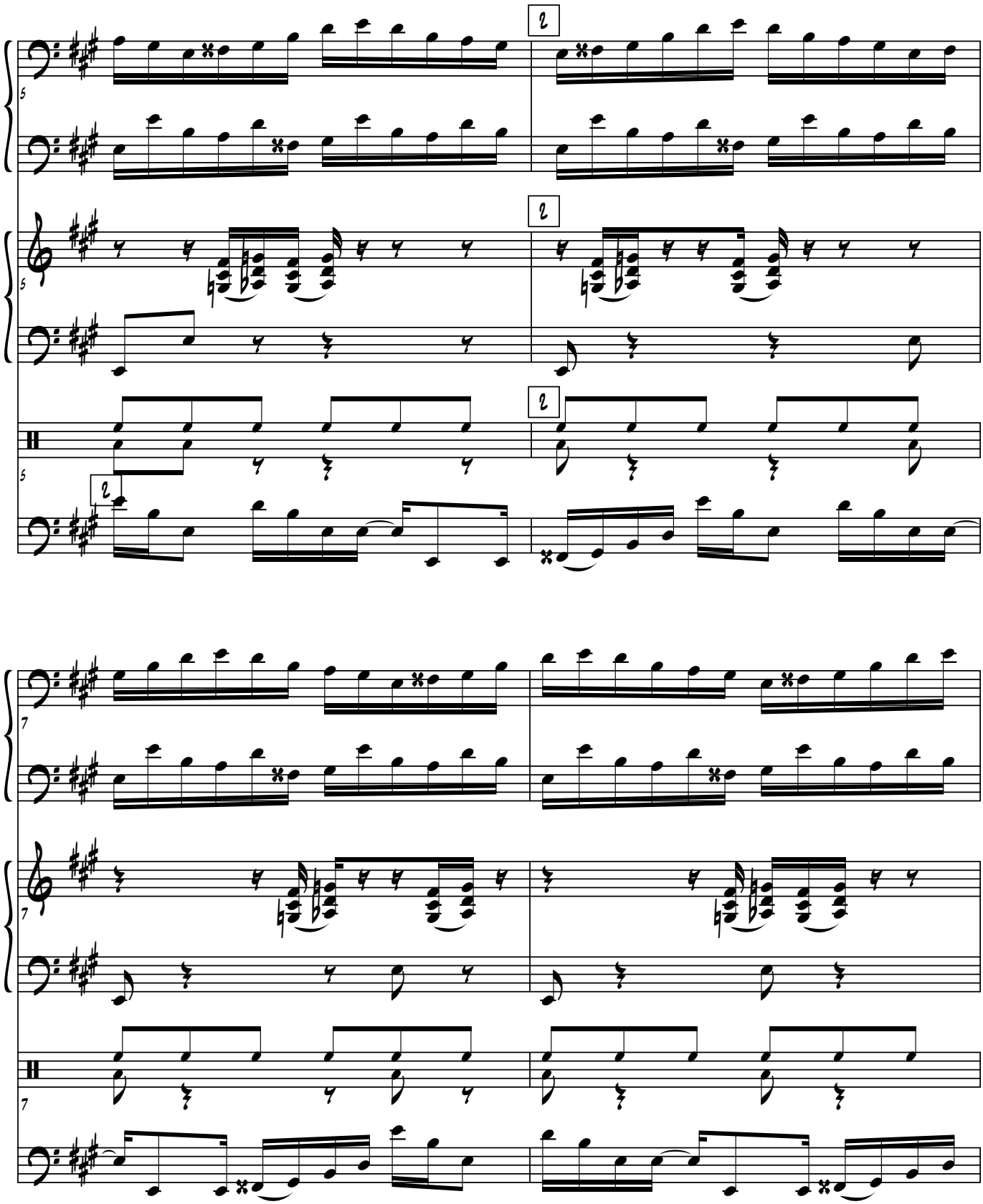
Section VI. Traveling
music version of V.

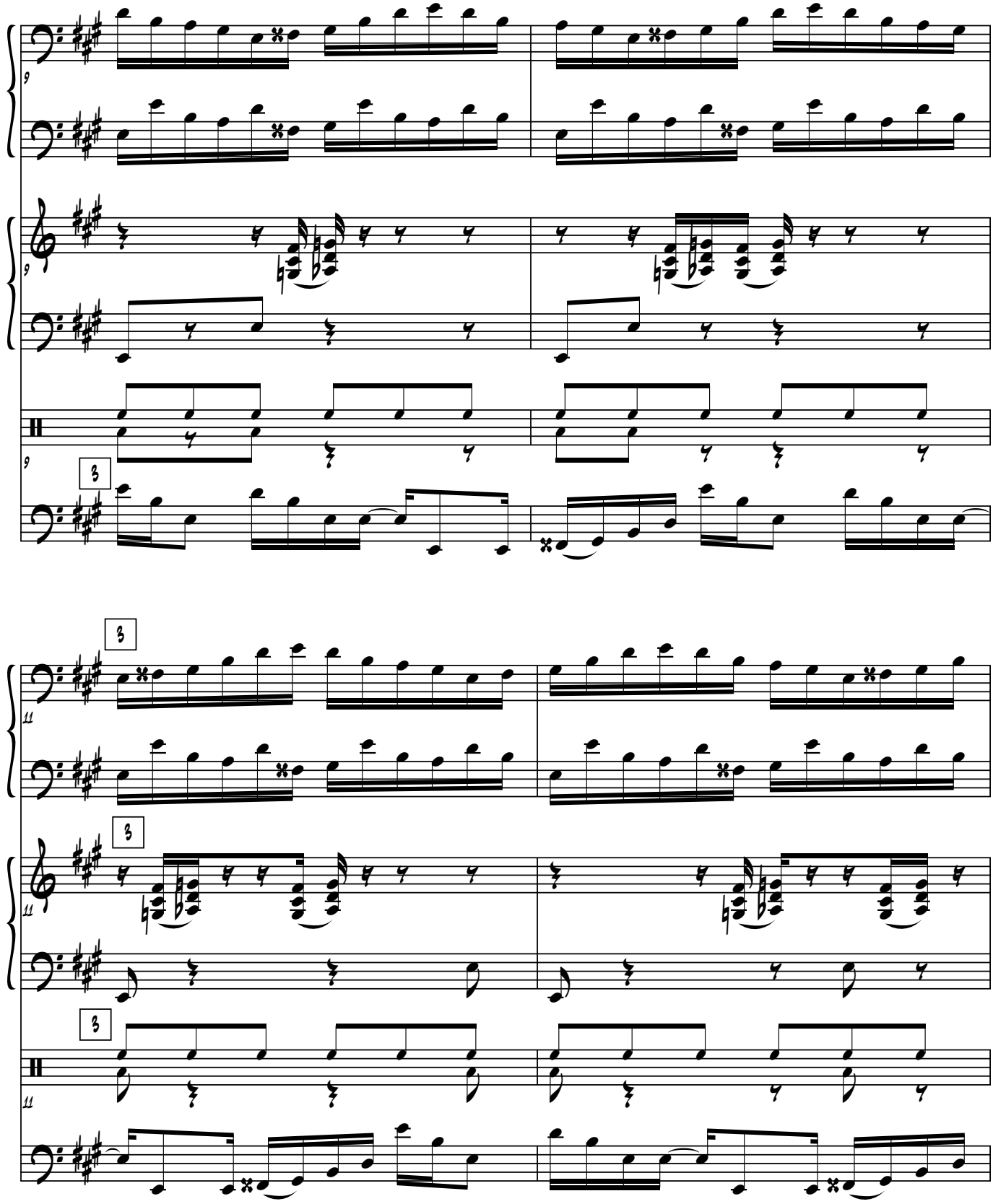
How Much Better If Plymouth Rock Had Landed On The Pilgrims

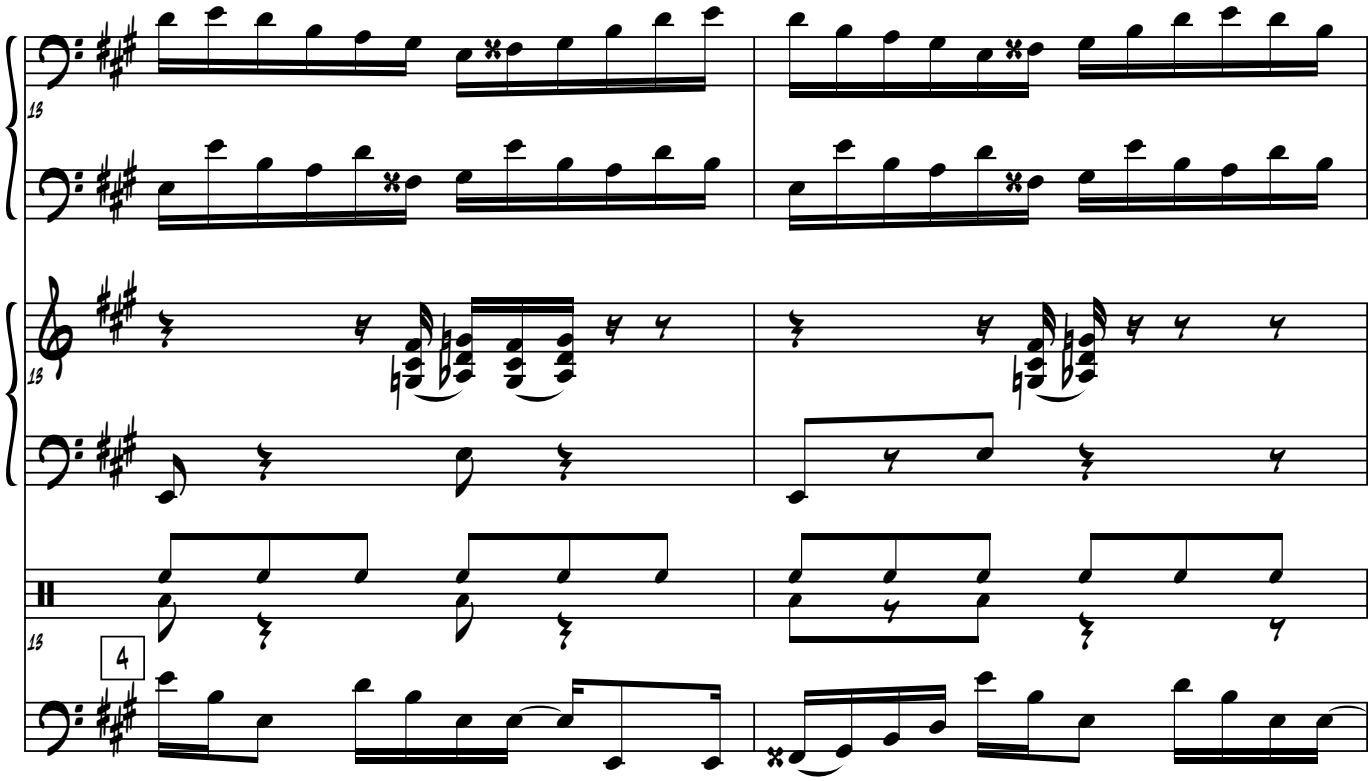
David Rosenboom (1969)

