במדבר

(B’midbar)
(Numbers)

Larry Polansky

solo piano (and invited speakers)

for sarah cahill

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The pieces may be played in any order, in any subset. Before each piece is played someone should read one of the numbered statements. This might be anyone: the pianist, friends, fellow performers, or audience members. Each statement might be read by a different person, or the same person, in any language. Bracketed notes are not to be read.

1. *The total biomass of ants on earth is about the same as that of humans, meaning that there are more or less 10,000,000,000,000 (ten trillion) ants.*
2. *I have 1 daughter. [This may be personalized, or not].*
3. *The city of Huancayo, Peru, has around 300,000 people, and 0 movie theaters.*
4. *The number of Americans casualties in Iraq, as of Feb. 24, 2008, since March 19, 2003, is 3,972. There are about 4,100 students at the university at which I teach. The number of Americans wounded in Iraq since that same date seems to be unclear, somewhere between 23,000 and 100,000, or roughly between a city the size of Keene, New Hampshire, and Manchester, New Hampshire, 2 cities about 1 hour from where I live.*
5. *1 of out 100 adults in the United States is in prison.*
6. *I am 53 years old. My life expectancy is 24.5 more years. That means I have lived about 2/3rds of my life. [Speaker may substitute hisr own numbers here].*

7. *Douglas Repetto's little hardware piece, All Possible Images, counts from 0 to 2^{64} in a lovely spiral pattern, at 5 Hz. (5 times a second). It will take around 18 quintillion years to complete its simple task of displaying all possible images at a modest resolution of 64 "pixels." That is 1.5 billion times the life of the universe. Douglas' little box cost under $100 to build.*
8. *There are, at the moment, by one count, 6,912 different languages in the world. 121 of them are signs. [This statement, or any of the statements, may be signed].*
9. *"And of the cities which you shall give six cities shall be cities of refuge. You shall give three cities on this side of the Jordan, and three cities shall you give in the land of Canaan, which shall be cities of refuge. These six cities shall be a refuge, both for the children of Israel, and for the stranger, and for the sojourner among them…" [B'midbar, לה].*
10. *It is difficult to determine how many Iraqi civilians have been killed since the war began. One study states that between 81,632 and 89,103 Iraqis were killed in the years 2003 to 2007. The population of the country is about 27 and ½ million. The ratio of the number of fatalities to the current population is .00324011, or about 3/1000ths. The 2006 estimate for the population of New Hampshire is 1,314,895. .0003 of that is about 4,260 New Hampshirites. The 2007 estimate of the population of the United States is 301,139,947. .00324011 of that is 975,923 people.*
11. *The number of bird species has been increasing steadily — a number made not by birds but by humans. Even until relatively recently it was said to be around 8,000, but it now well over 10,000, even though many species are endangered, have become extinct, will be extinct soon. There are a number of people, often referred to as "big listers" who dedicate their lives to seeing as many species as possible. Several have seen and documented their sighting of over 7-8000 species. Many of the most knowledgeable and passionate birders, in my experience, neglect to keep count of the ones they've seen.*
12. *"With respect to perfection, the following illustration will best shew how easily we may err: a Crinoid sometimes consists of no less than 150,000 pieces of shell, all arranged with perfect symmetry in radiating lines; but a naturalist does not consider an animal of this kind as more perfect than a bilateral one with comparatively few parts, and with none of these alike, excepting on the opposite sides of the body. He justly considers the differentiation and specialisation of organs as the test of perfection" (Charles Darwin, The Descent of Man)*
13. *We perceive change. If things change 0 times per second, nothing happens: we see nothing, hear nothing. If things change slowly, like once a year, we call them holidays, or birthdays. At a frequency of about once a week, we might consider change to be appointments, or a schedule. Regular daily changes are called routine. But if things change faster, say, about 15 or 20 times per second, we start calling it pitch. At this speed we no longer consider change as an event, and give it a different kind of importance. If change occurs faster than about 20,000 times per second, we more or less ignore it until it gets extremely fast. We start seeing things change again starting at about 4 and half times 10^{14} times per second, and stop after about 7 and a half times 10^{14} per second. Our hearing encompasses a total range of about 20,000 events per second, vision about 32,000,000,000,000 [32 trillion]. But hearing isn't impoverished: everything is relative. We can hear a difference of one cycle*

per second more clearly than we can see a difference of thousands. At each level of velocity — the event, the sonic, the visible — change is crucial, beautiful, and completely mysterious.

14. *Some languages use the same symbols for letters and numbers. In Hebrew, numbers are alphabetical, but counting becomes arithmetically arcane when adjacent letter combinations of a particular word occur (for example, 15 is 9 + 6, not 10 +5). Similarly, in ASL, handshapes are shared by certain numbers and letters (like W and 6, F and 9). Other number handshapes are used for basic signs (the sign for "interesting," for example, uses the "8" hand). In Hebrew gematria, semantic, spiritual, and mystical correspondences are seen between number, letter, and word. ASL's has its own "gematria" in its funny, poetic puns and layered meanings. For some reason, we seek out and enjoy our deepest confusion of quantity and meaning.*
15. *According to a letter to the editor in my local newspaper of January 10, 2009, my town's library has 8,497card holders. The town's population is 10,850. In 2008, 244,197 items were borrowed, 10,612 reference questions were answered (not sure how many were asked), 244 adult services and 280 children's programs were offered. There were an estimated 228,608 visitors.*
16.
17. *[Make up your own].*

The pieces

Part 1

1. Eb phrygian (mel. minor)
2. Dance (G locrian (mel. minor))
3. D (harm. series)
4. another canon for farwell (C lydian (harm. minor))
5. Slowly (song) (F mixolydian *#4* (lydian (mel. minor))

Part 2

6. Song (C major (with optional C-altered scale))
7. Chorale (Ab aeolian (harm. minor)) with optional voice
8. Dance (51 events) (A (harm. series))
9. no luck around the house
10. Stamp (for Lou Harrison) (canon for two hands, or any number of hands, instruments) (E octatonic)
11. Canon in 2 voices (slendros)
12. Song (with whistler) (B minor/B locrian (harm. minor))

Part 3

13. an anti-war round
14. for piano left hand
15. 102 Chords (for piano and optional other instruments) (F# mixolydian (mel. minor))
16. piano lesson (for piano and five audience pianists) (or for piano and any five instruments) (A aeolian (mel. minor))
17. "Prayer for the Nations" (Ab; Ab aeolian, lydian, mixolydian, phrygian (harm. minor))

Thanks to Sarah Cahill for commissioning this work; Dennis Bathory-Kitsz for copying some of it; and Rory Cowal for valuable editing.
rev. 4/24/18

Part 1

1.
Eb phrygian (mel. minor)

2. Dance
G locrian (mel. minor)

3.
D (harm. series)

4. another canon for farwell
C lydian (harm. minor)

5. Slowly (song)
F mixolydian *#4* (lydian (mel. minor)

Part 2

6. Song
C major (with optional C-altered scale)

7. Chorale
Ab aeolian (harm. minor)
with optional voice

8. Dance (51 events)
A (harm. series)

9. no luck around the house

10. Stamp (for Lou Harrison)
(canon for two hands,
or any number of hands, instruments)
E octatonic

11. Canon in 2 voices
(slendros)

12. Song
(with whistler)
B minor/B locrian (harm. minor)

Part 3

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for piano and optional other instruments
F# mixolydian (mel. minor)

16. piano lesson
for piano and five audience pianists
(or for piano and any five instruments)
A aeolian (mel. minor)

17. “Prayer for the Nations”
Ab; Ab aeolian, lydian, mixolydian, phrygian (harm. minor)

Part 1

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Eb phrygian (mel. minor)

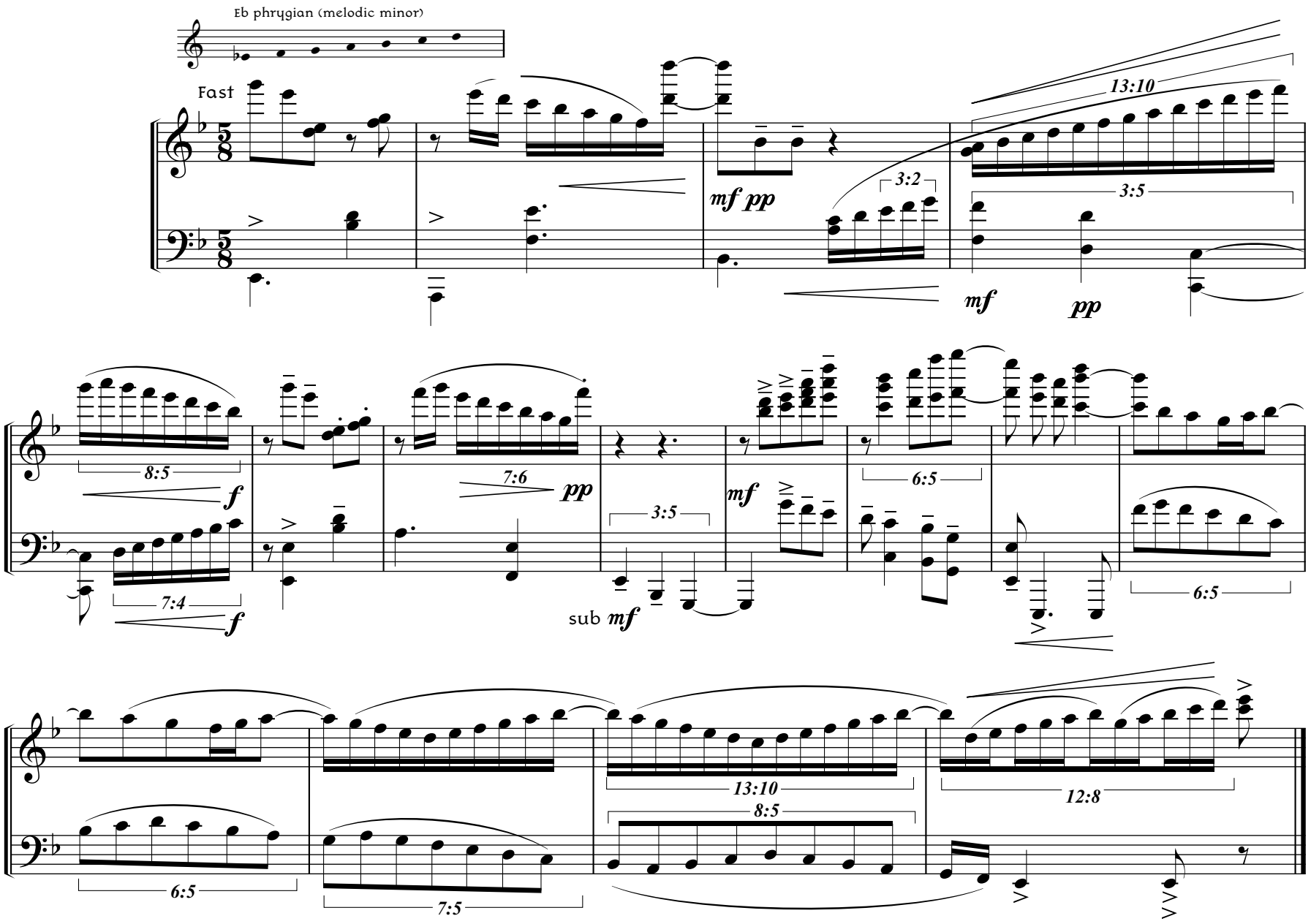
2. Dance
G locrian (mel. minor)

3.
D (harm. series)

4. another canon for farwell
C lydian (harm. minor)

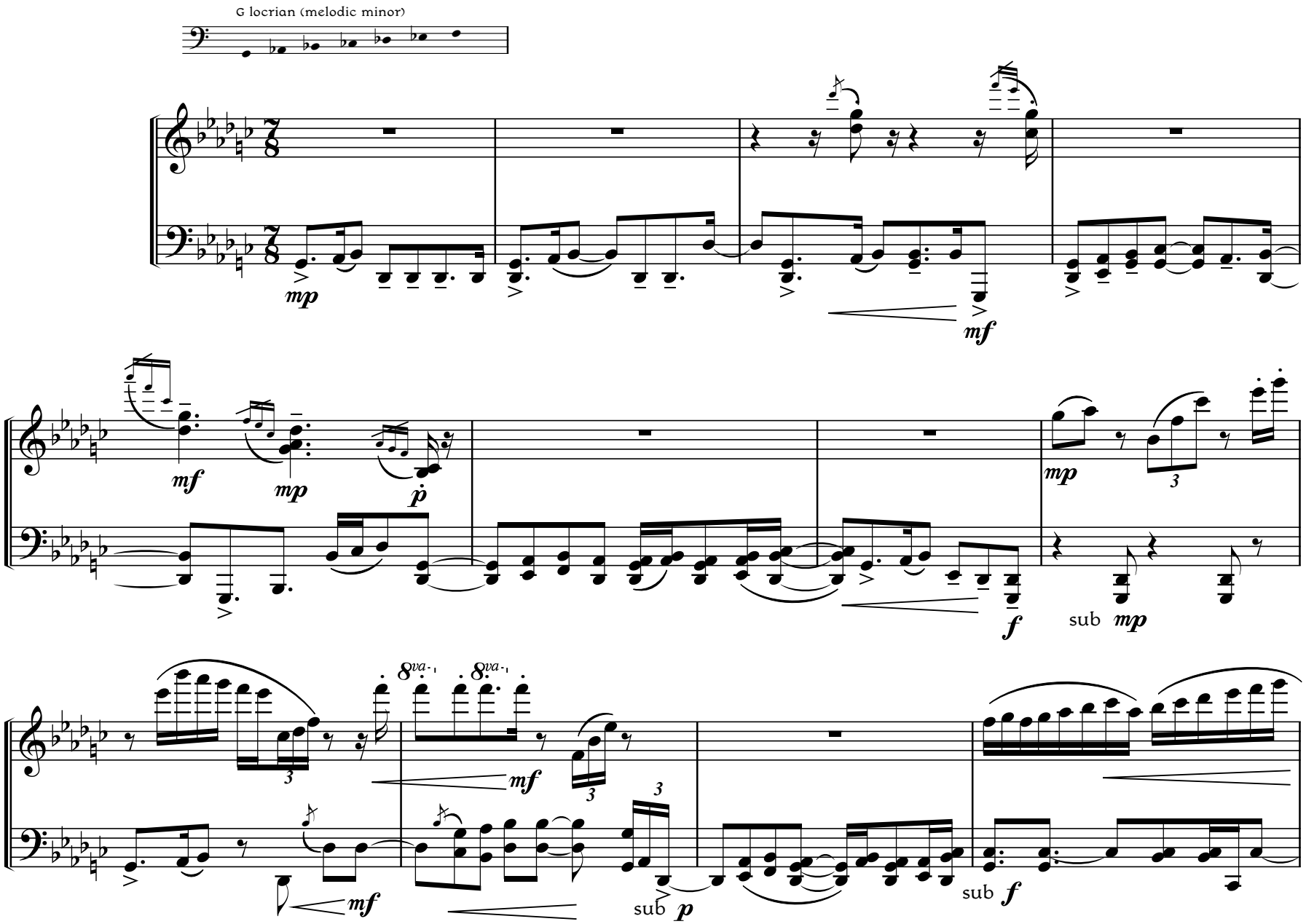
5. Slowly (song)
F mixolydian *#4* (lydian (mel. minor)