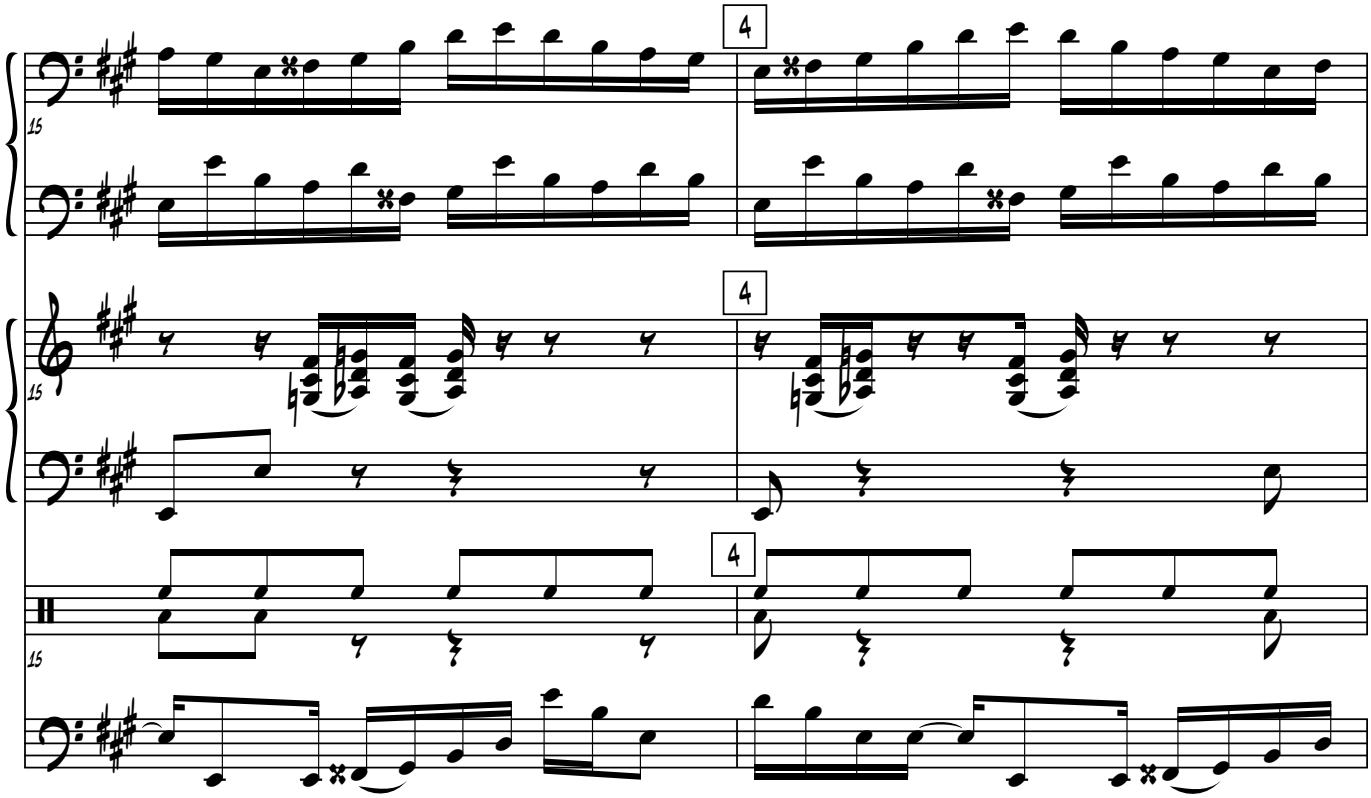
1/8 = traveling

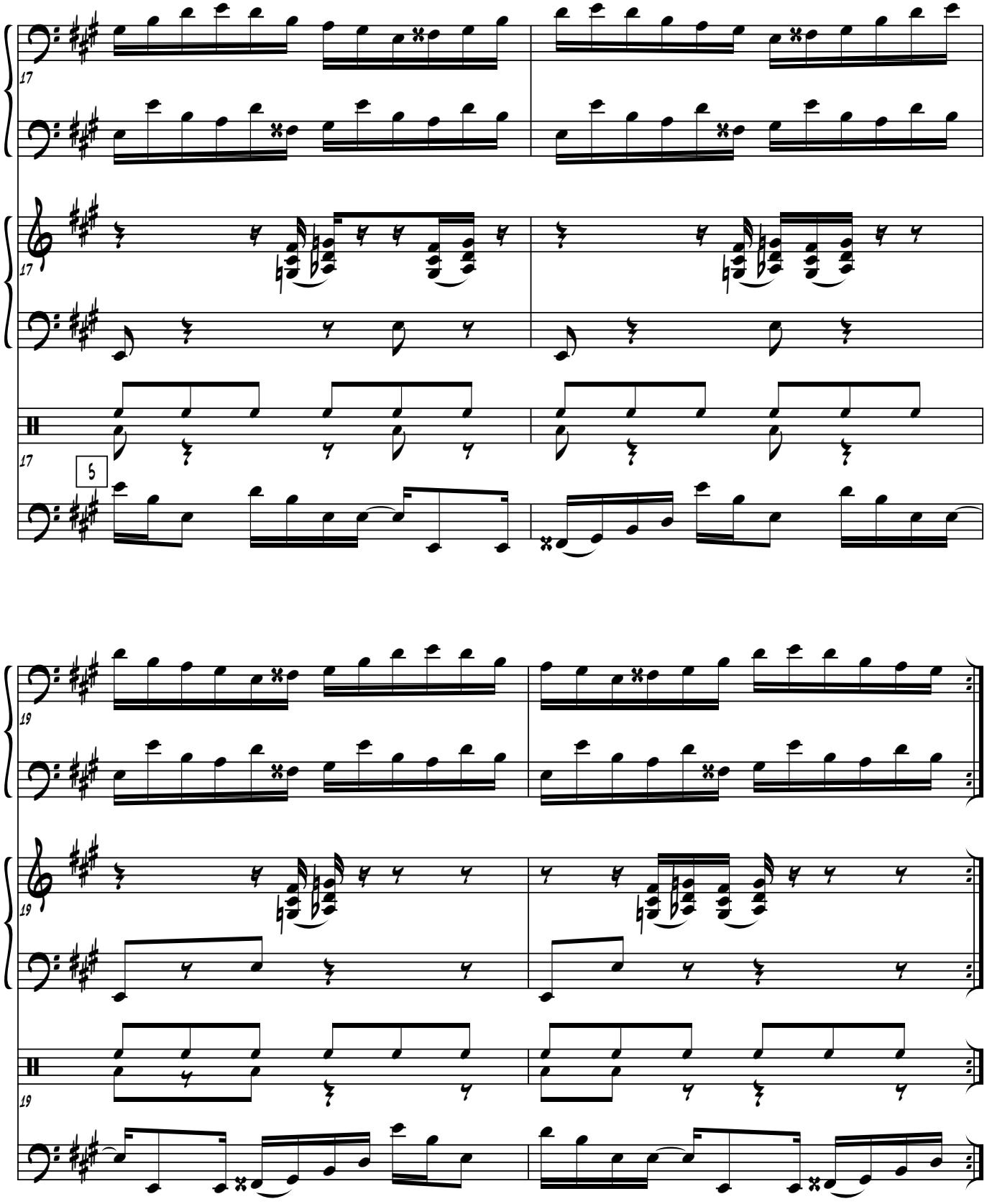







15
15
15
4


15
4
15
4
15
4


17
17
17
5
19
19
19

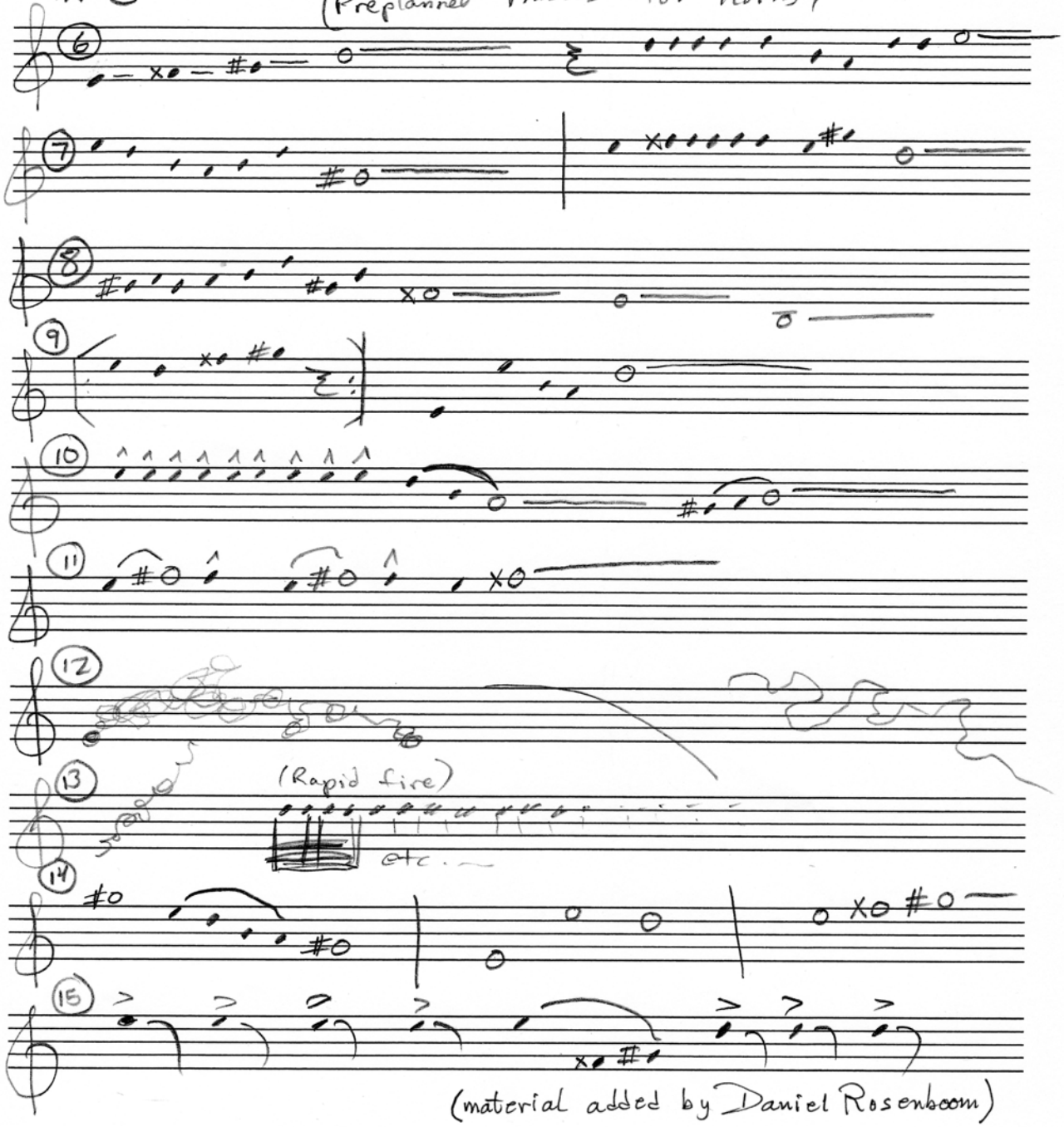
David Rosenboom - How Much Better If Plymouth Rock Had Landed on the Pilgrims

(spontaneous)

Section VI - Recording Session 10/26/08

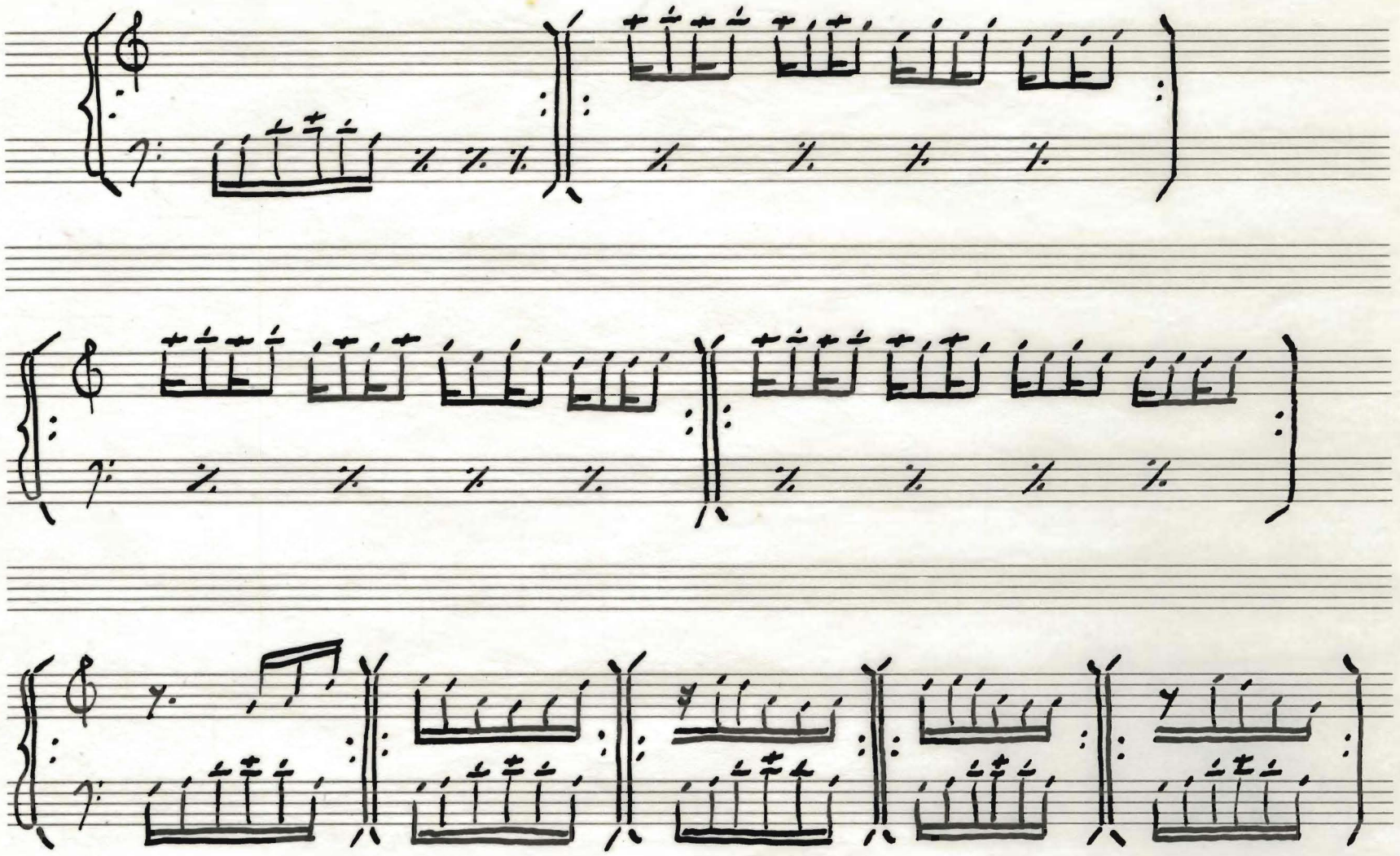
IN C

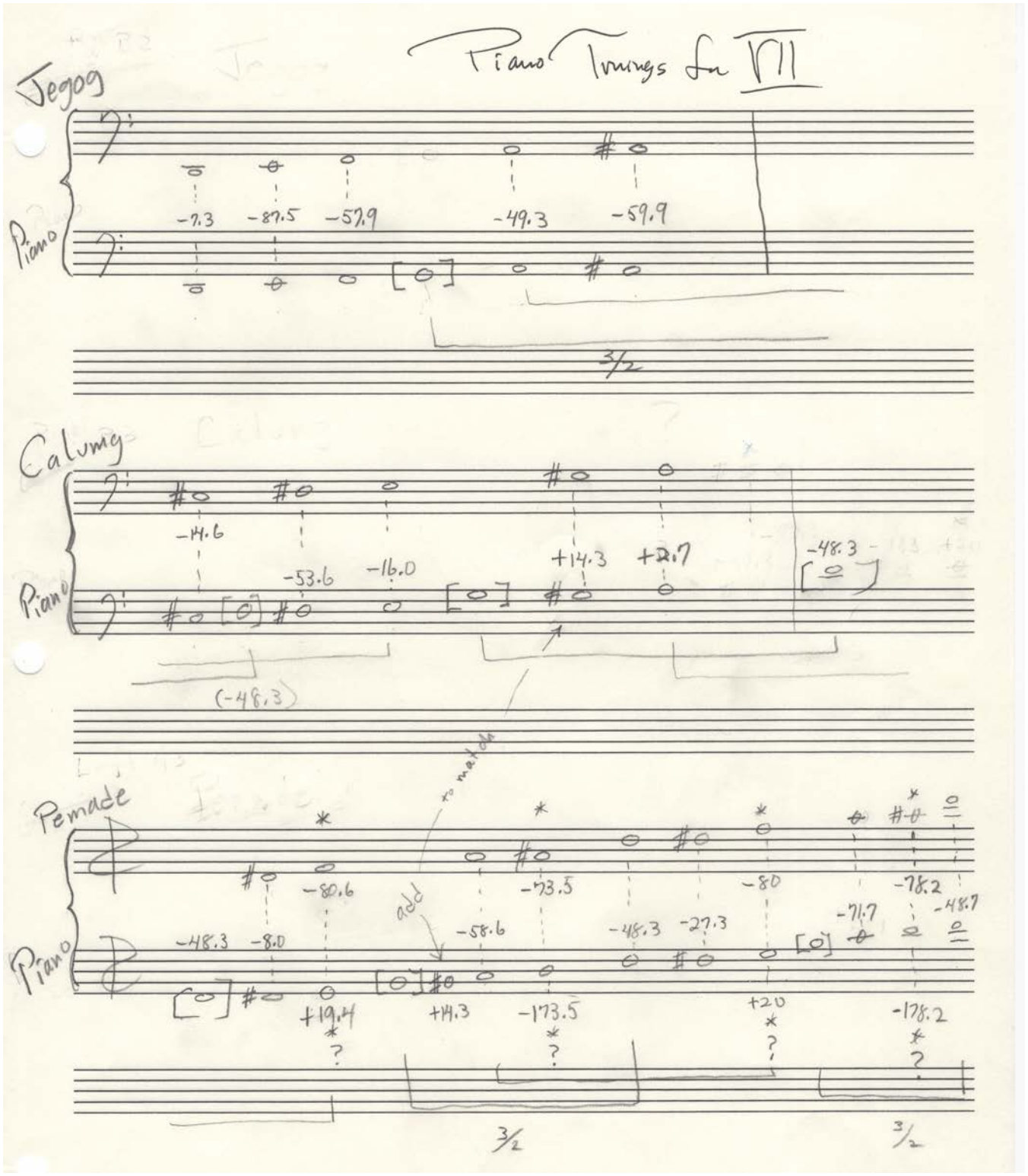
(Preplanned Phrases for Horns)



(material added by Daniel Rosenboom)

VII. Fast, impressionistic (♩. ≈ 65)



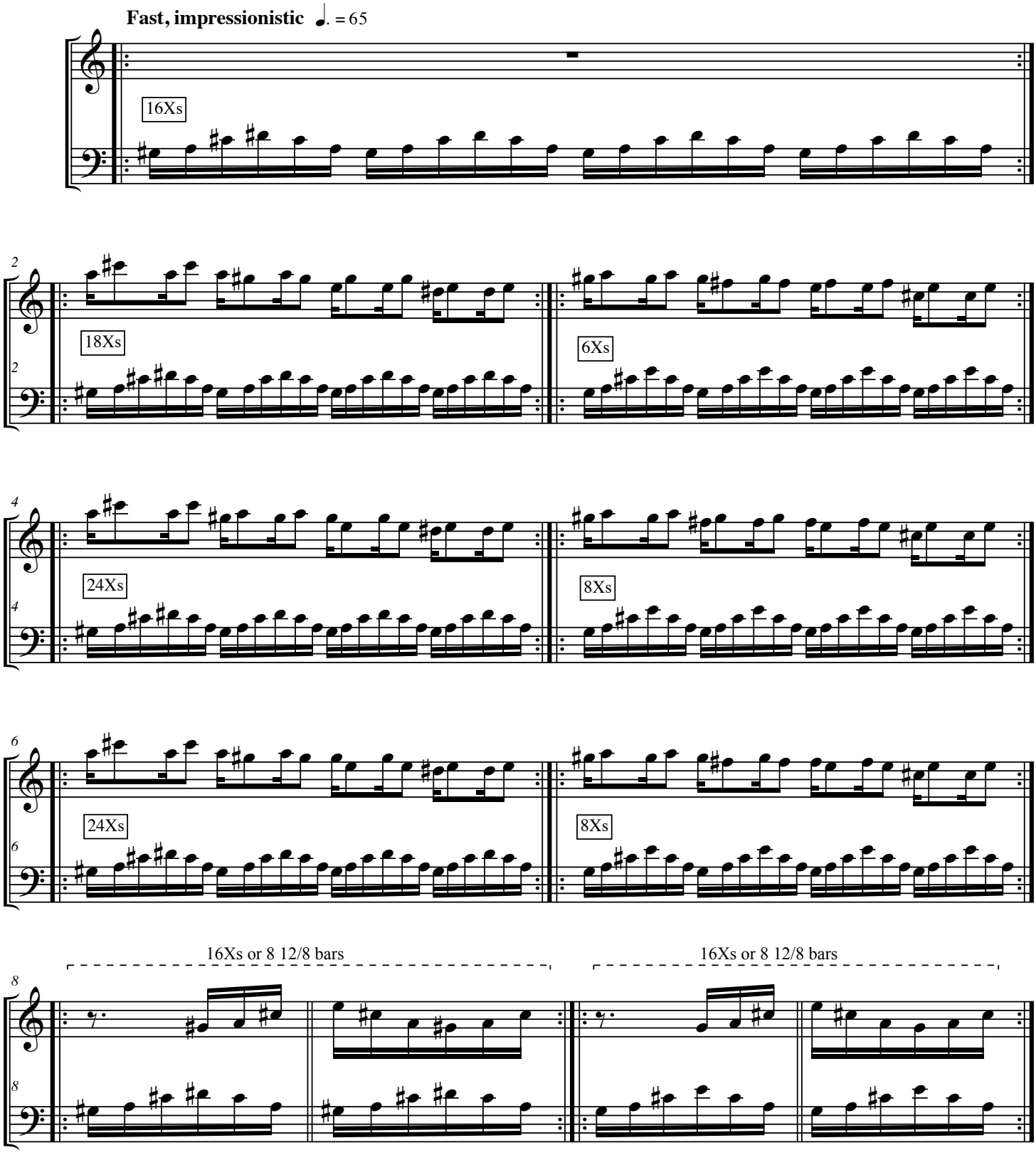

Piano Tunings for VII
Jegog
Piano
-7.3
-87.5
-57.9
-49.3
-59.9
3/2
Calung
Piano
-14.6
-53.6
-16.0
+14.3
+2.7
-48.3
(-48.3)
Pemade
Piano
-48.3
-8.0
-80.6
+19.4
add
x marks
-58.6
+14.3
-173.5
-48.3
-27.3
-80
+20
-71.7
-78.2
-48.7
3/2
3/2