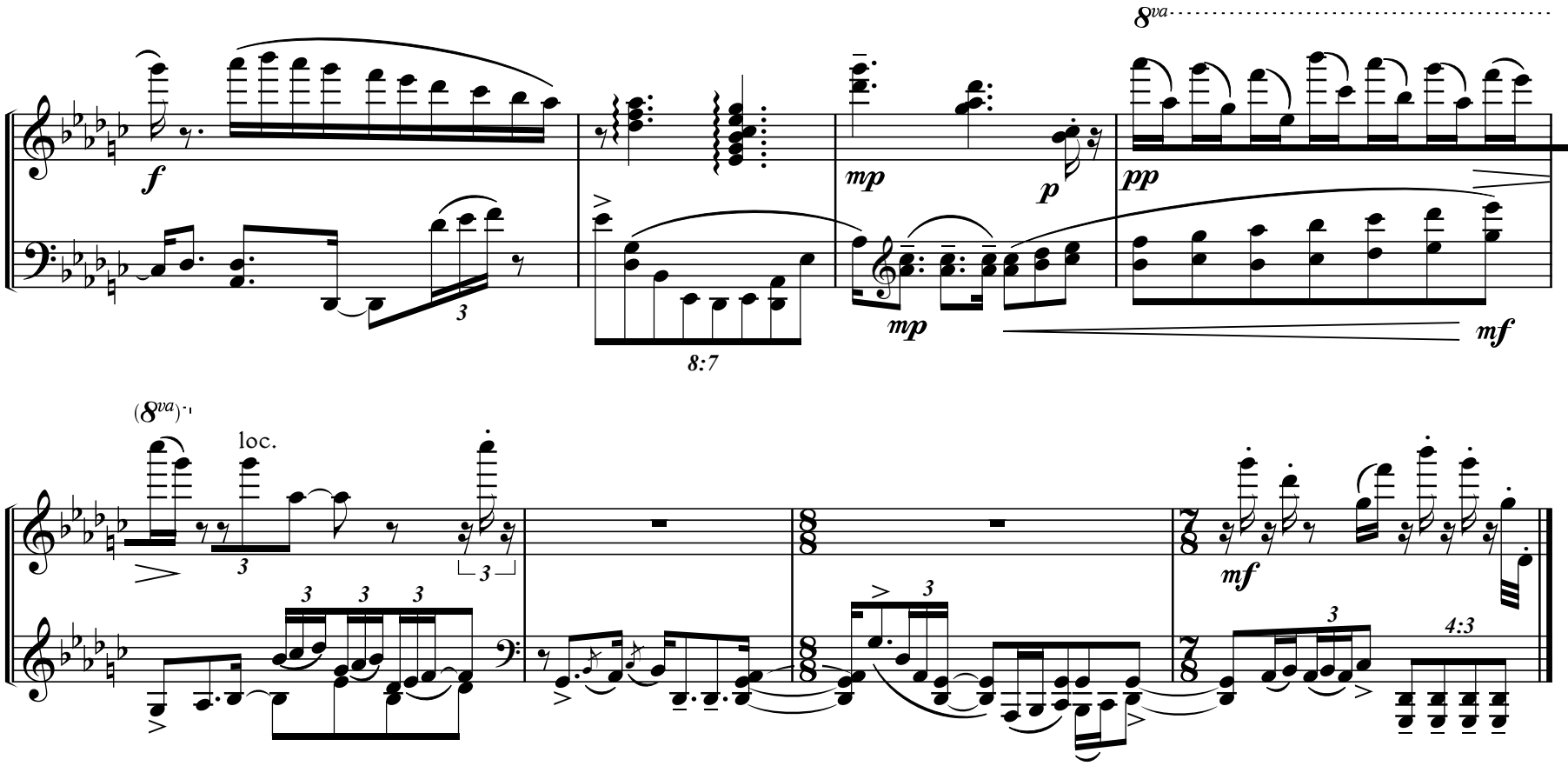
1.



LP 2/24/08 Hanover

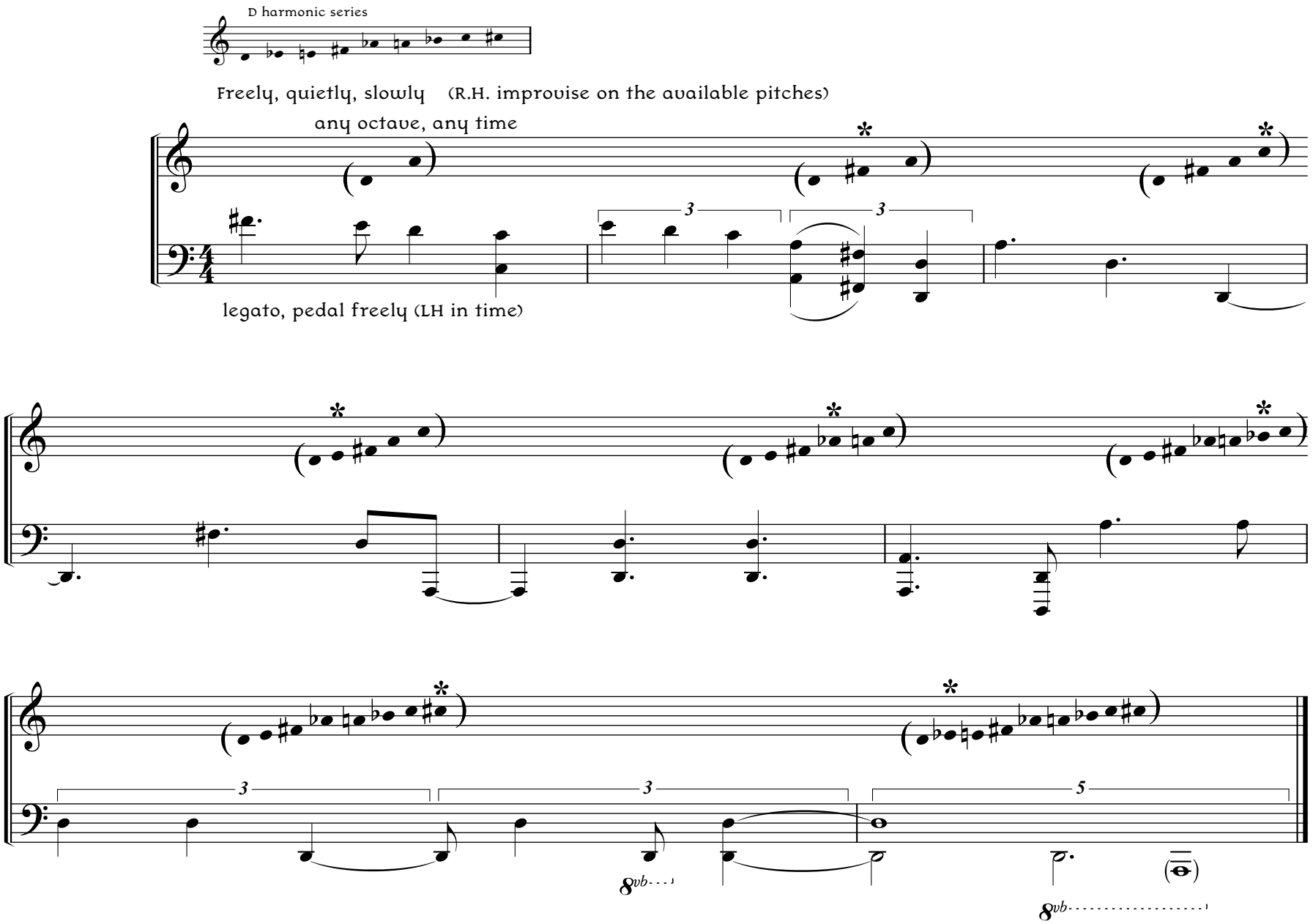
2. Dance


G locrian (melodic minor)
mp
mf
mf
mp
p
f
mp
sub mp
8va
mf
mf
sub p
sub f



LP, Hanover, 2/25/08
slight revision, 11/19/10

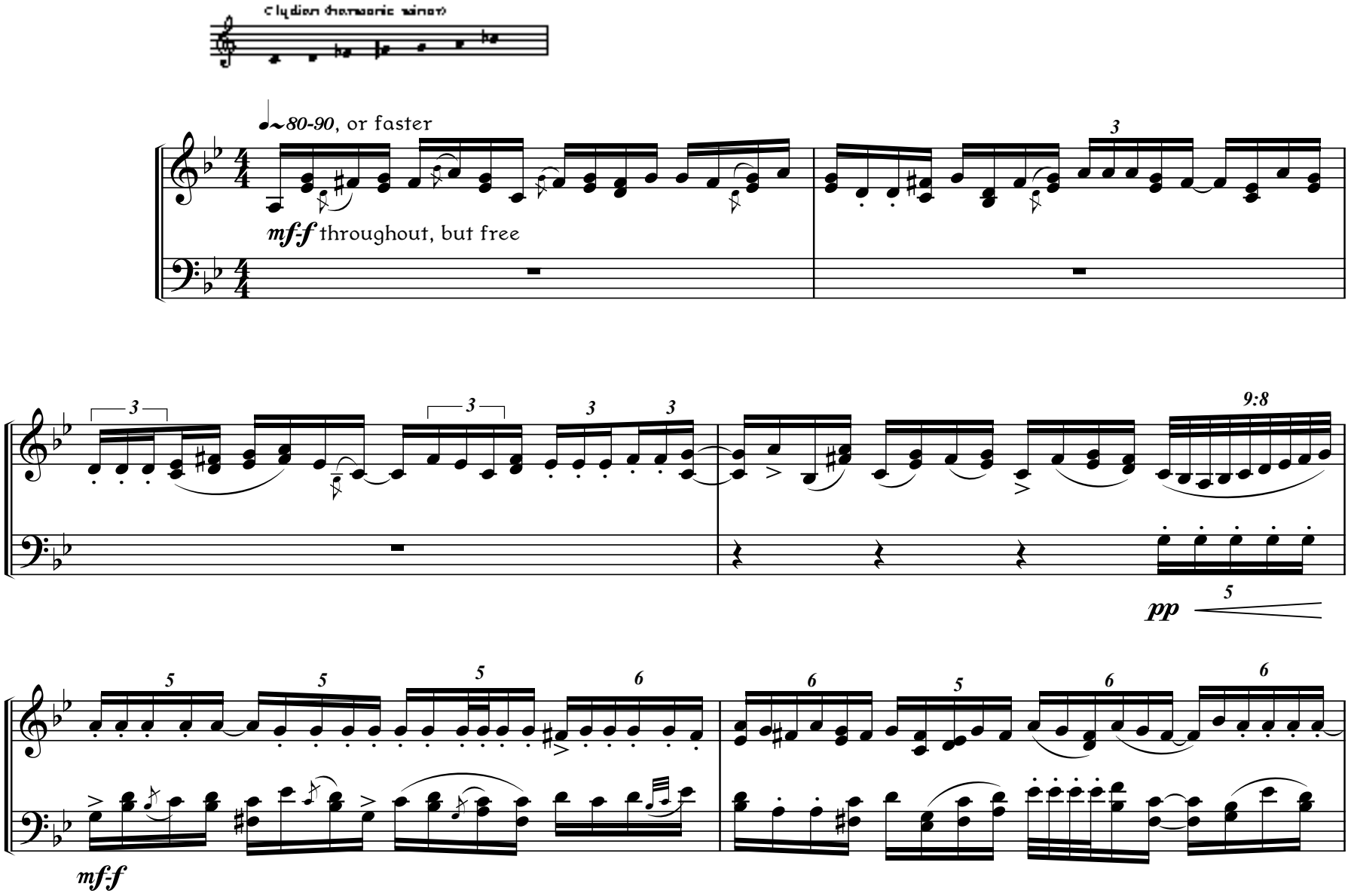
3.