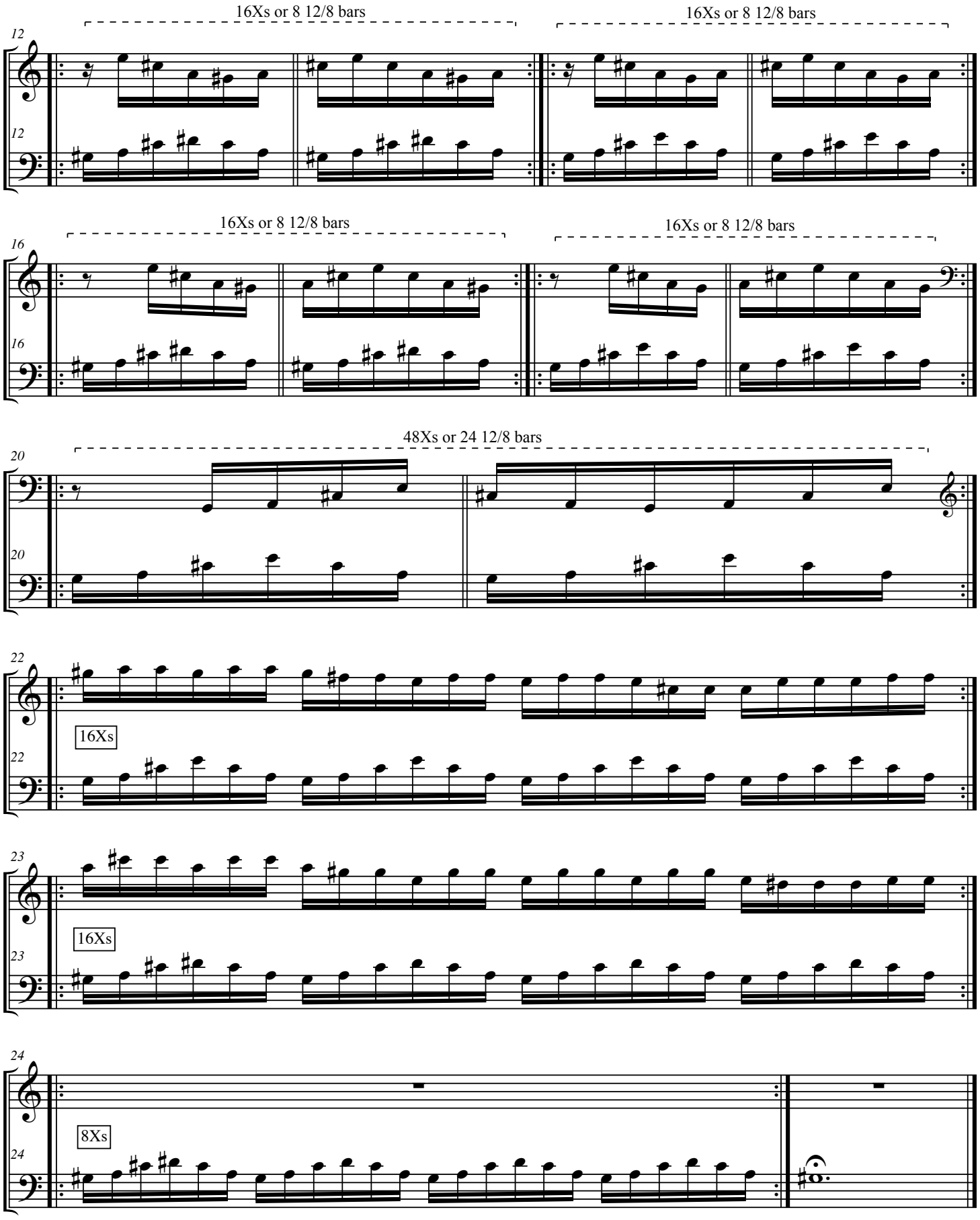
How Much Better If Plymouth Rock Had Landed On The Pilgrims

Section VII (Extended)

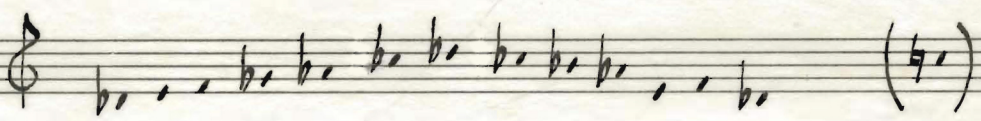
David Rosenboom

(impression)

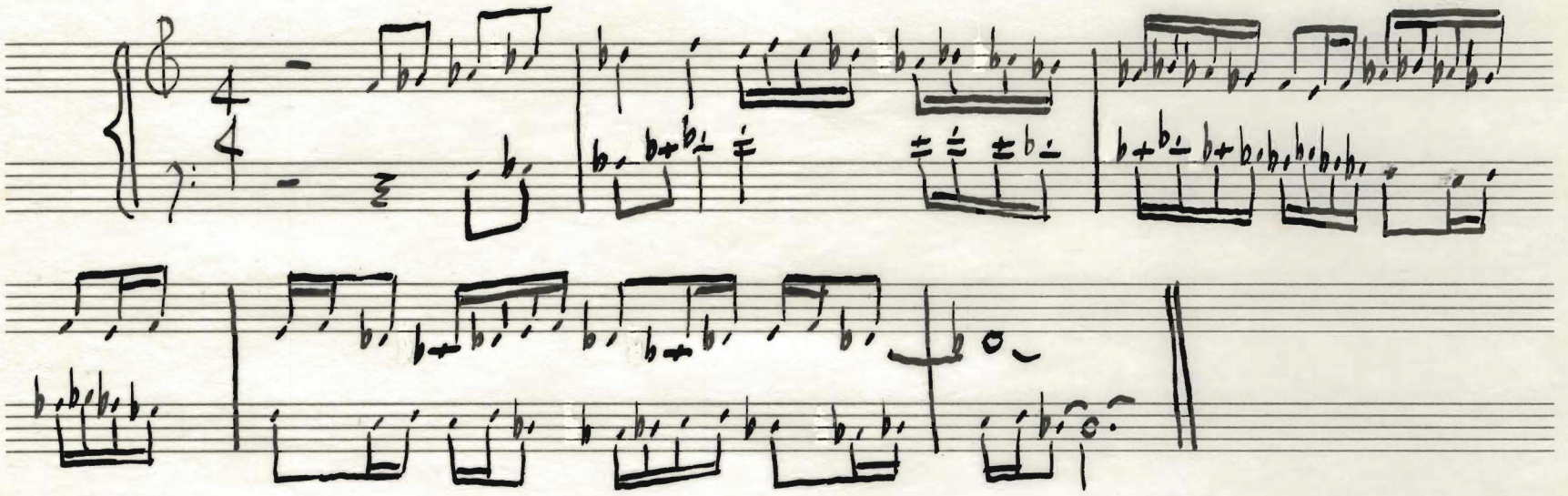



16Xs or 8 12/8 bars
16Xs or 8 12/8 bars
12
16Xs or 8 12/8 bars
16Xs or 8 12/8 bars
16
48Xs or 24 12/8 bars
20
22
16Xs
23
16Xs
24
8Xs

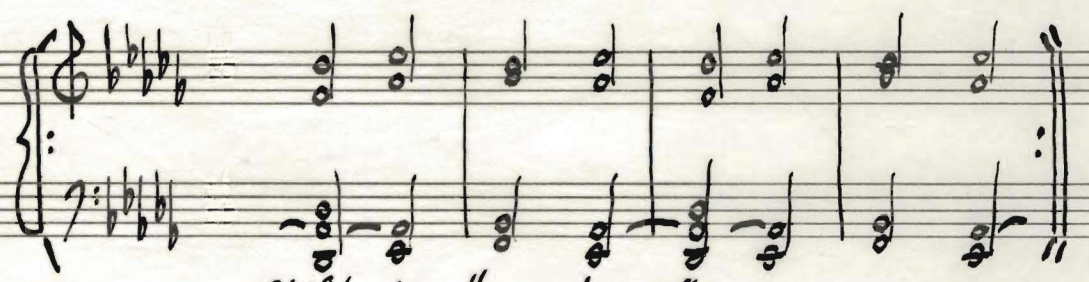
VIII. Follow the leader or raga cannons.

Mode. 

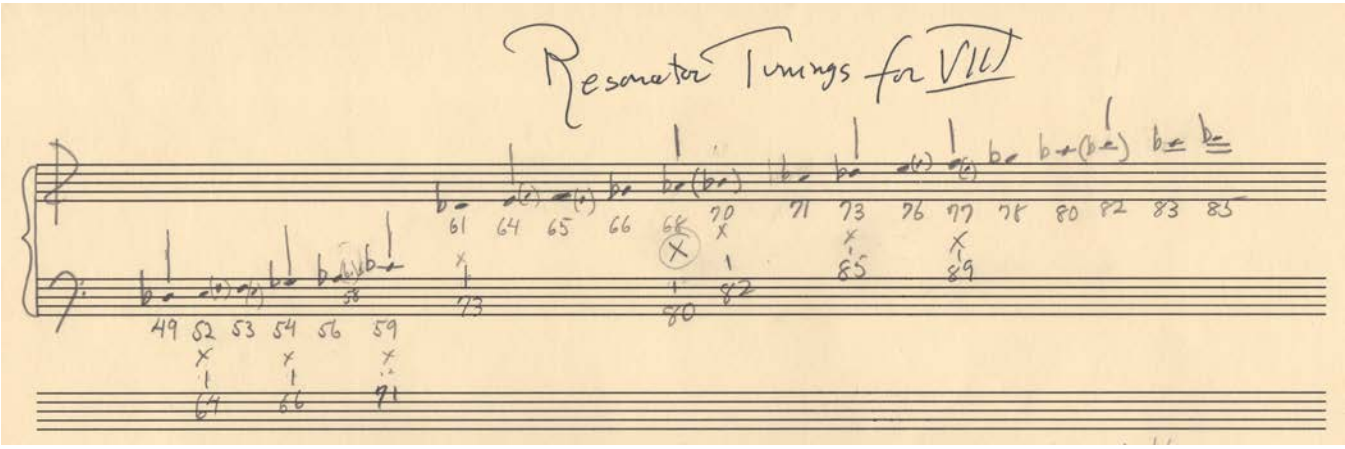
Human delay chain. Each person follows the pason ahead of him, playing exactly what that peson did a specified number of beats later. One peson is leader. Left hand follows right hand, thus:



Accompaniment:



Music Print Corporation--Boulder, Colorado



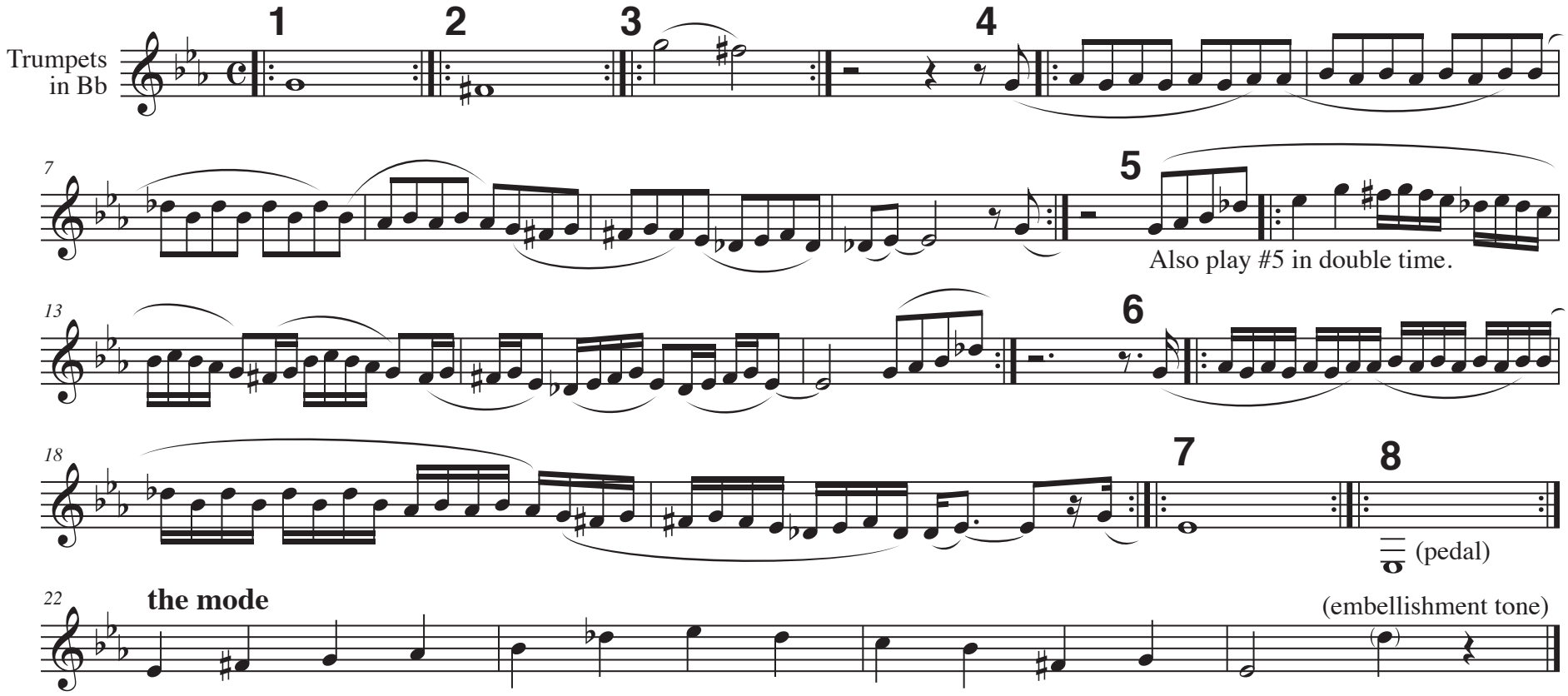
In some performances and recordings, electronic resonators were used to provide a subtle electronic augmentation of the instruments performing. This chart shows the notes to which resonators were tuned and their corresponding MIDI numbers.

How Much Better if Plymouth Rock Had Landed on the Pilgrims

Section VIII "Follow the leader or raga canons."

David Rosenboom

(arangement for multiple trumpets)

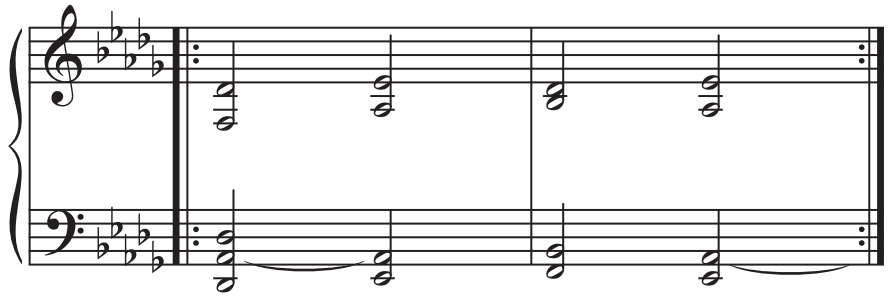


Note adapted from original score: Human delay chain. Each person follows the person ahead of them, playing exactly what that person did a specific number of beats later. Chordal accompaniment to be played on keyboard/piano/organ/etc. (Practice lines at approx. MM=92-94.) There can be space for improvisations on "The mode." Each numbered musical unit is to be repeated many times in free canon form.

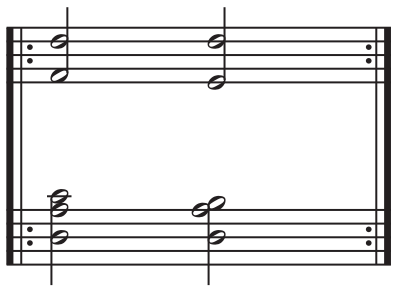
Accompaniment and Improvisation Maaterial

in C

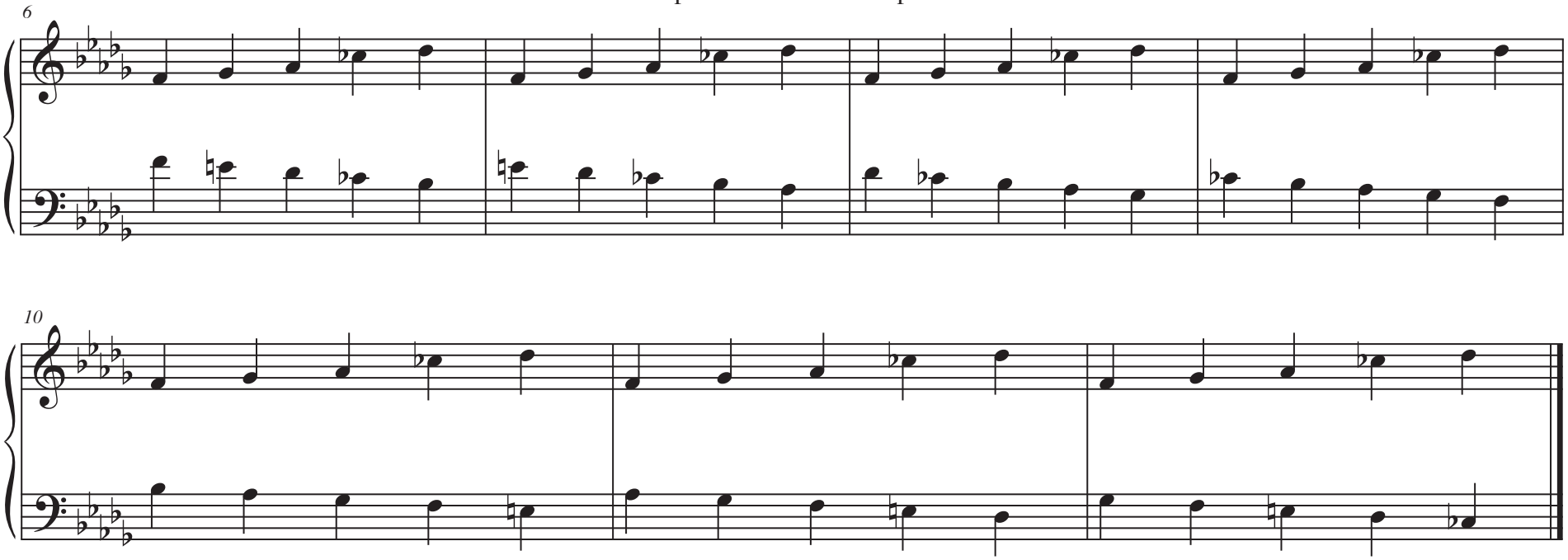
Use with trumpet parts 4, 5, & 6.
Shift in all "phases." Try different octaves.



Use in improvisations.



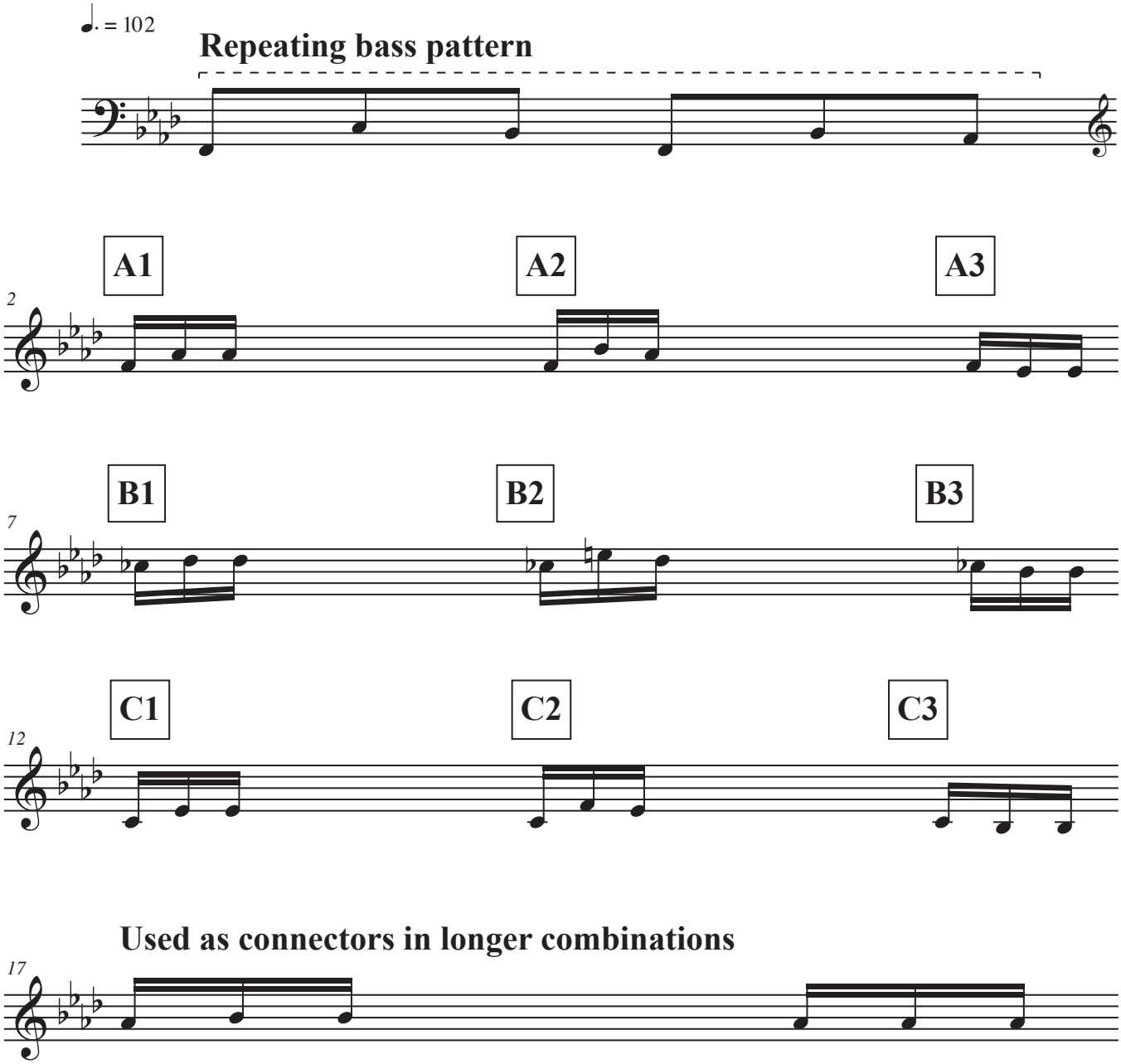
Interval expansions to use in improvisation.