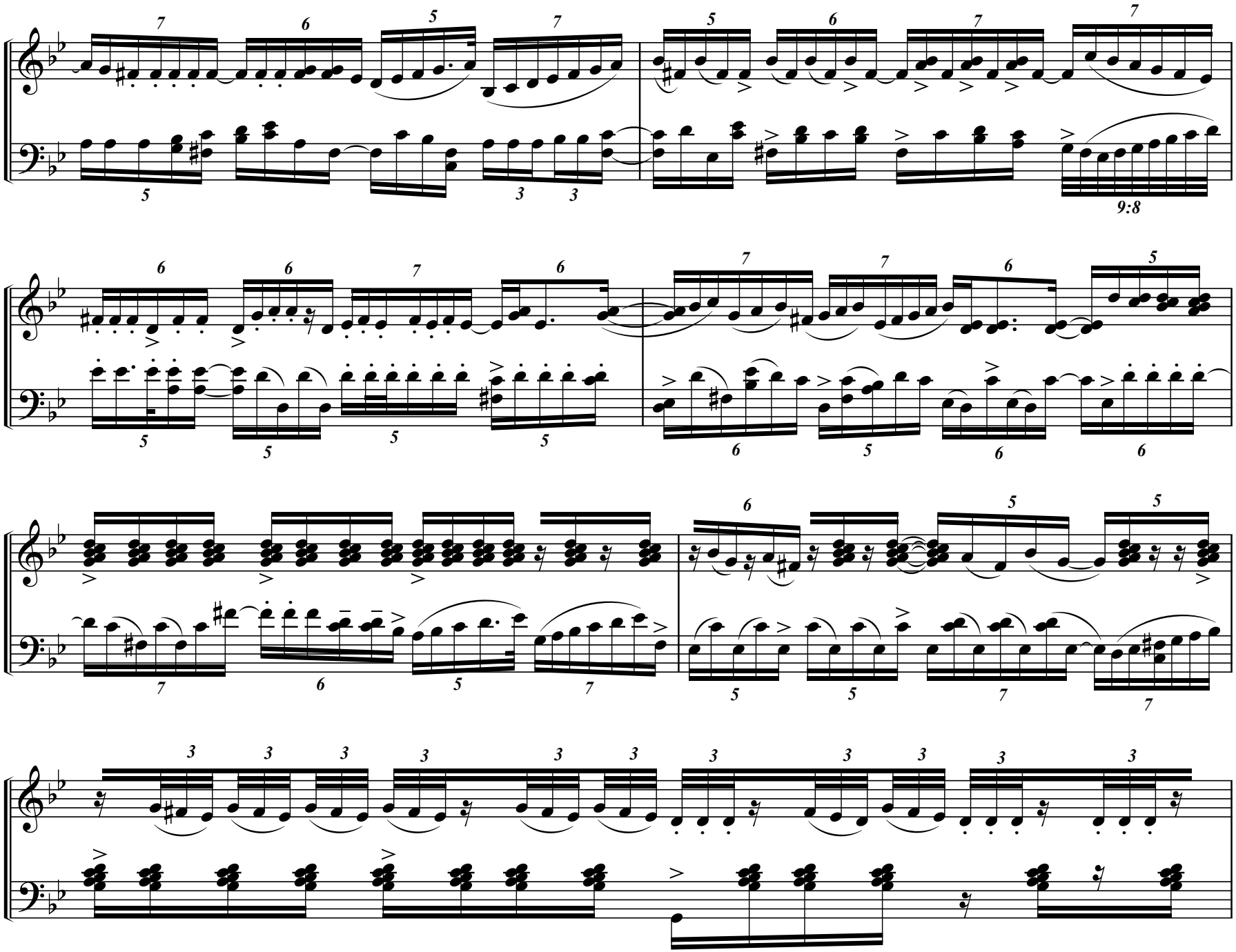


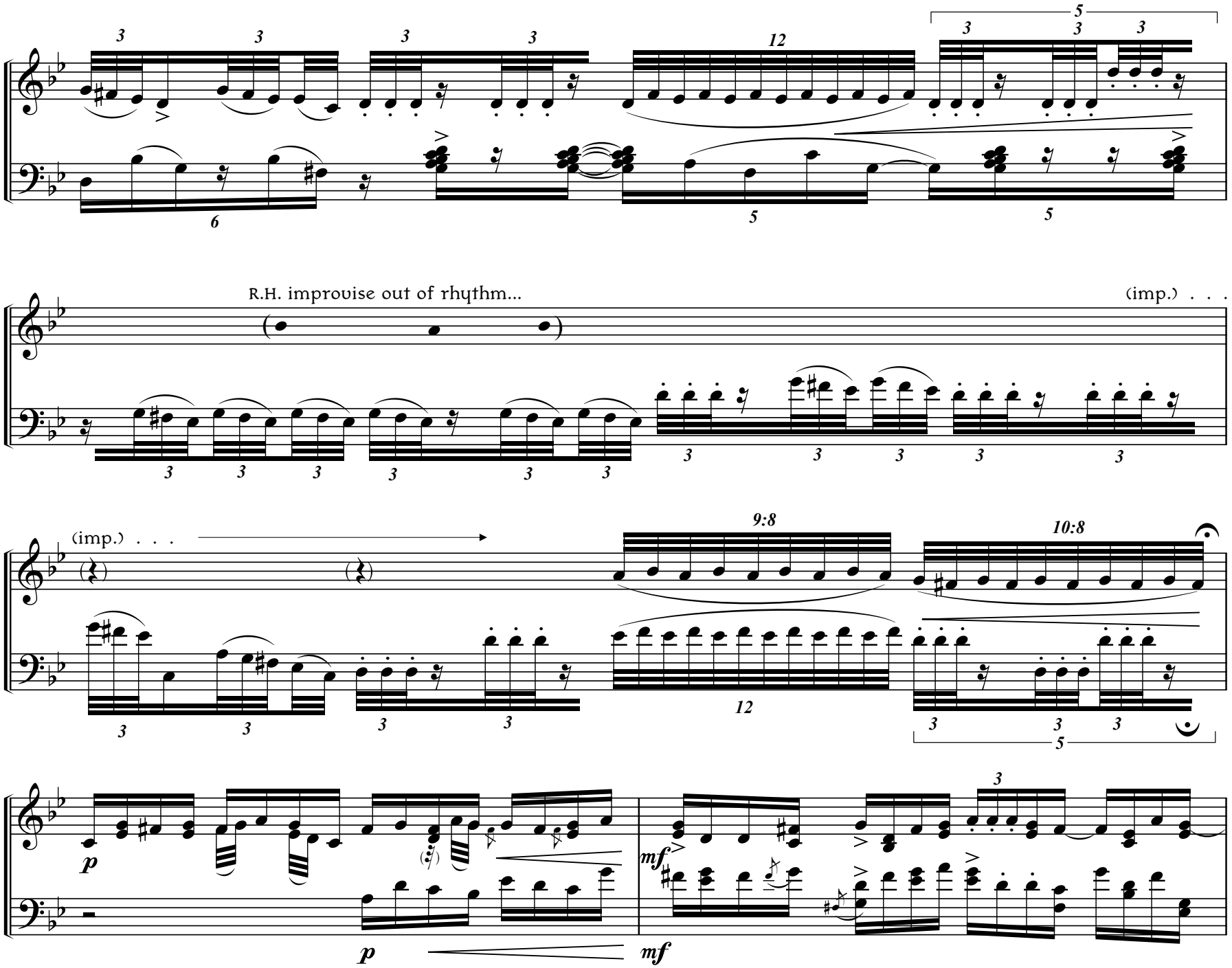
for David Mahler and Julie Hanify

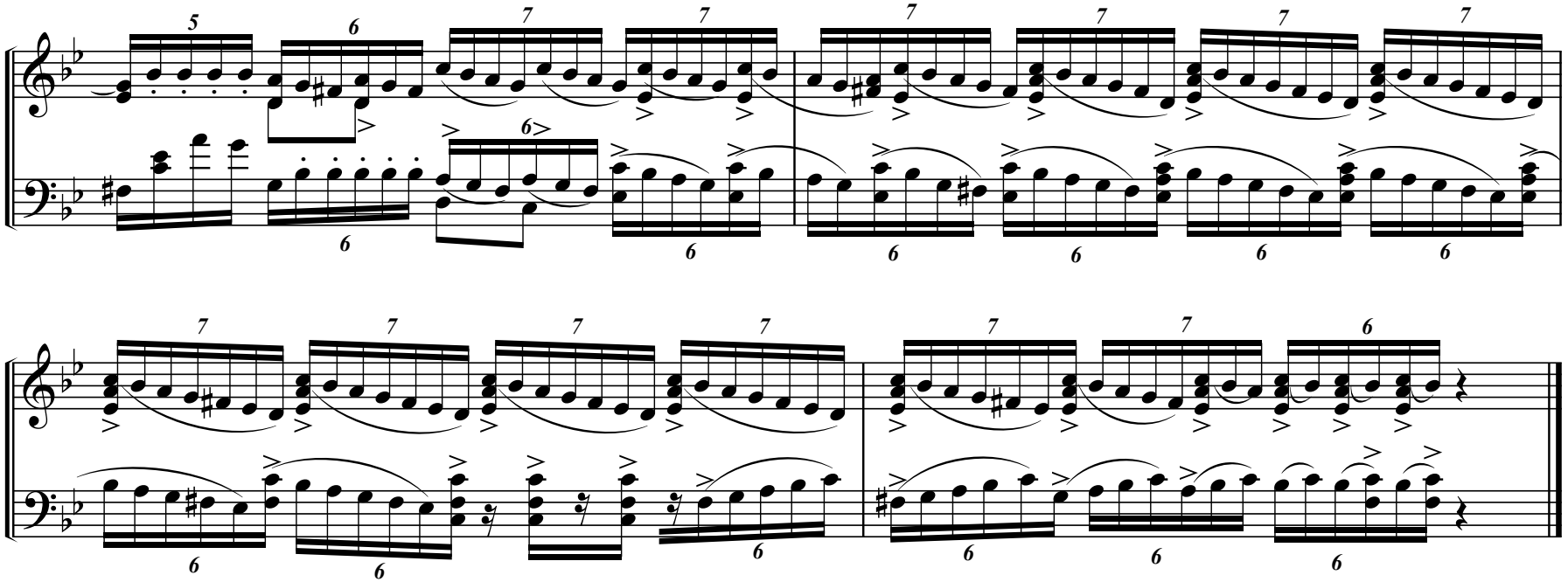
LP Pgh 2/17/08

4. (another canon for farwell)





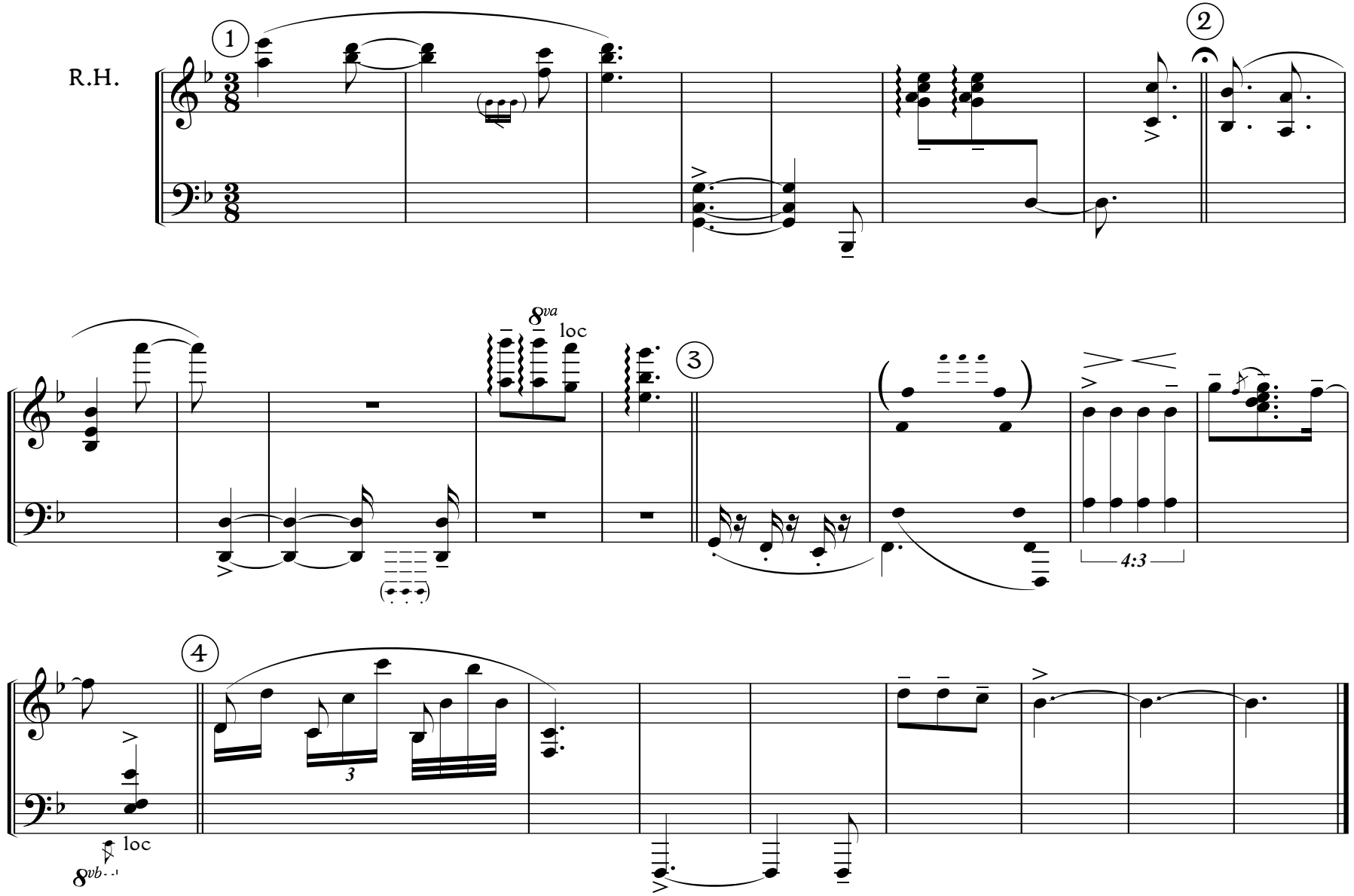

R.H. improvise out of rhythm...
(imp.) . . .
(imp.) . . .
9:8
10:8
p
mf
p
mf

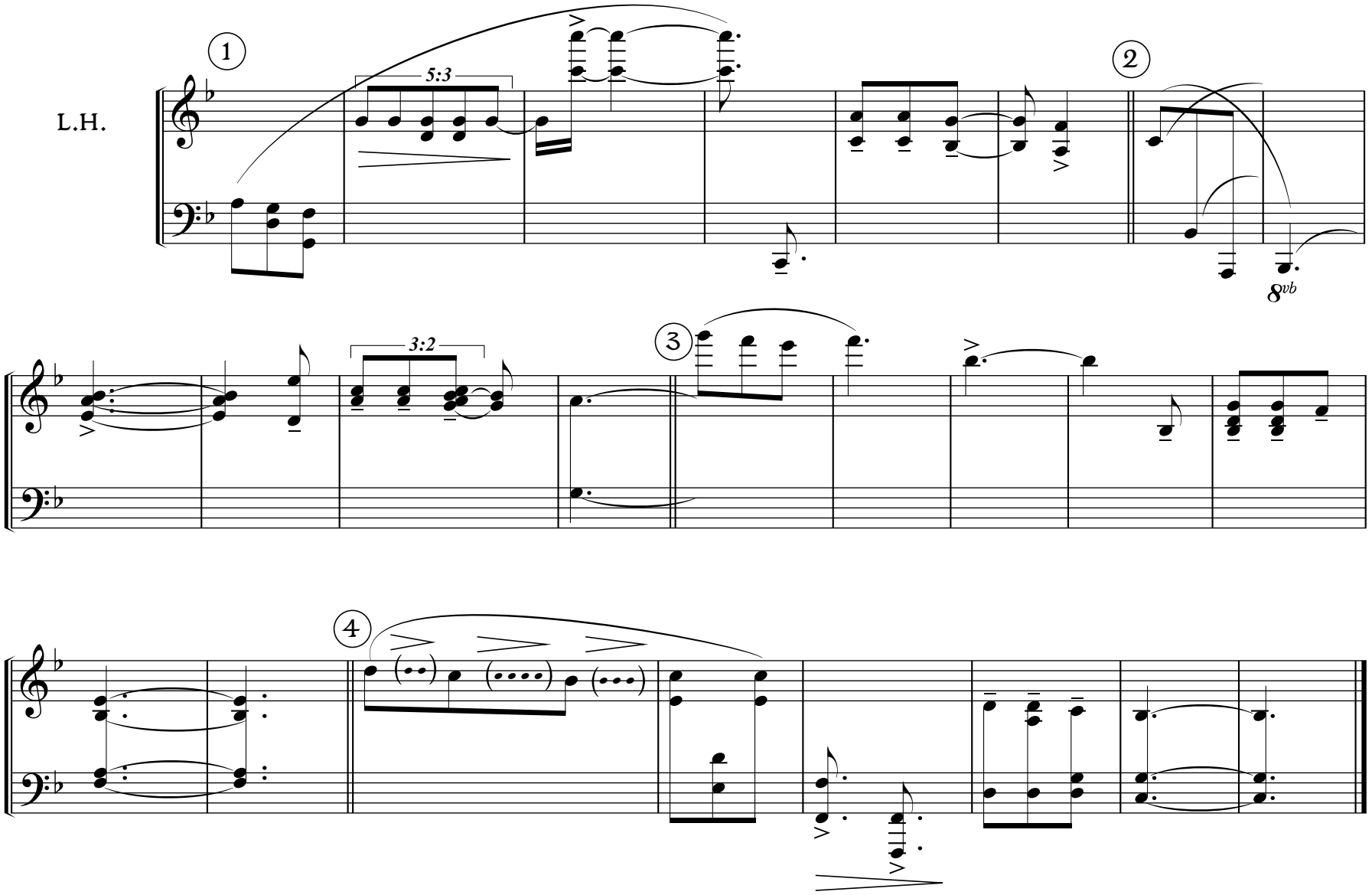


5. Slowly (song)

F mixolydian #4
(lydian melodic minor)

Hands independent, different slow tempi, quietly. Each hand should start together, stretch and contract tempi over the course of the piece, coming back together at the end.




L.H.
1
5:3
2
8vb
3:2
3
4

Part 2

6. Song
C major (with optional C-altered scale)

7. Chorale
Ab aeolian (harm. minor)
with optional voice

8. Dance (51 events)
A (harm. series)

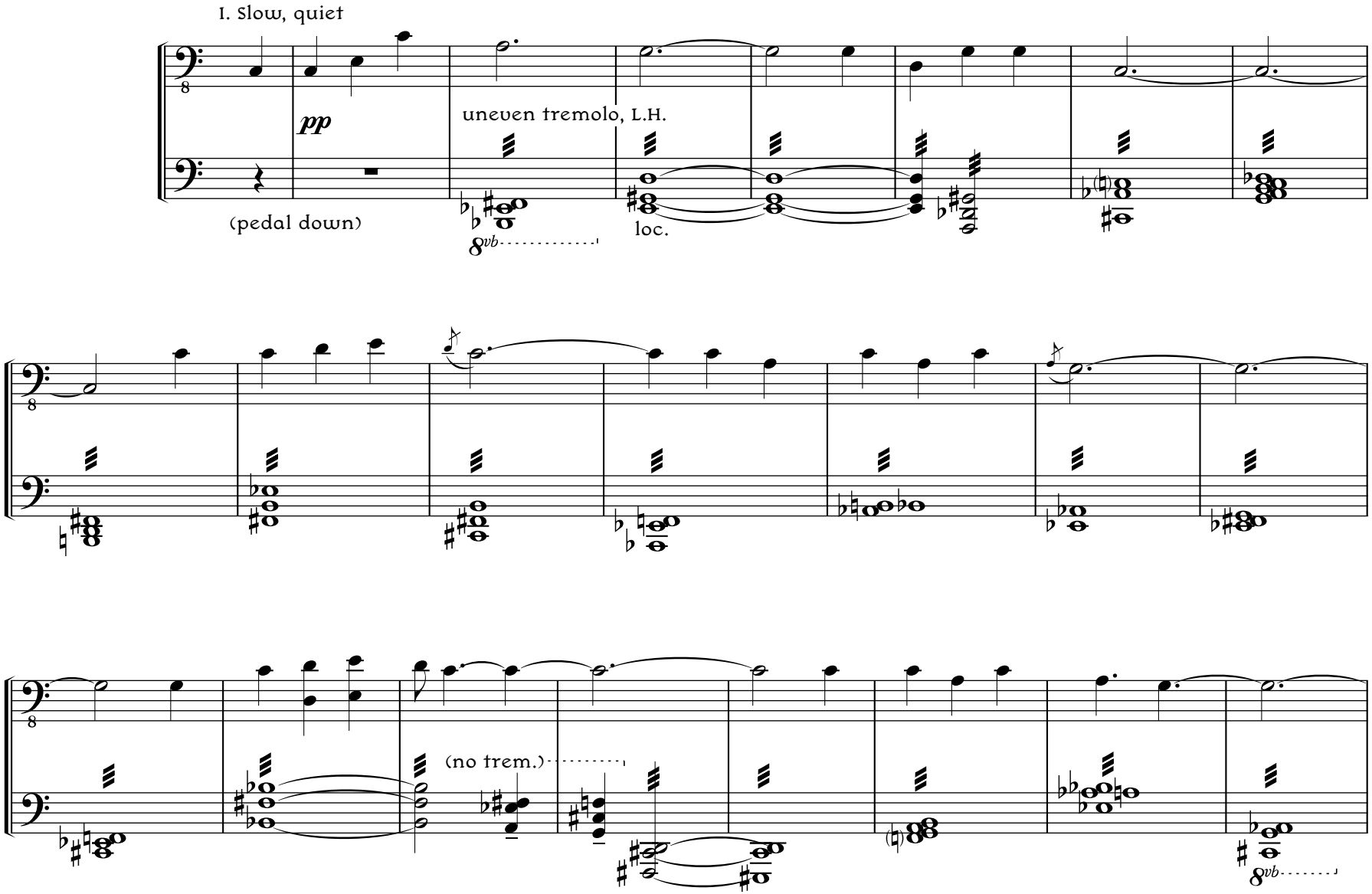
9. no luck around the house

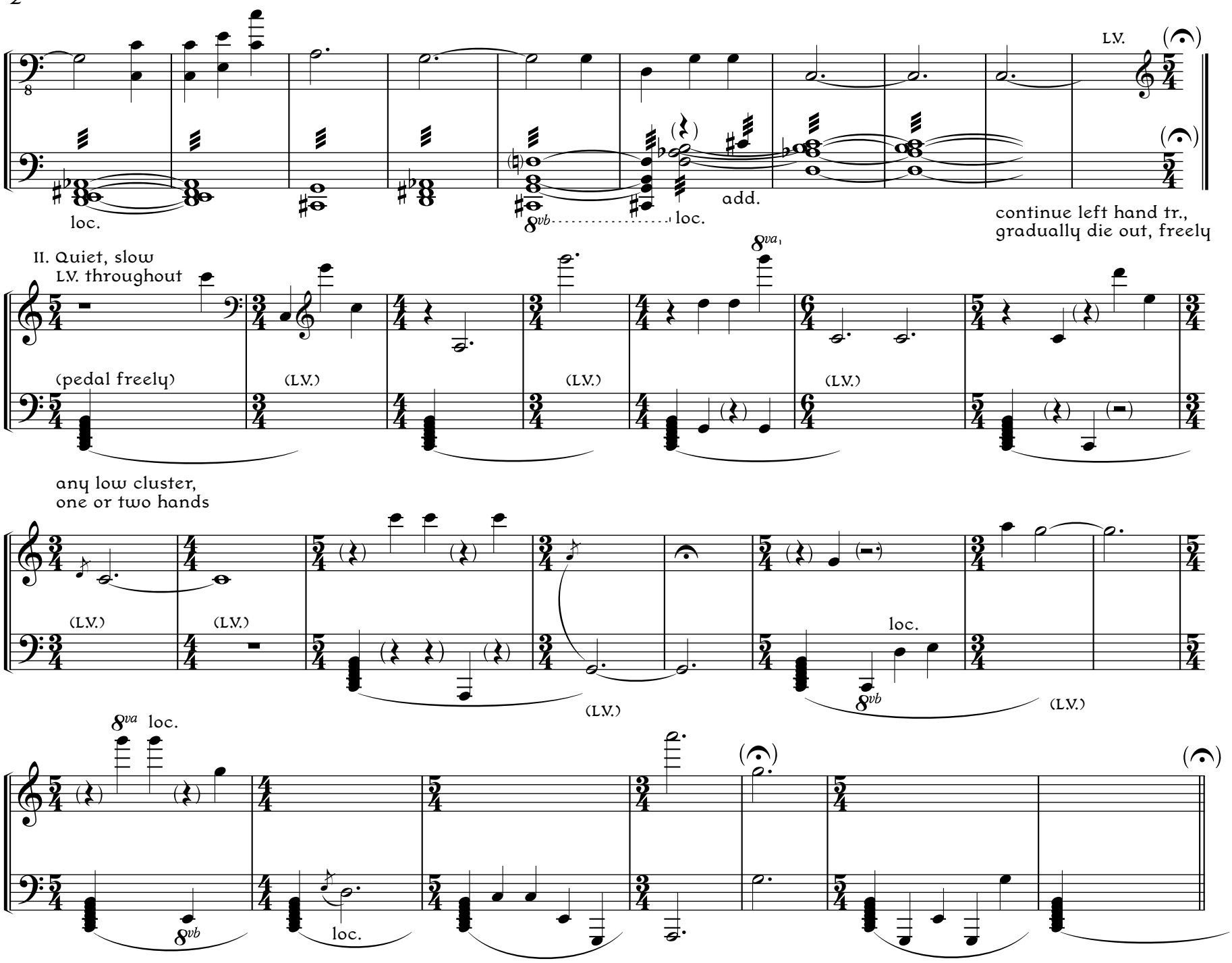
10. Stamp (for Lou Harrison)
(canon for two hands,
or any number of hands, instruments)
E octatonic

11. Canon in 2 voices
(slendros)

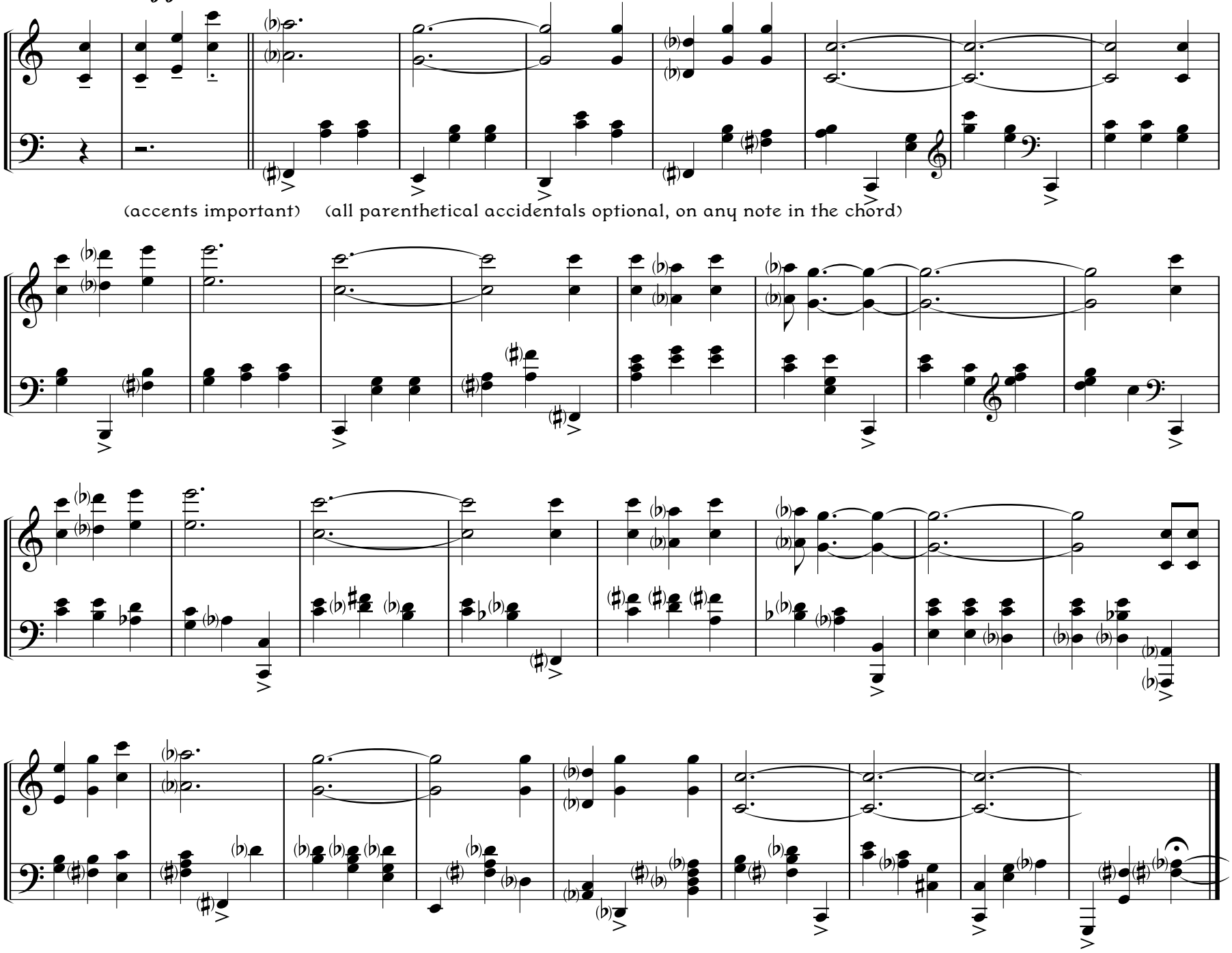
12. Song
(with whistler)
B minor/B locrian (harm. minor)

6. Song

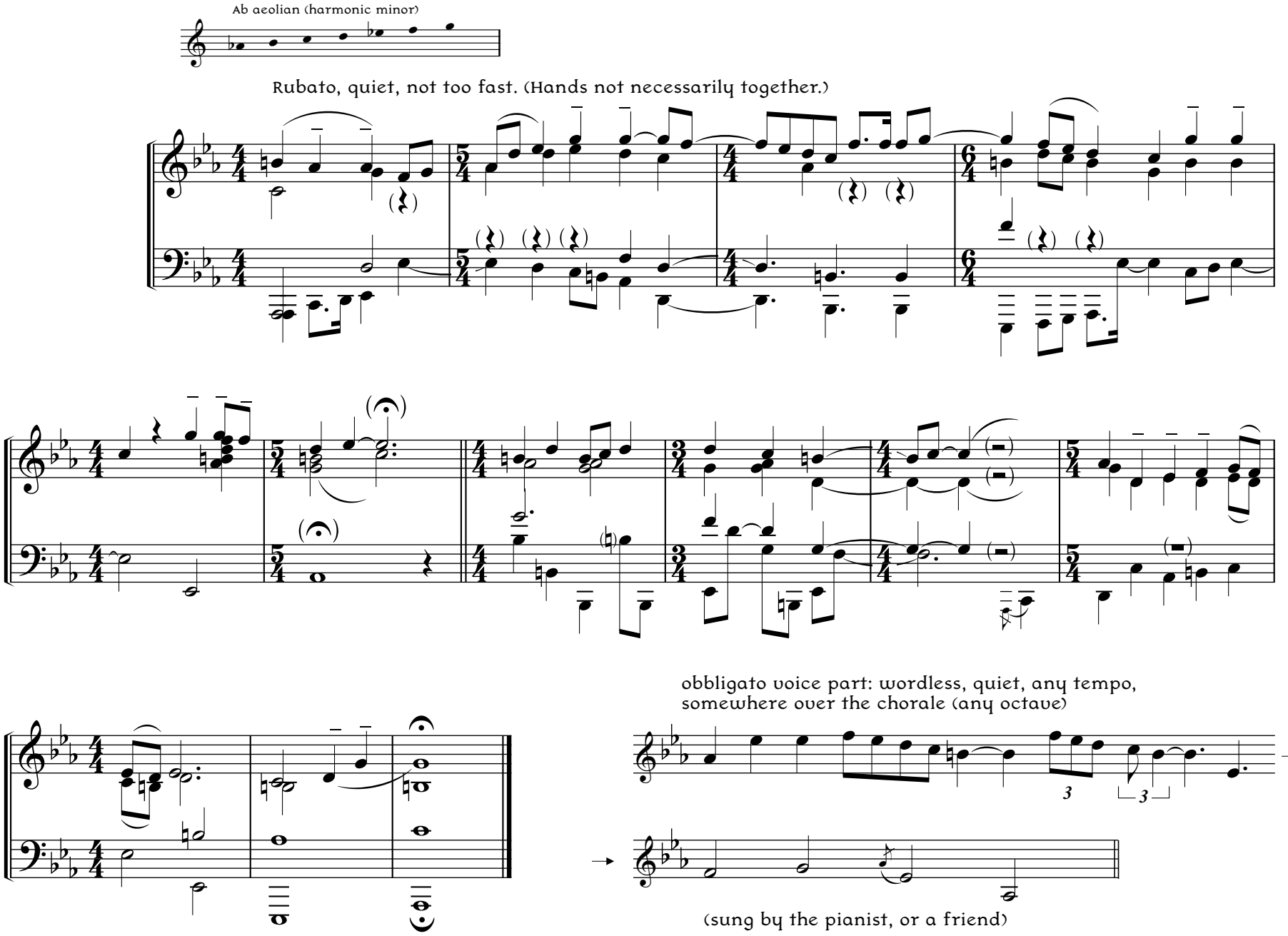

I. Slow, quiet
pp
(pedal down)
uneven tremolo, L.H.
8vb
loc.
(no trem.)
8vb


L.V.
loc.
8vb
loc.
add.
continue left hand tr.,
gradually die out, freely
II. Quiet, slow
L.V. throughout
8va
(pedal freely)
(L.V.)
(L.V.)
(L.V.)
any low cluster,
one or two hands
(L.V.)
(L.V.)
(L.V.)
loc.
8vb
(L.V.)
8va loc.
8vb
loc.

III. Waltz, ***mf-f***, rubato, not too slow.

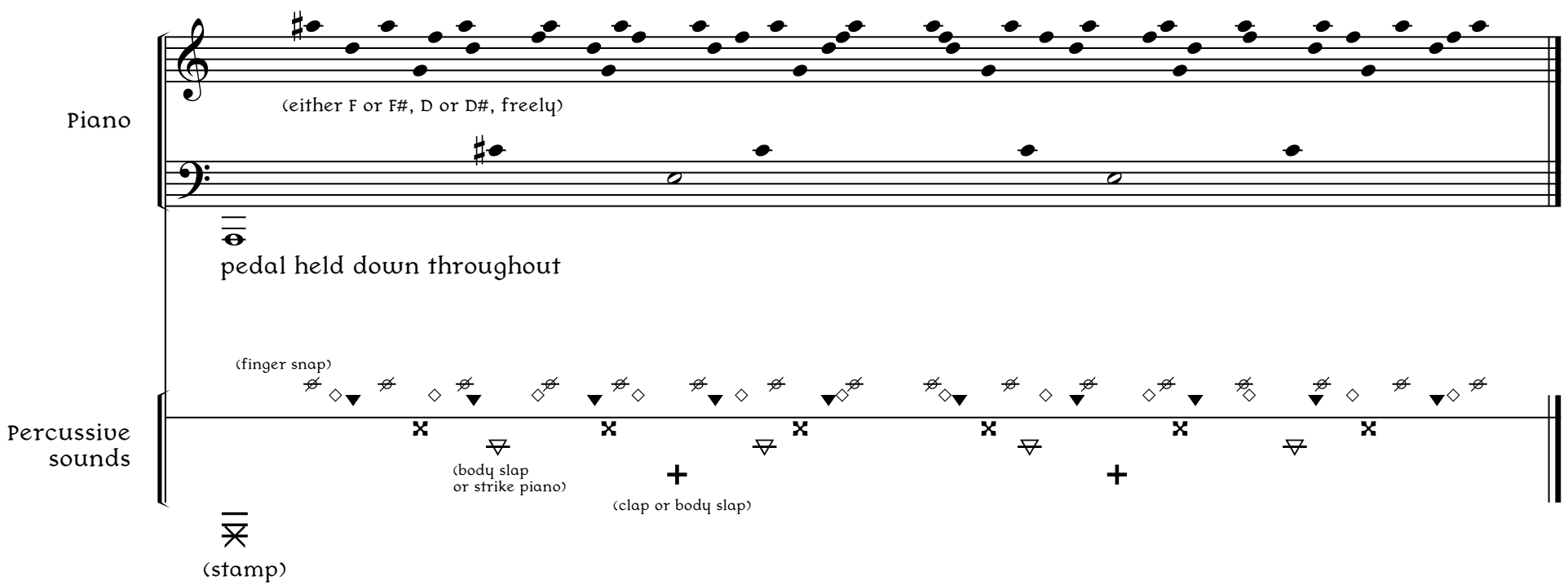


7. Chorale



LP 3/4/07

8. Dance (51 Events)



Repeat this measure several times, maintaining a reasonably strict tempo. Start with pitches (or percussive sounds), and with each repeat substitute some number (2—5) of percussive sounds (or pitches). In other words, move from pitches to percussive sounds, or vice versa.