How Much Better If Plymouth Rock Had Landed On The Pilgrims

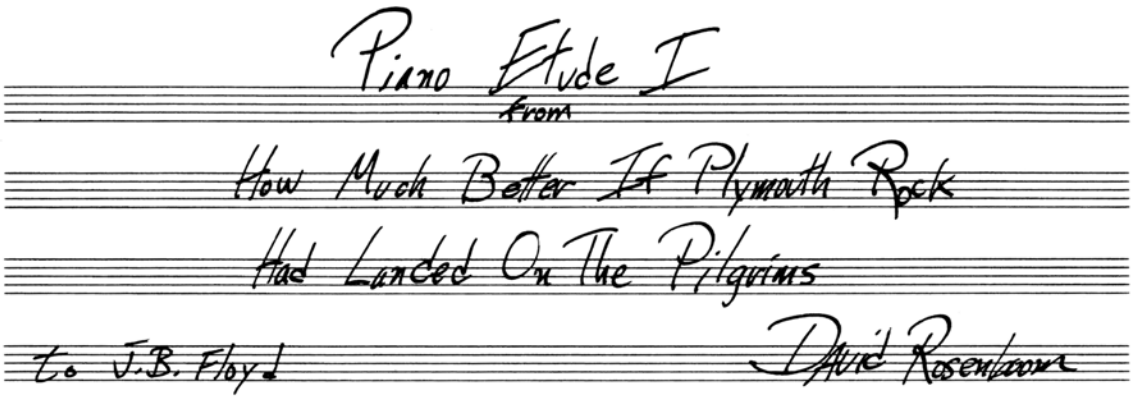
Section IX

David Rosenboom
1971



These basic patterns are used in an array of combinations and permutations to construct continuously streaming, fast sequences for a complete realization of Section IX. All pattern sequences, including the bass pattern, are re-combined with the delay of an odd number of 16th-notes in duration. The delayed patterns will begin on the 4th, 6th, 8th, ... 16th-note pulse of each cycle of the bass pattern. The delayed notes of the bass pattern will fit in between the original 8th-notes. The treble patterns are normally begun one 16th note pulse after the first note of the bass pattern. The patterns are also intended to be played by two or more players, who create rapid, interlocking patterns that fit in between each other, as in the techniques of *imbal* or *imbalan* in Javanese music and *kotekan* in Balinese music.

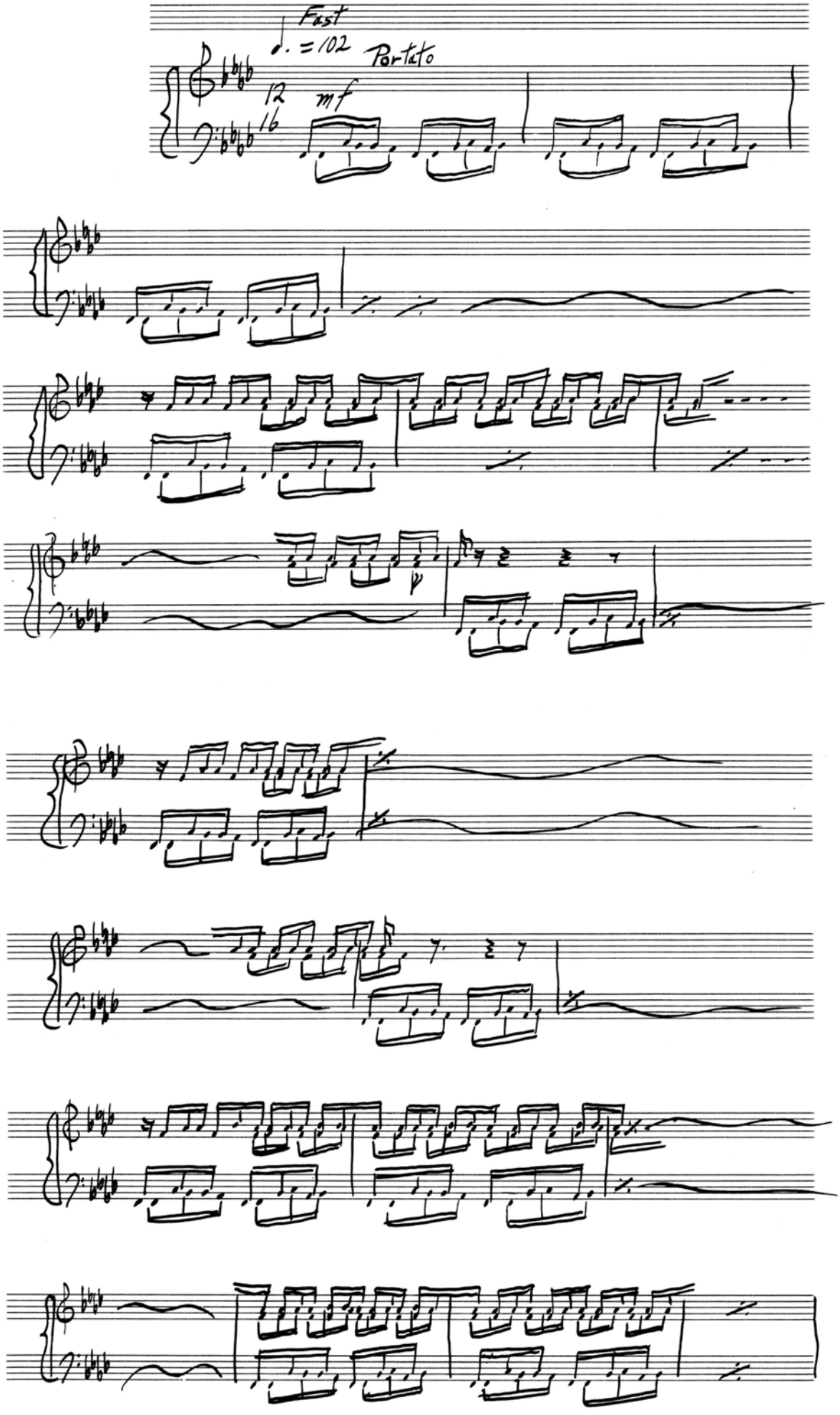
(Note: Keyboard players should use multiple finger techniques for the repeated notes. This was inspired by fast-finger repetitions in *tabla* playing. Also see the hand-written manuscript known as *Piano Etude I*.)