There are 7 pitches, and 7 percussive sounds. The lowest pitch (A) should replace or be replaced by a foot stamp. the next lowest (E) = hand clap; C# = a body slap or striking the piano; the high (A#) = a finger snap. The percussive replacements for the three pitches in between (F, D, G) are left to the performer. They might include striking a different part of one's body or the piano, or using small percussive instruments.

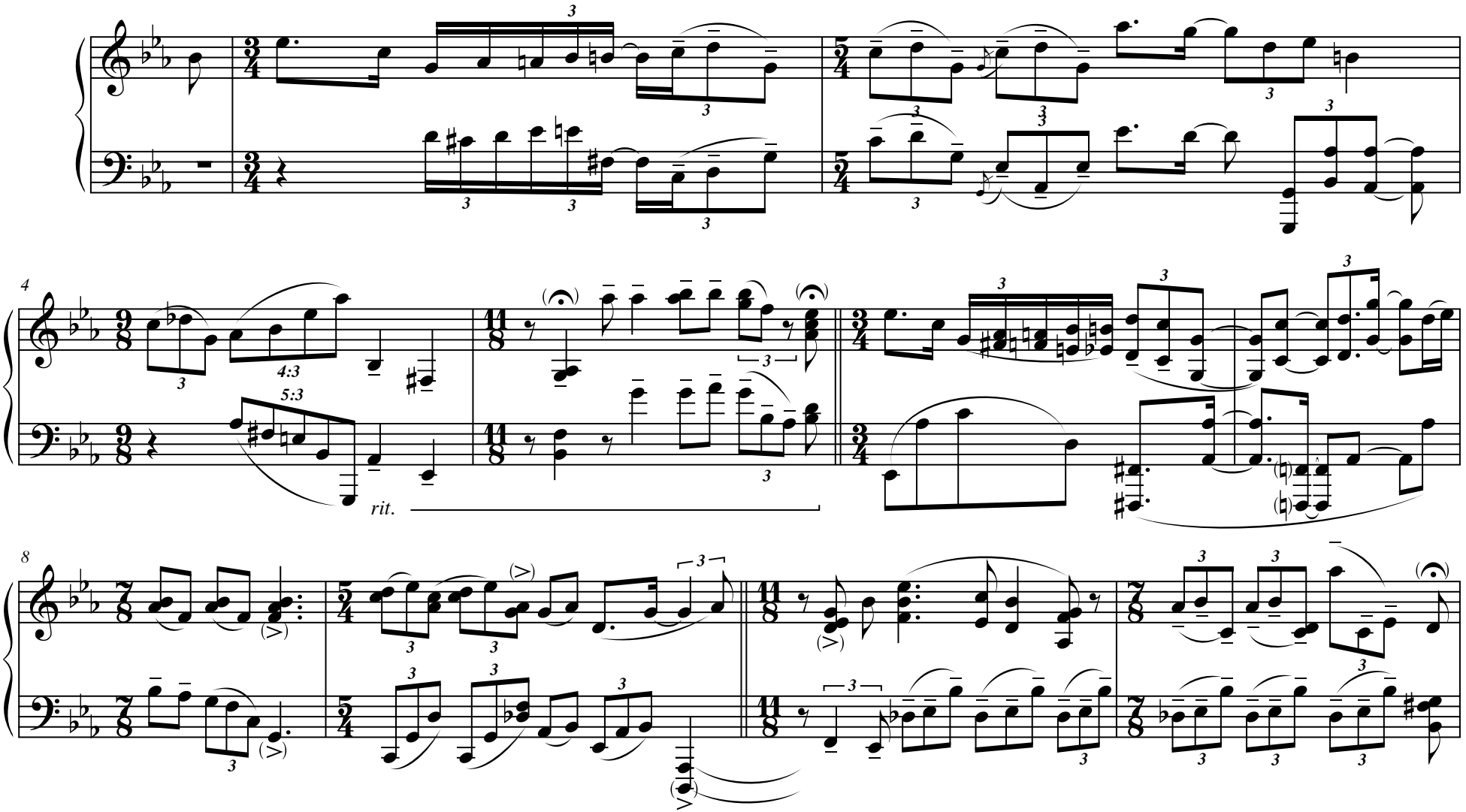
The percussive sounds should decrease in loudness from the lowest (foot stamp: quite loud) to the highest (finger snaps: quite soft). No vocal sounds should be used.

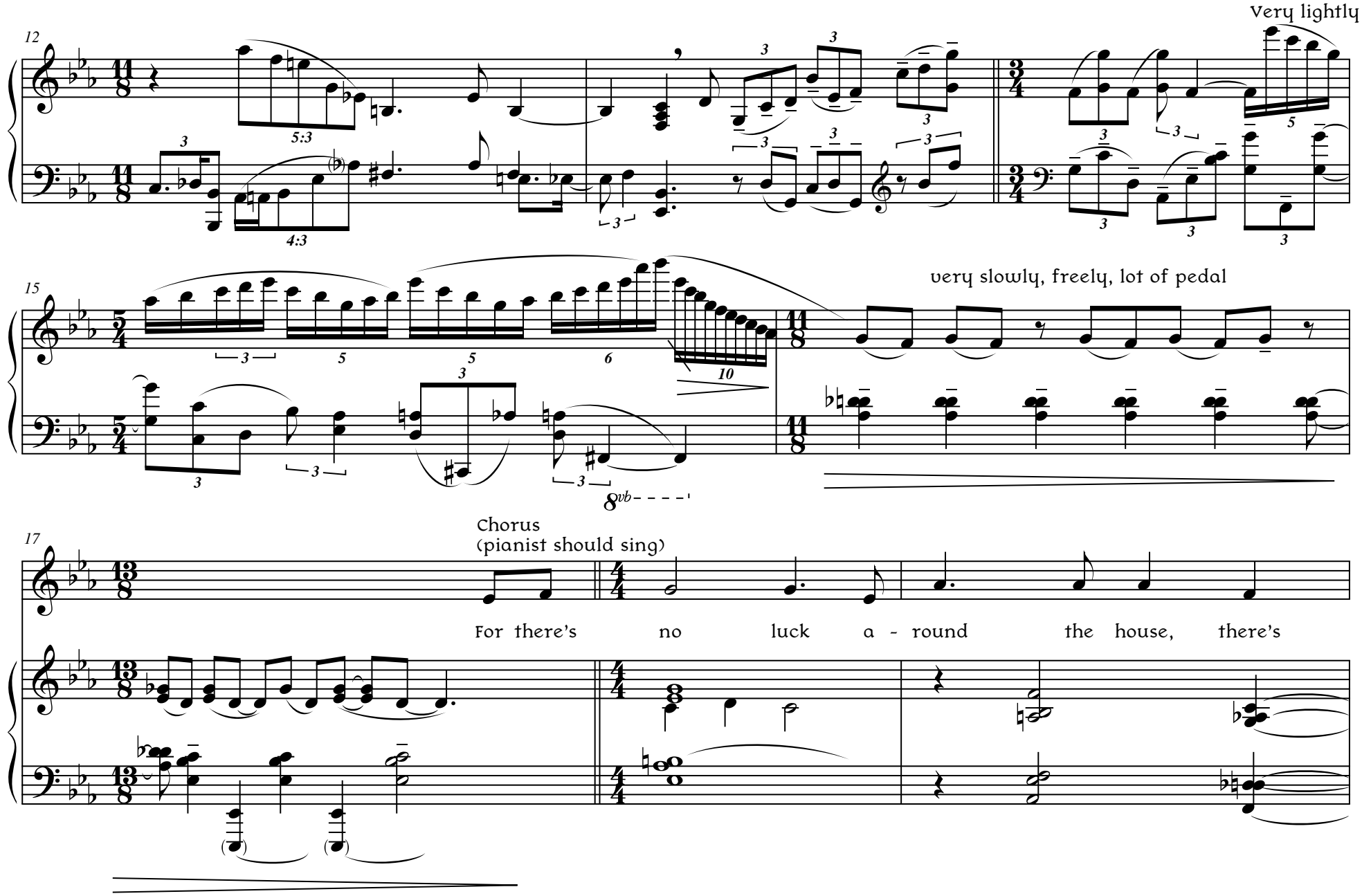
The measure should be played as fast as possible.

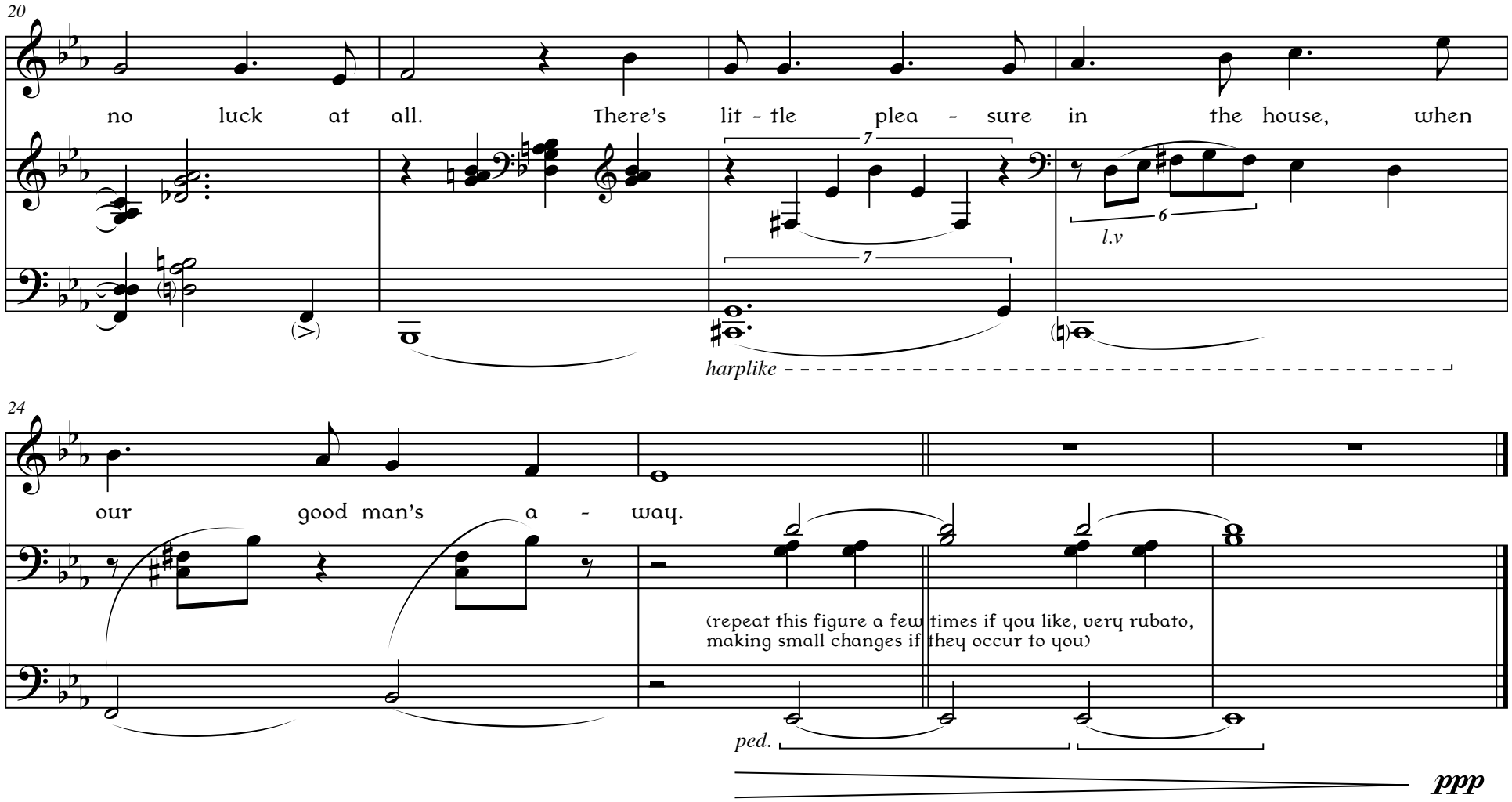
lp
3/10/08
rev. 06/17/08
6:42 PM

#9 no luck around the house

very slowly, quietly, rubato, pedal freely and liberally



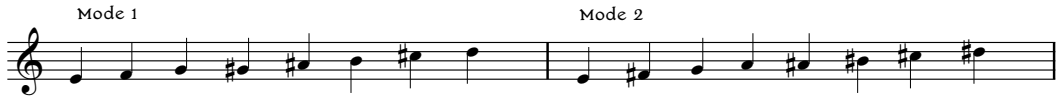

12
Very lightly
15
very slowly, freely, lot of pedal
8vb
17
Chorus
(pianist should sing)
For there's no luck a - round the house, there's



(from *Yours for A Song*, compiled by Janet E. Tobitt, 1939)

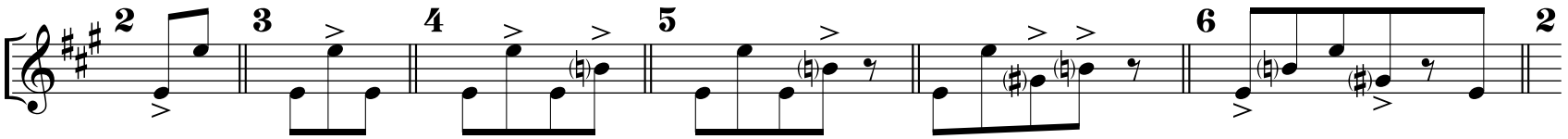
lp
hanover, nashville
9/23-28/08
rev. 10/7/08
11:12 AM

10. Stamp (for Lou Harrison) (Canon)

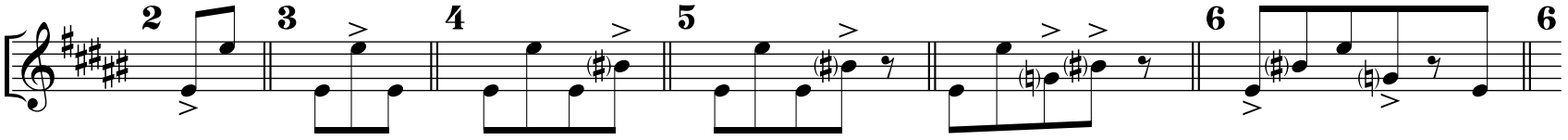


mode 1

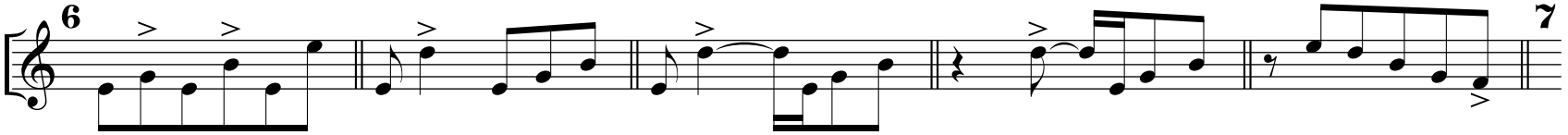
Fast, not soft (dynamics, flexible)



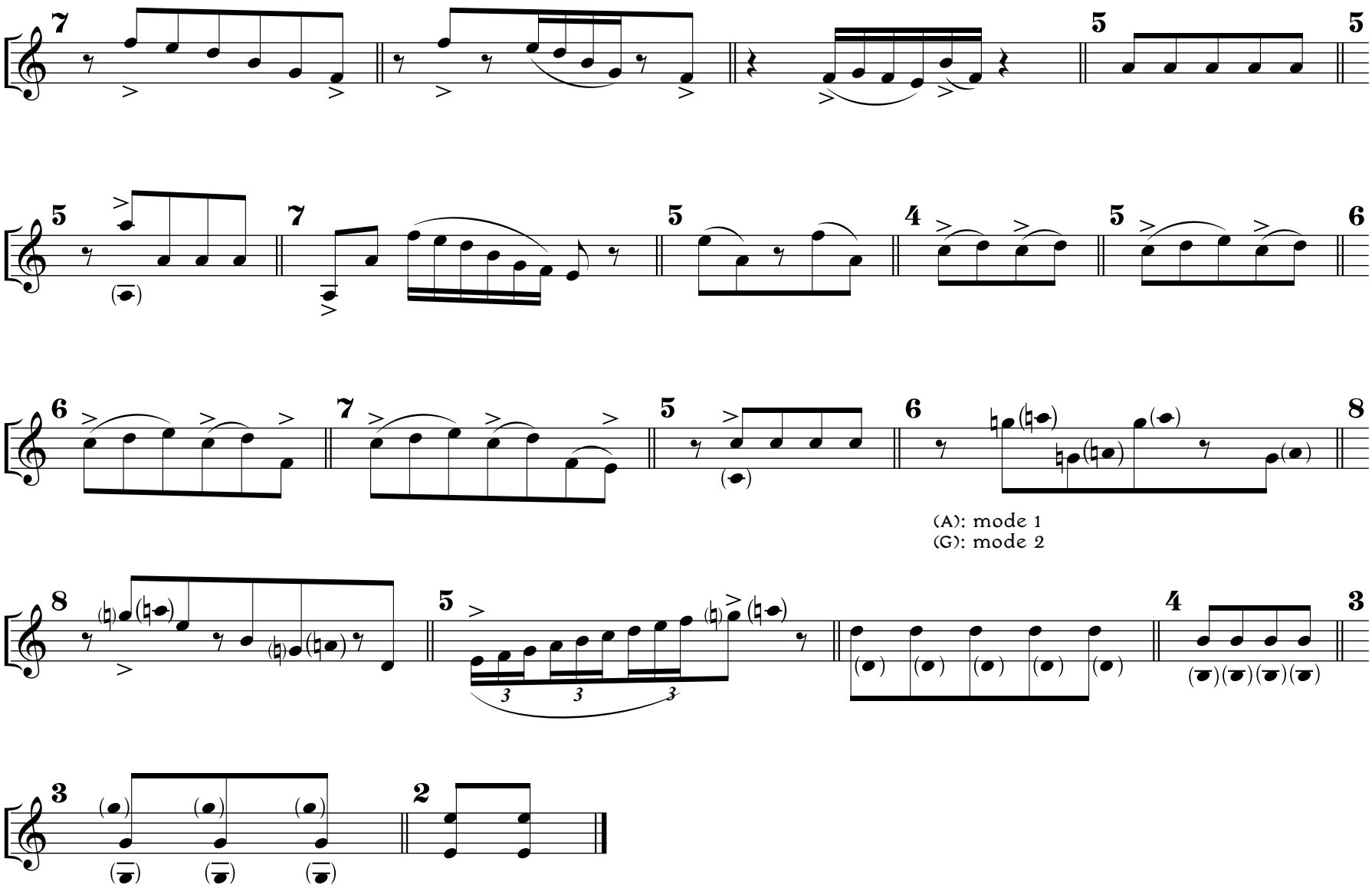
mode 2



mode 1
or
mode 2



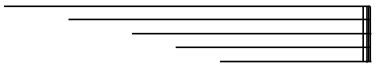
In either mode, or changing between them.
Each measure repeats. Either hand, any octave (may shift for entire measures). Canon for two hands, or any number of hands (and additional instruments). Voices can start anywhere, at different tempi, not necessarily on the pulse. Tempi for voices may fluctuate. Other instruments might mistune slightly. If there are several voices, one or more may just play accents.



(A): mode 1
(G): mode 2

(all voices come together at end)

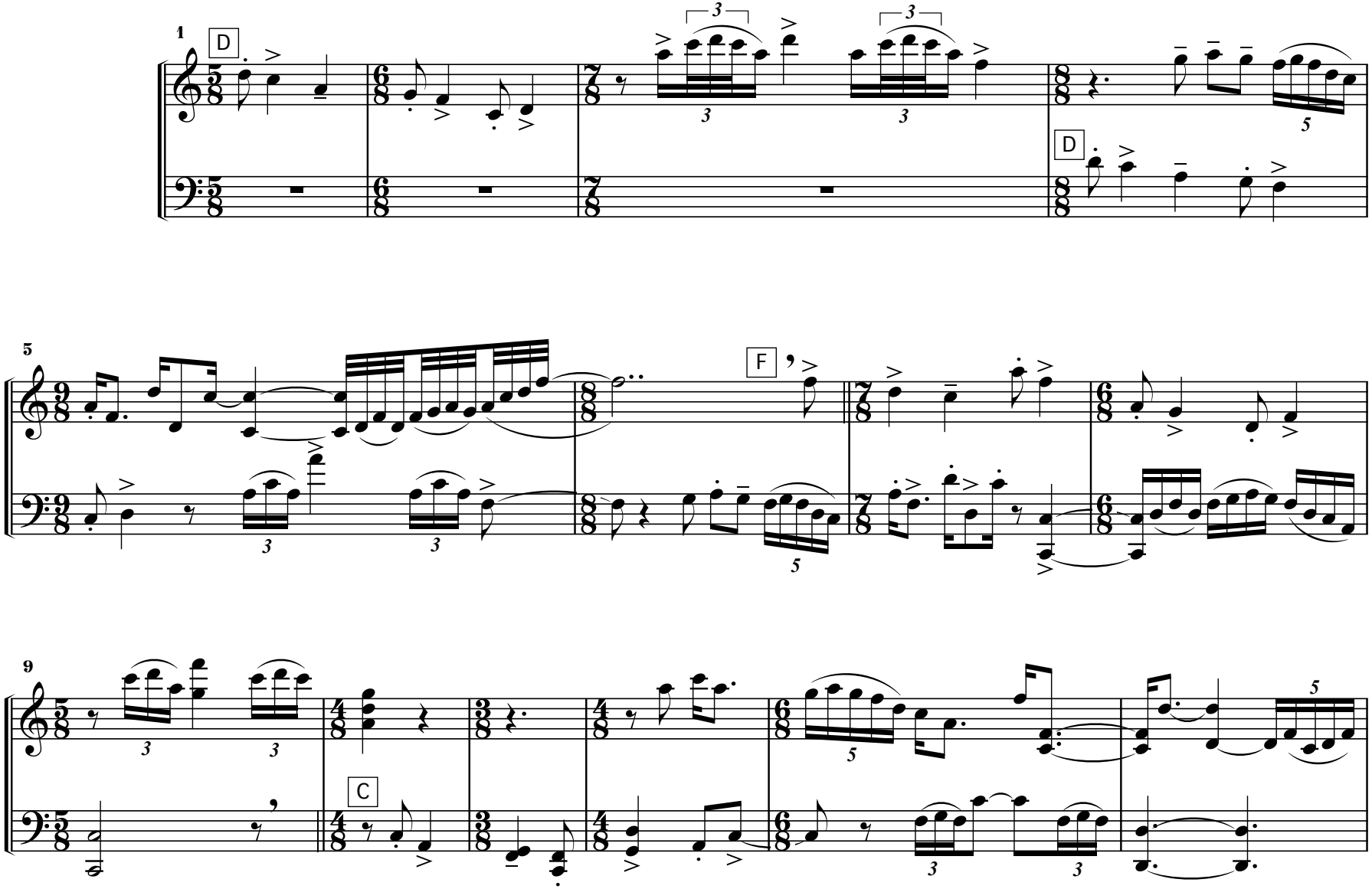
or as a mensuration canon, e.g.:

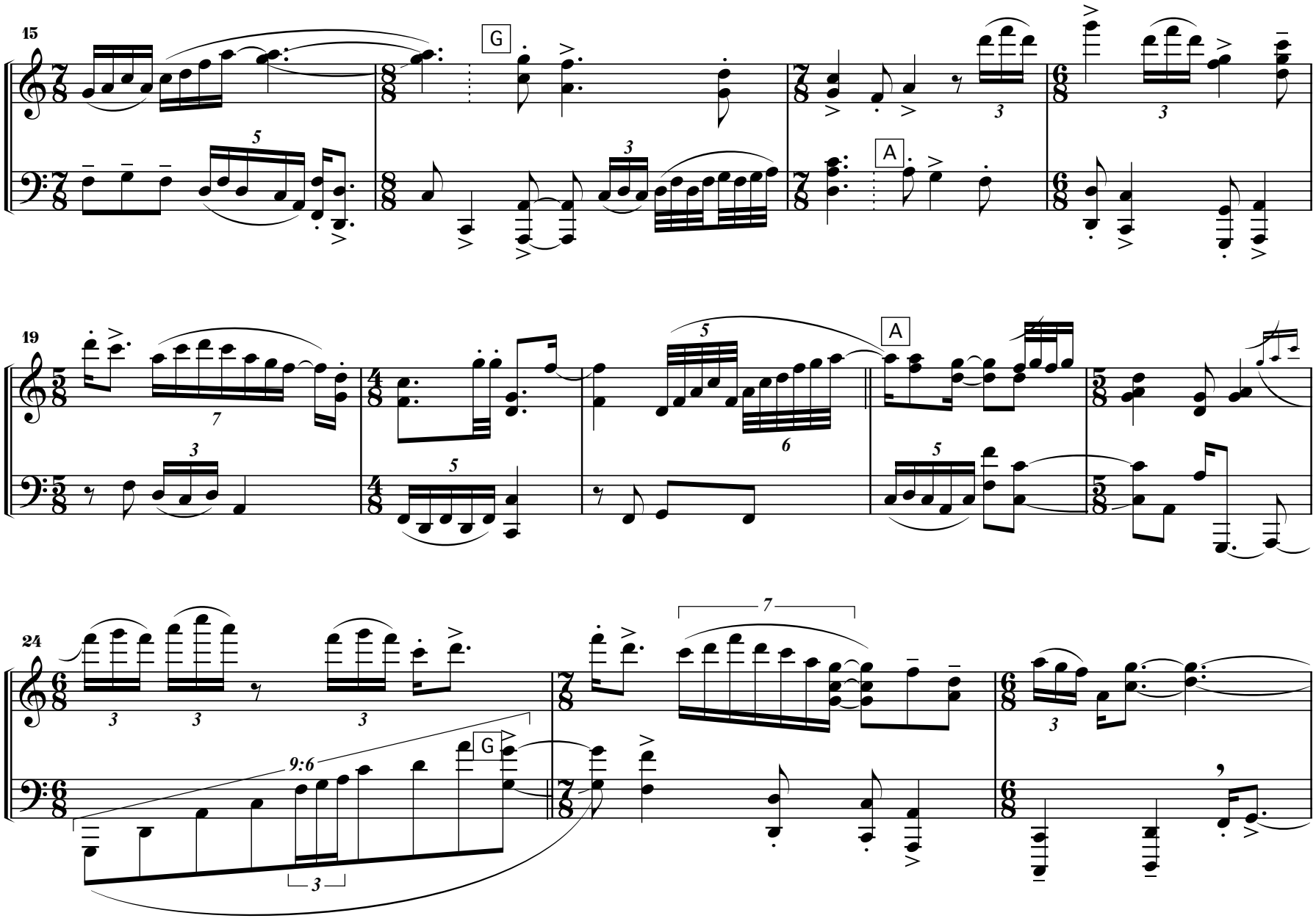


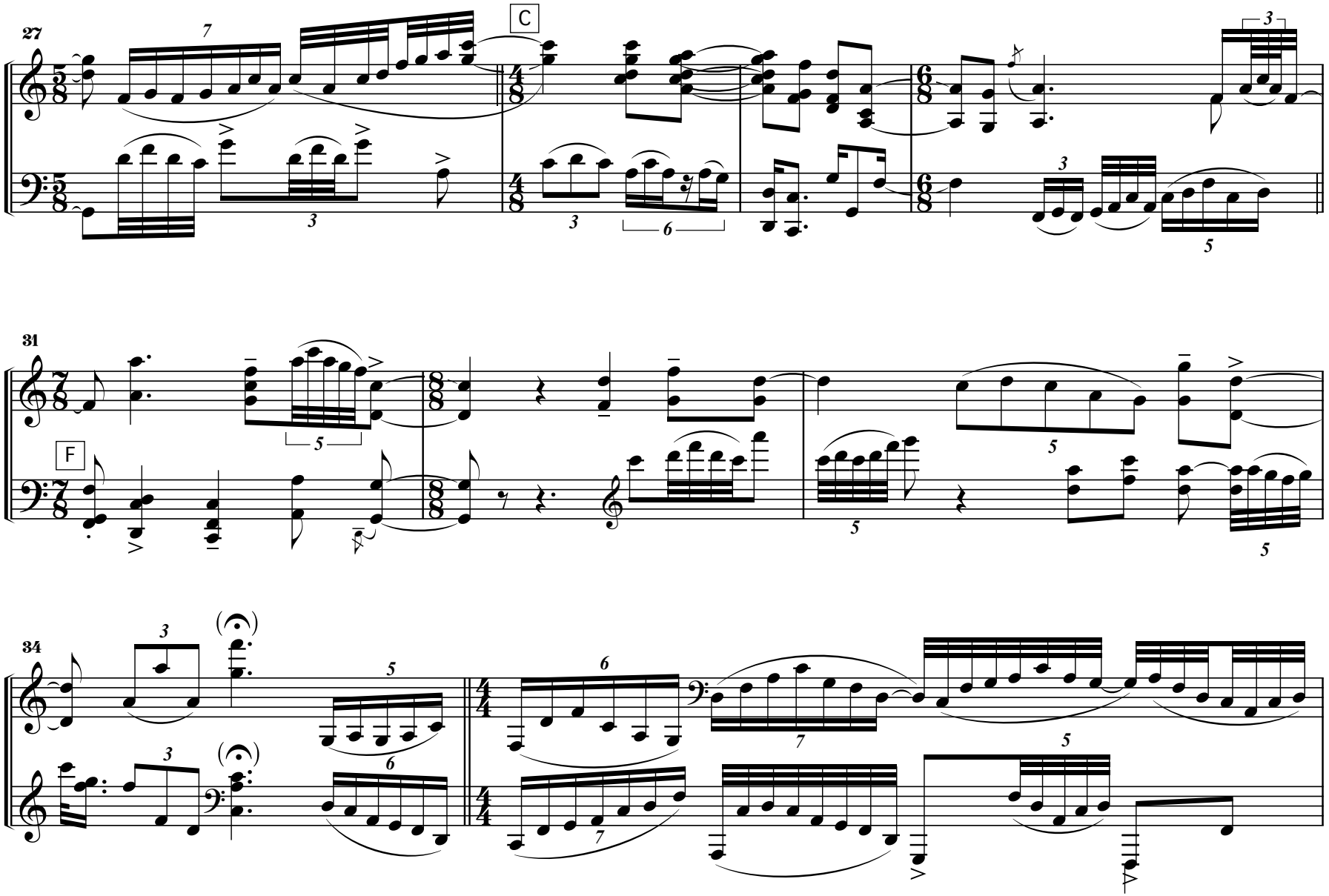
LP 3/5/08

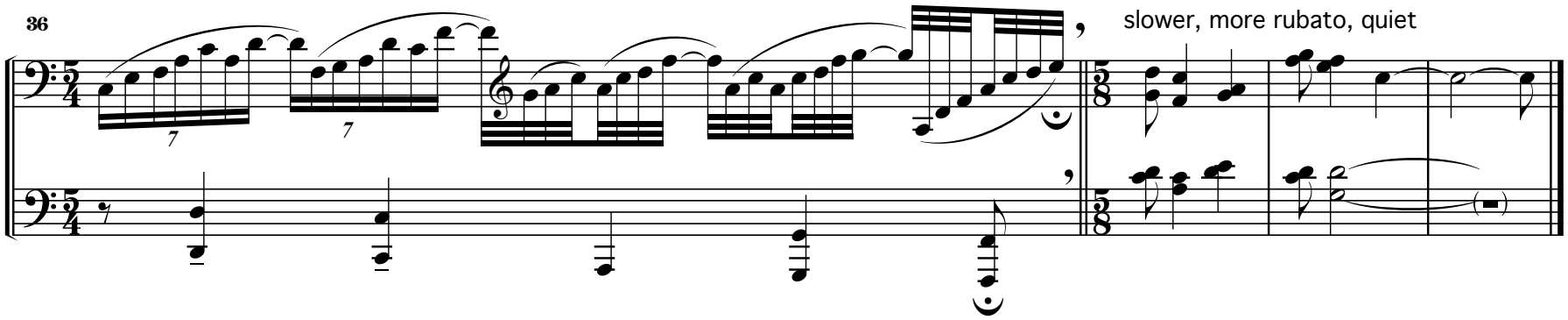
11. Canon in 2 Voices

(in slendros)