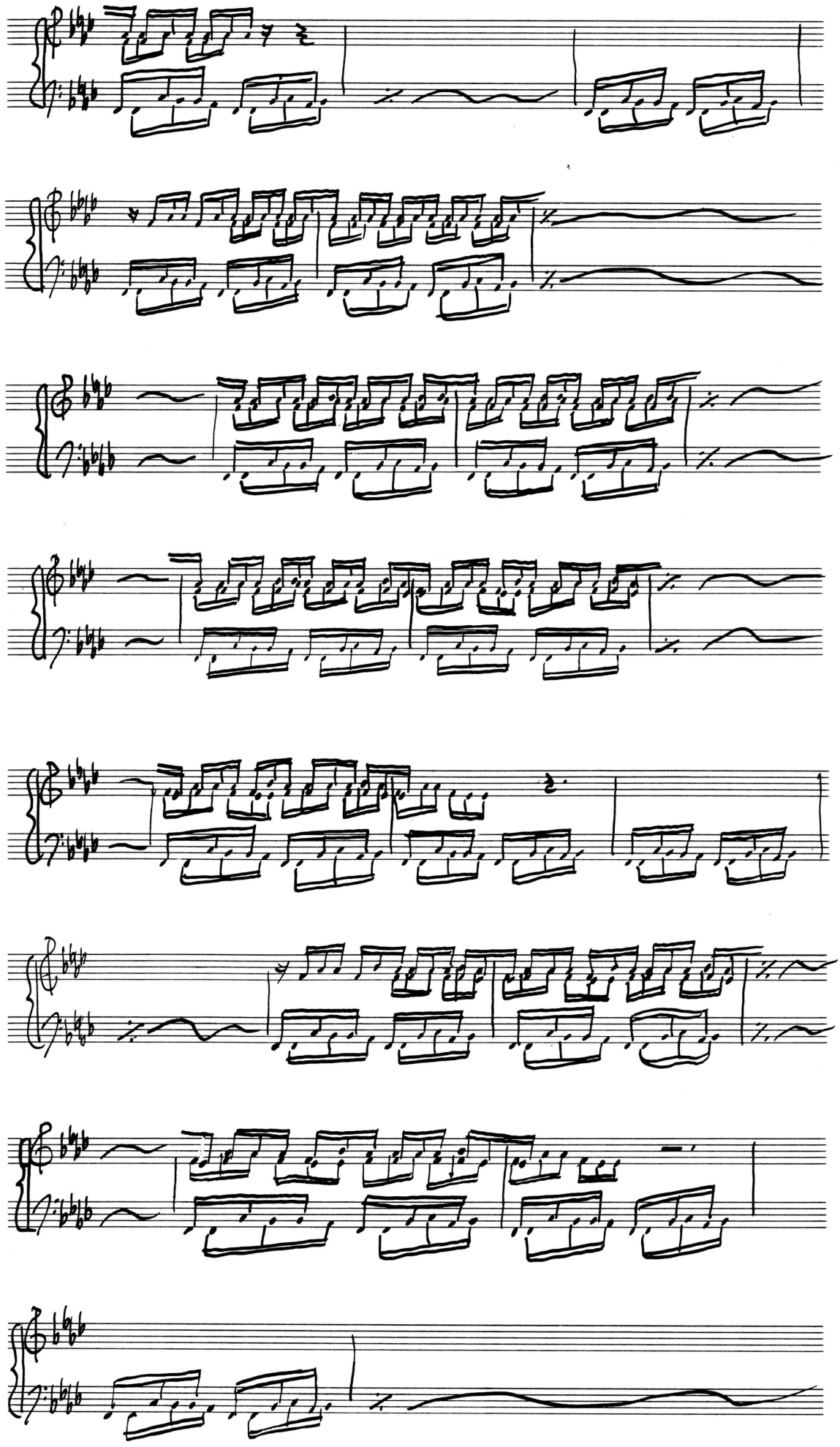


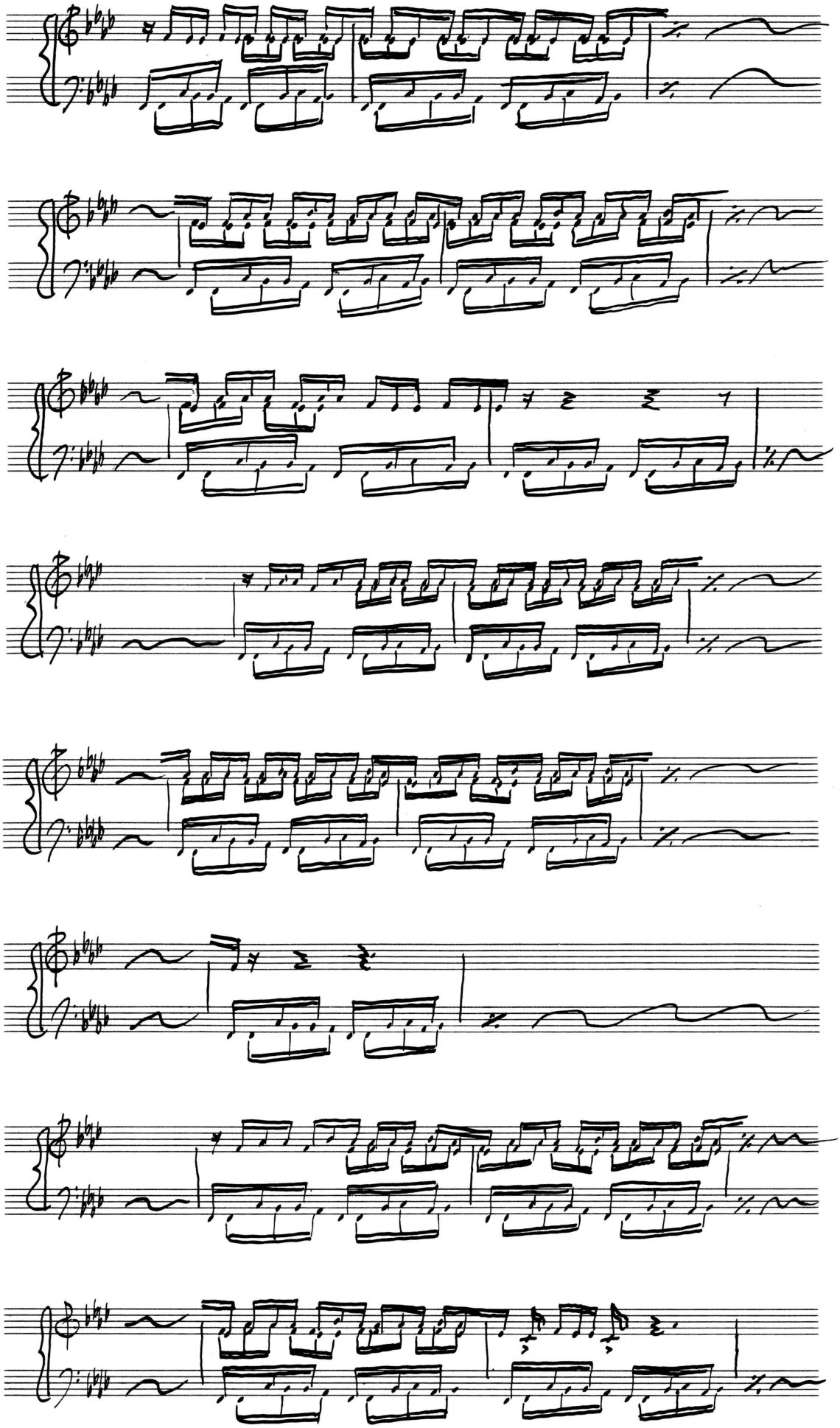
INTRODUCTORY STATEMENT CONCERNING PIANO ETUDE I

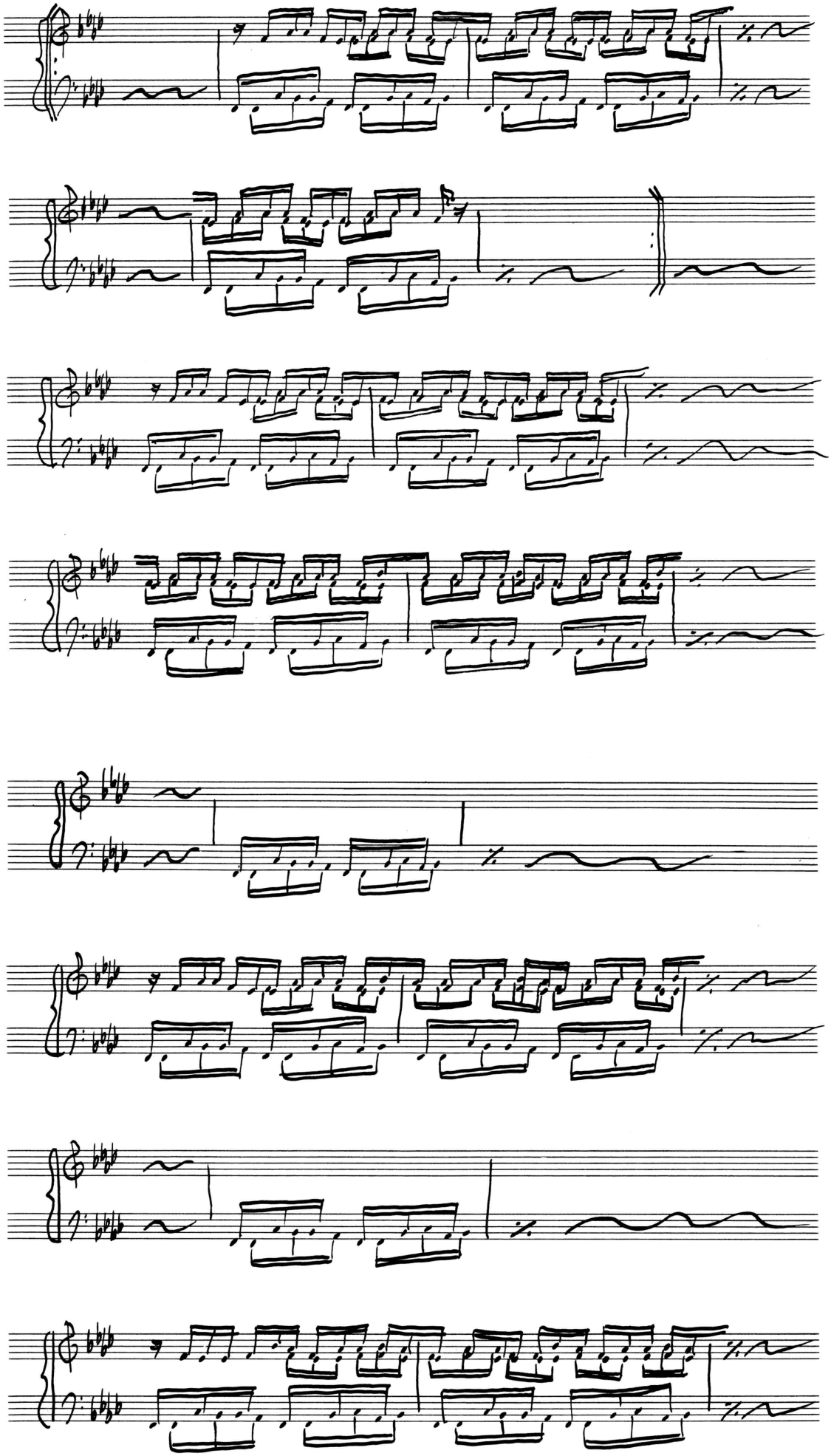
David Rosenboom

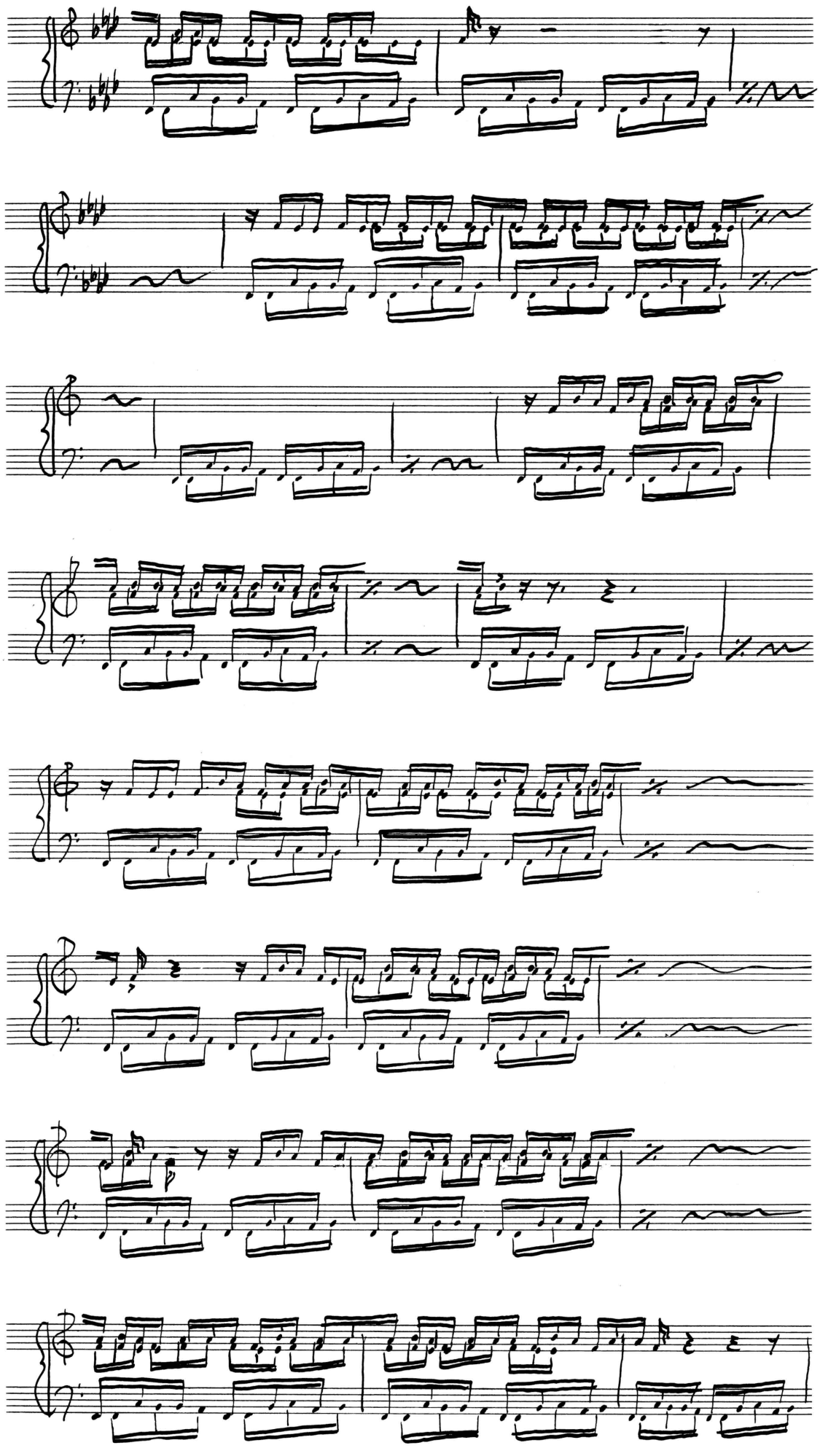
In the course of experimentation with biofeedback and the arts in 1971, I became interested in the relationship between strong Alpha brain wave production by a subject and ideas surrounding endurance and execution of complex, repetitive, motor tasks, as one finds in some types of cyclic pattern music for instruments. I decided to attempt to construct a motor task, so complex in its execution and requiring such endurance, as to be impossible to complete, without interrupting the flow, unless one maintains a consistent, non-differentiating state of consciousness, similar to that associated with high Alpha output. Piano Etude I is the task that was constructed as a result of this thinking. It must be performed as if the entire piece were a single, long, smooth, motor gesture, made up of thousands of tiny, precise, vibrations, which must be executed perfectly without devoting selective attention to each one. The piece may be, (and has been), performed by one pianist, or the score may be divided into two parts, one containing the "stems-up" notes and one containing the "stems-down" notes. If this is done, the piece may be played by two pianists, alternating every other sixteenth note with each other at extremely high speed. This complex rhythmic task requires an in-phase, mental state on the parts of both players, which is similar to that often associated with high Alpha output and phasic synchrony between two players. These high speed pulse alternations are similar to those often encountered visually in an installation of Vancouver Piece, (elsewhere in this volume), when phasic synchrony results in rapid alternate superimpositions of one person's facial image over that of his partner.