15
G
A
19
A
24
G
9:6

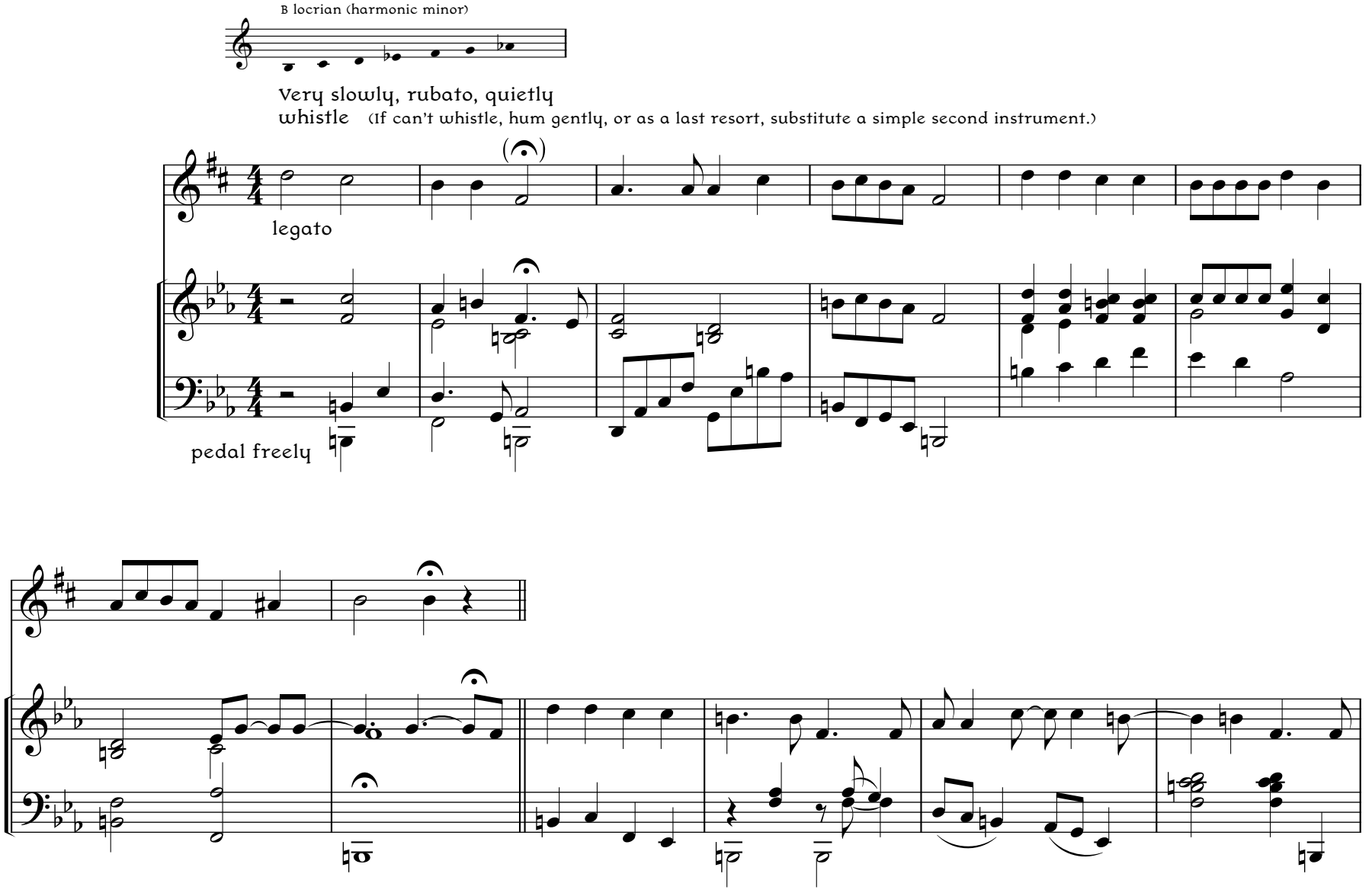

27
C
31
F
34

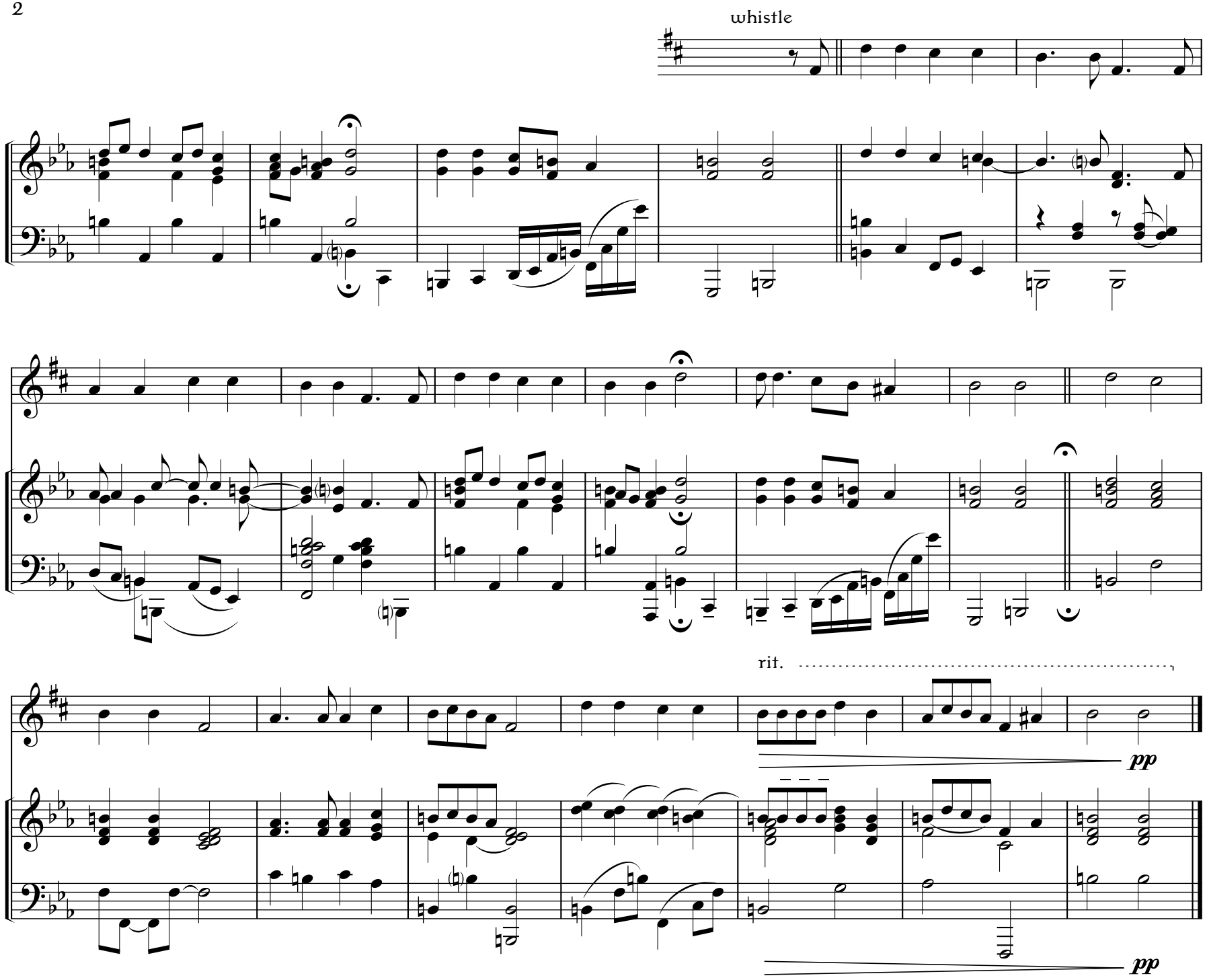


LP 12/31/08
(after Moondog)

slight revision, 11/20/10

12. Song


B locrian (harmonic minor)
very slowly, rubato, quietly
whistle (If can't whistle, hum gently, or as a last resort, substitute a simple second instrument.)
legato
pedal freely


whistle
rit.
pp
pp

Part 3

13. an anti-war round

14. for piano left hand

15. 102 Chords
for piano and optional other instruments
F# mixolydian (mel. minor)

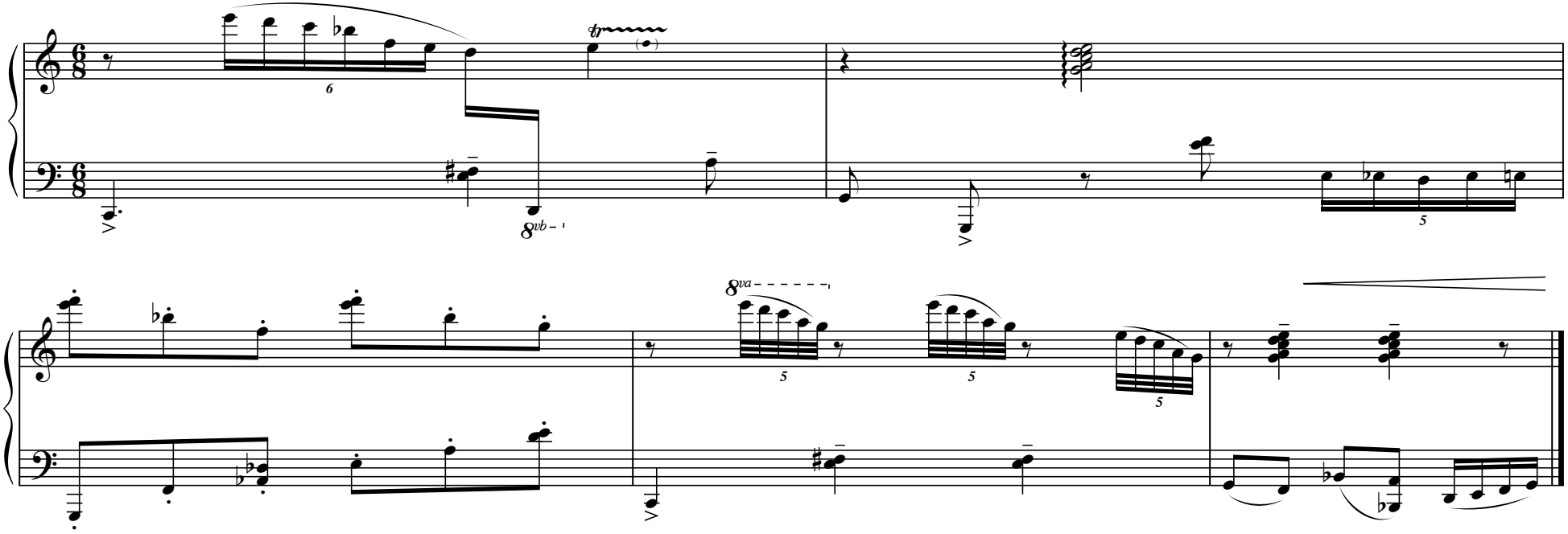
16. piano lesson
for piano and five audience pianists
(or for piano and any five instruments)
A aeolian (mel. minor)

17. “Prayer for the Nations”
Ab; Ab aeolian, lydian, mixolydian, phrygian (harm. minor)

13. an anti-war round (I)
(piano part)

polansky

(tempo of the round)



#13, the round, is intended to be sung by the audience, or members of the audience. Alternatively, several singers can be engaged to do it. If the latter, those singers should, preferably, not be trained singers, but enthusiastic, confident, and loud ones.

The pianist, perhaps with help from one or more of the singers or audience members, should teach the audience the round as part of the performance. It would be helpful to distribute the vocal score, or even just the words, beforehand, or put either or both in the program.

This piano part optionally accompanies the round. Alternatively, the pianist can just help the singers (especially if they come from the audience, or are the audience) by playing the tune with them, or a simple accompaniment of their own devising. A simple (5/8) rhythmic part (perhaps keeping 3+2 with a pair of drumsticks) may also be added, played by one of the singers, to help the audience/singers stay in time.