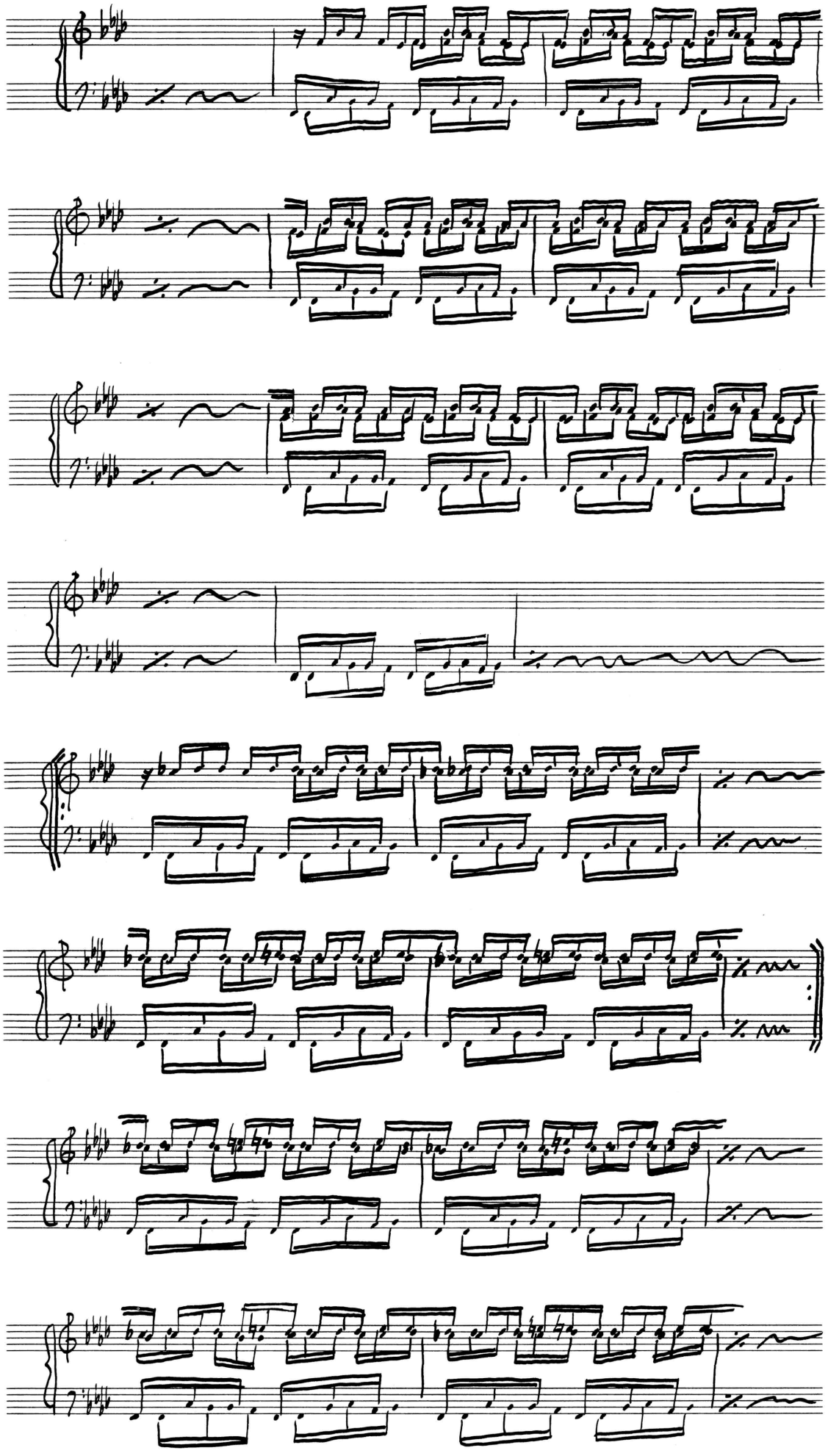

Fast
♩. = 102
Portato
12
16
mf

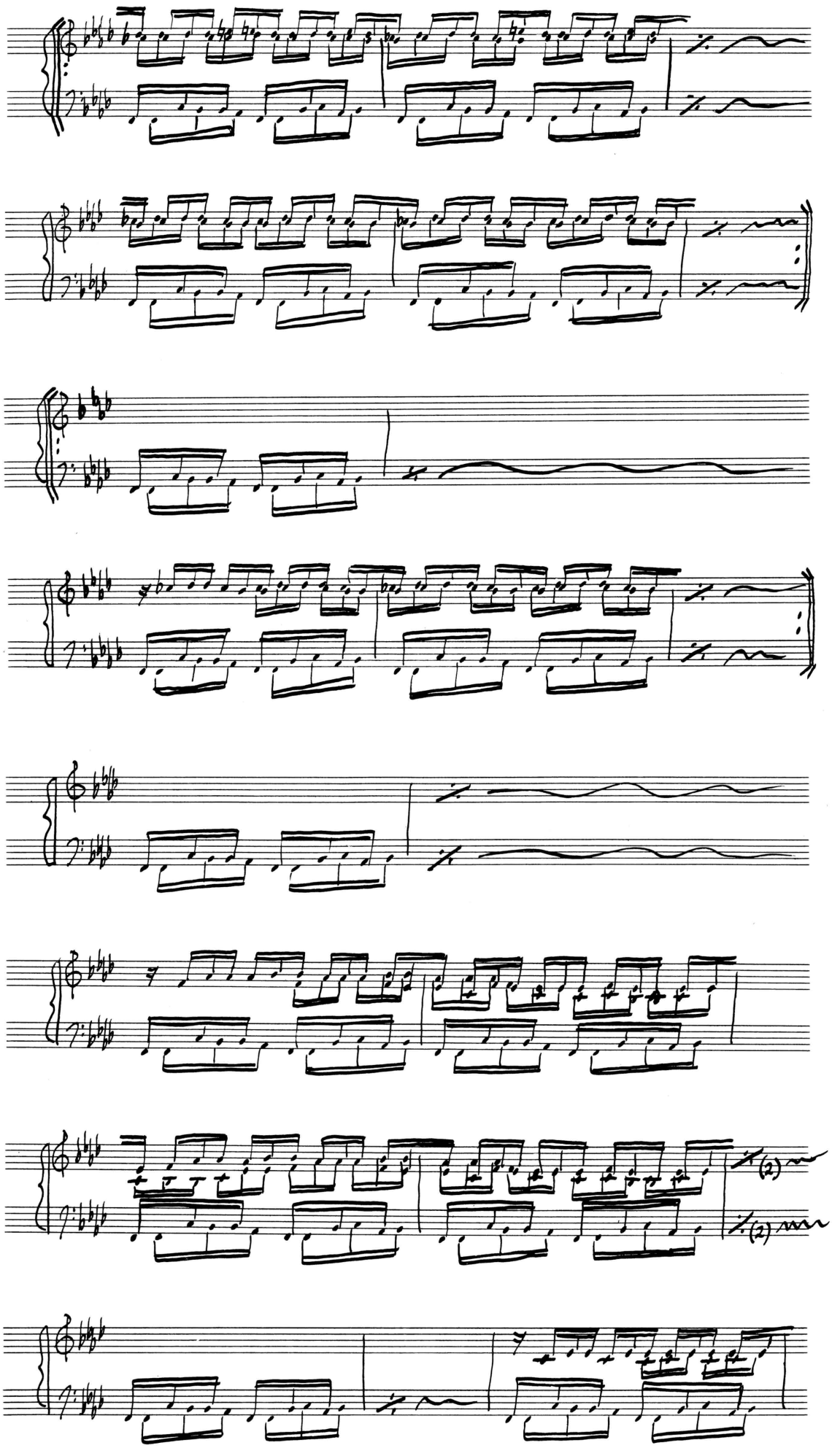


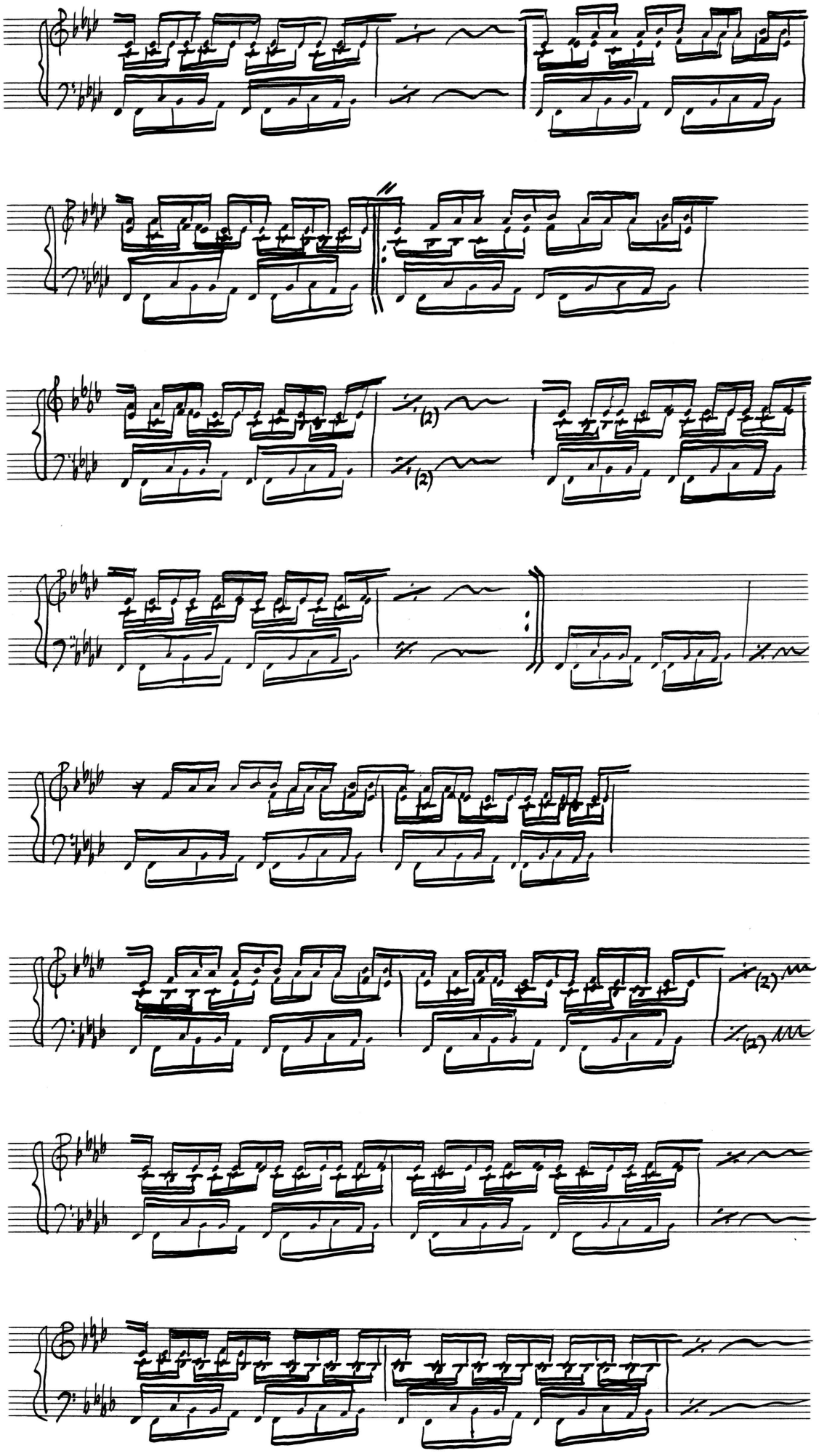


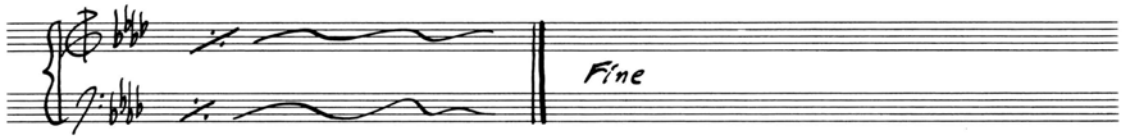







(2)
(2)





(𝄋) = Repeat last complete bar indefinitely

(𝄋 (2)) = Same for last 2 complete bars