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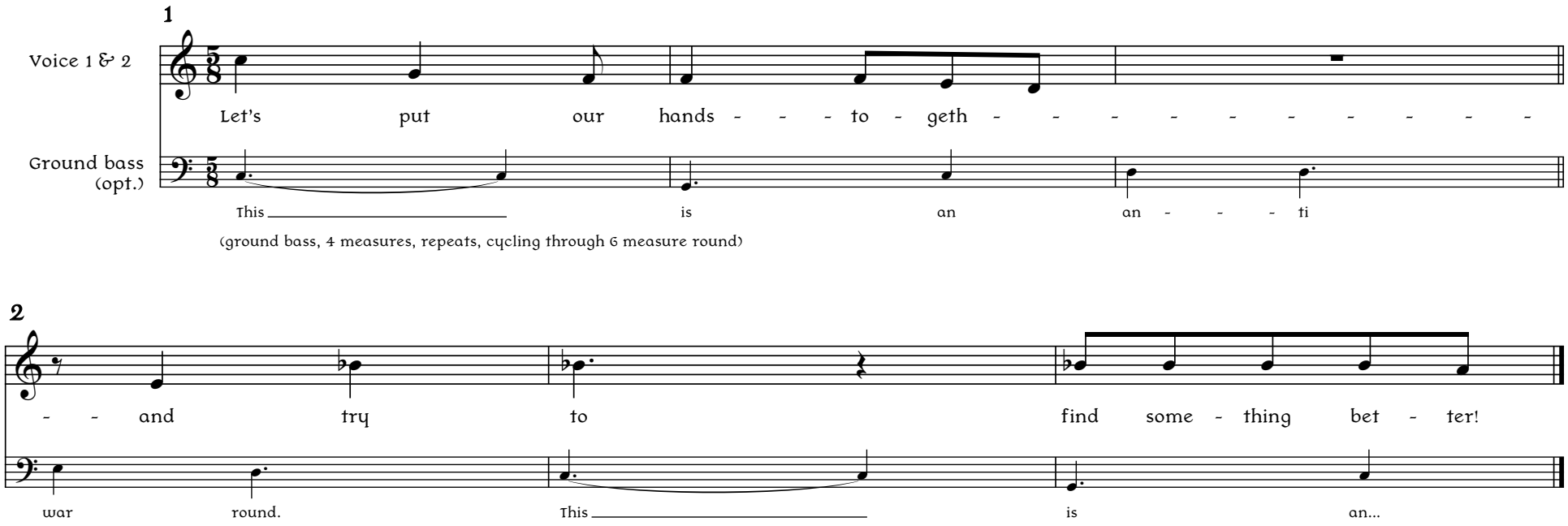
13. an anti-war round

2 voices with optional ground bass

polansky



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8/31/08 rev. 09/6/08
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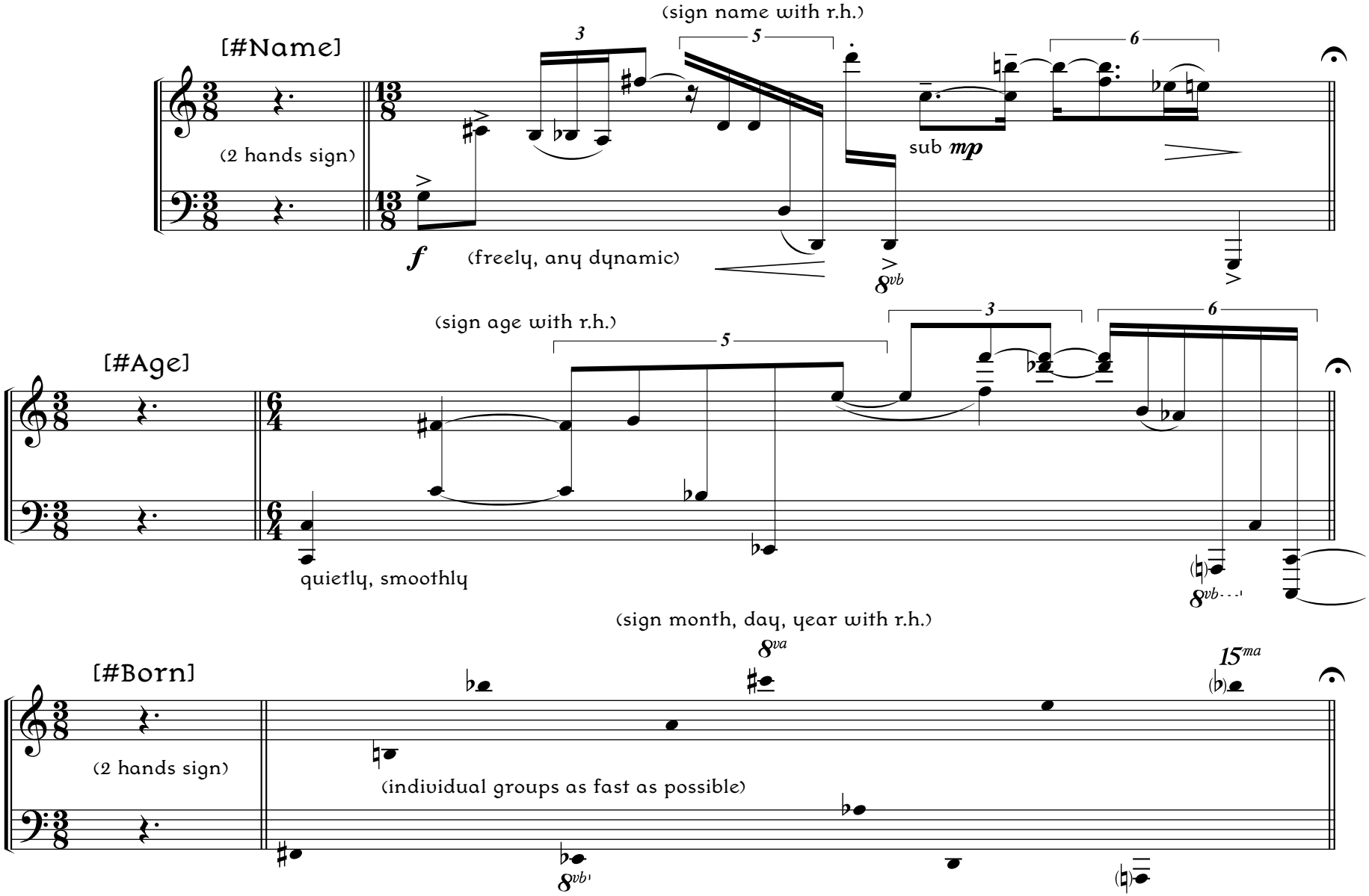
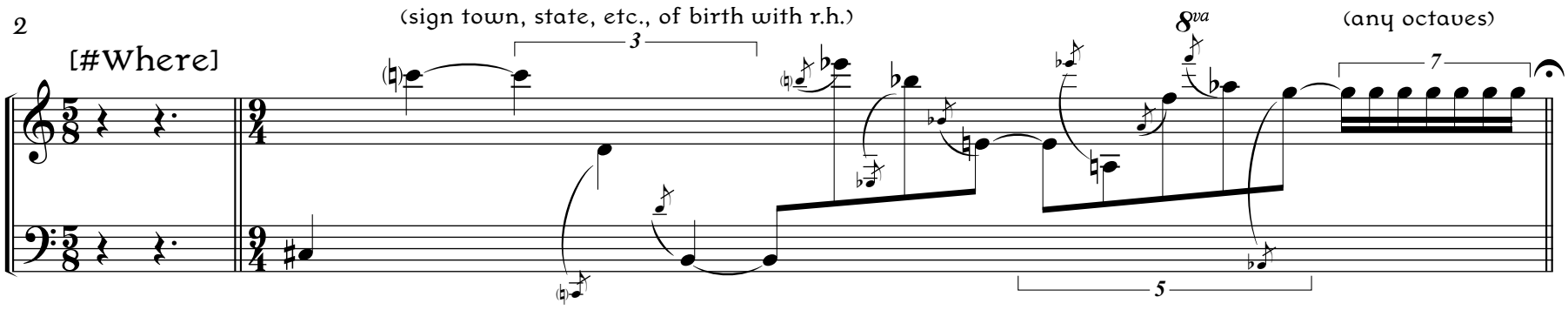
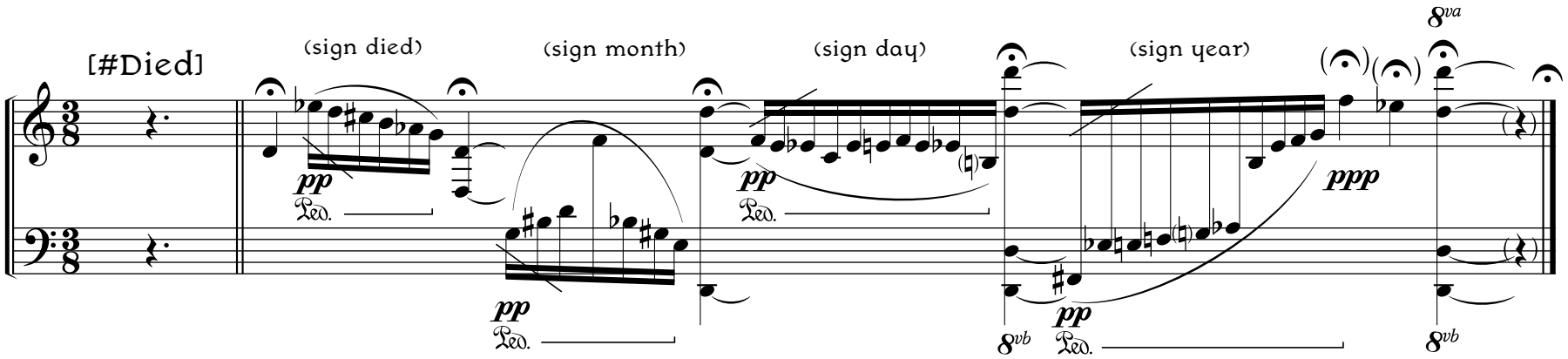
14. for piano left hand



Dynamics, articulation, free. Fast, not even. In three groups (month, day, year) with slight pauses in between.





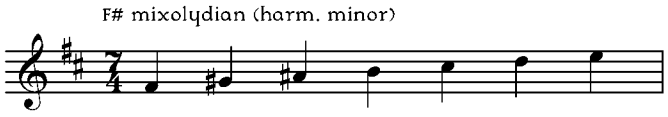
Note to the performer: Chose someone who has died in war. Learn to sign (in ASL or the sign of your choice) their name, age, date of birth, place of birth, date of death, as well as #Name, #Age, #Born, #Where, #Died. The latter signs can be done with two hands if appropriate (#Name, #Born, #Died in ASL). The other signing should be done with the R.H. while the piano part is played with the L.H. The pianist should sign hisrself, to the the best of hisr ability, but hse is encouraged to enlist the aid of a teacher in learning these few signs.

Please add, in sign, any other information you want, during the fermatas between lines.

LP Hanover NH 7/08

15. 102 chords

(piano and optional other instruments)



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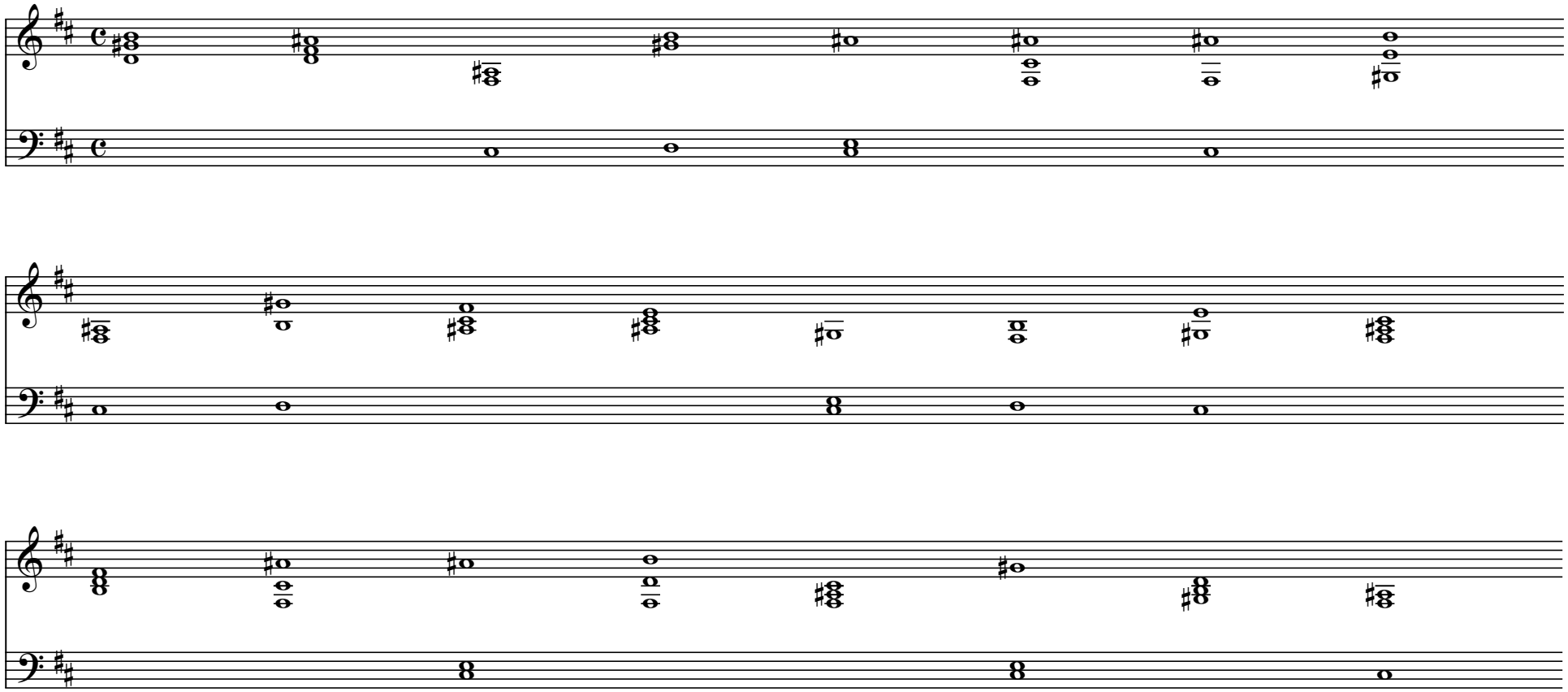
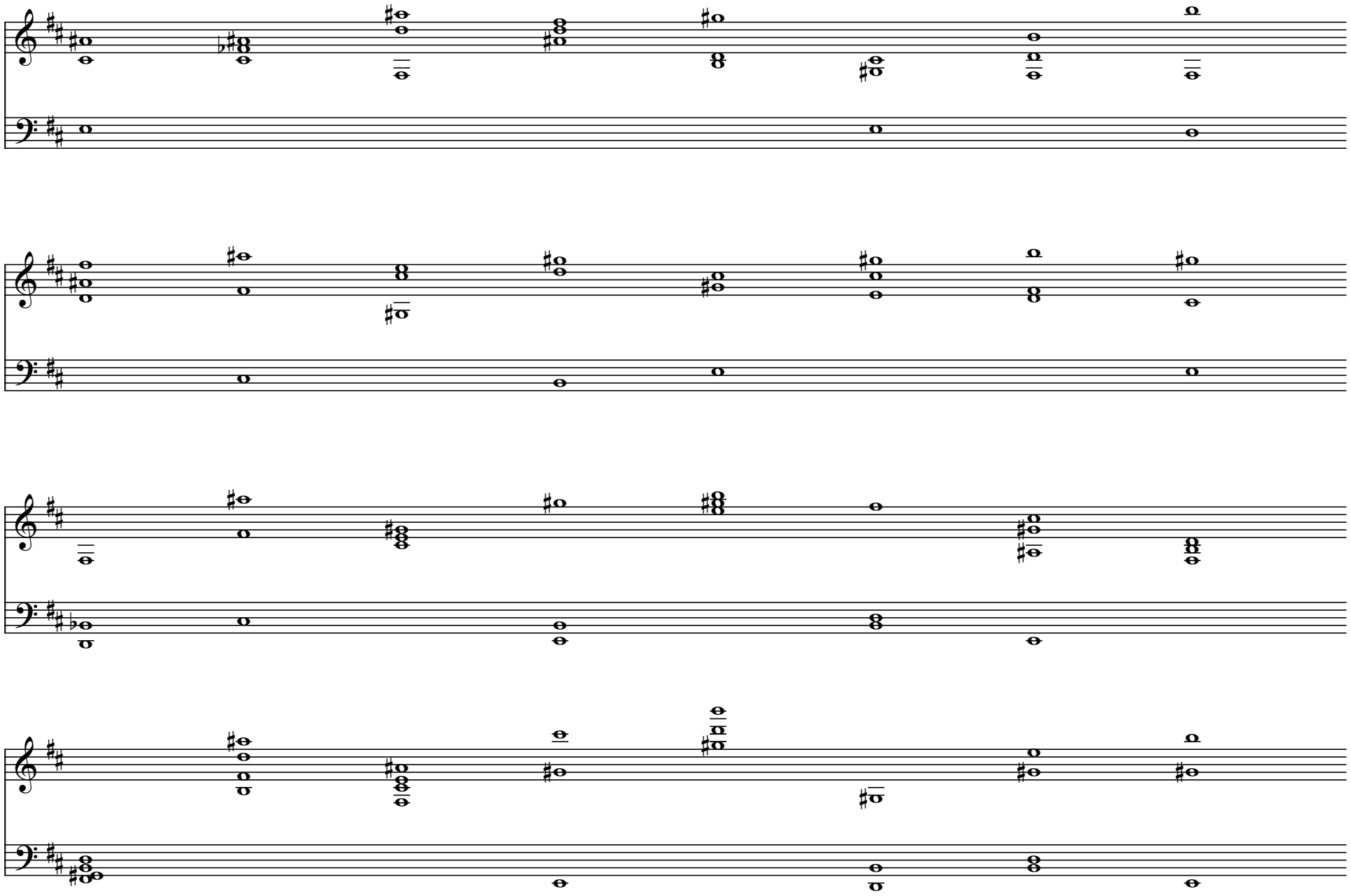
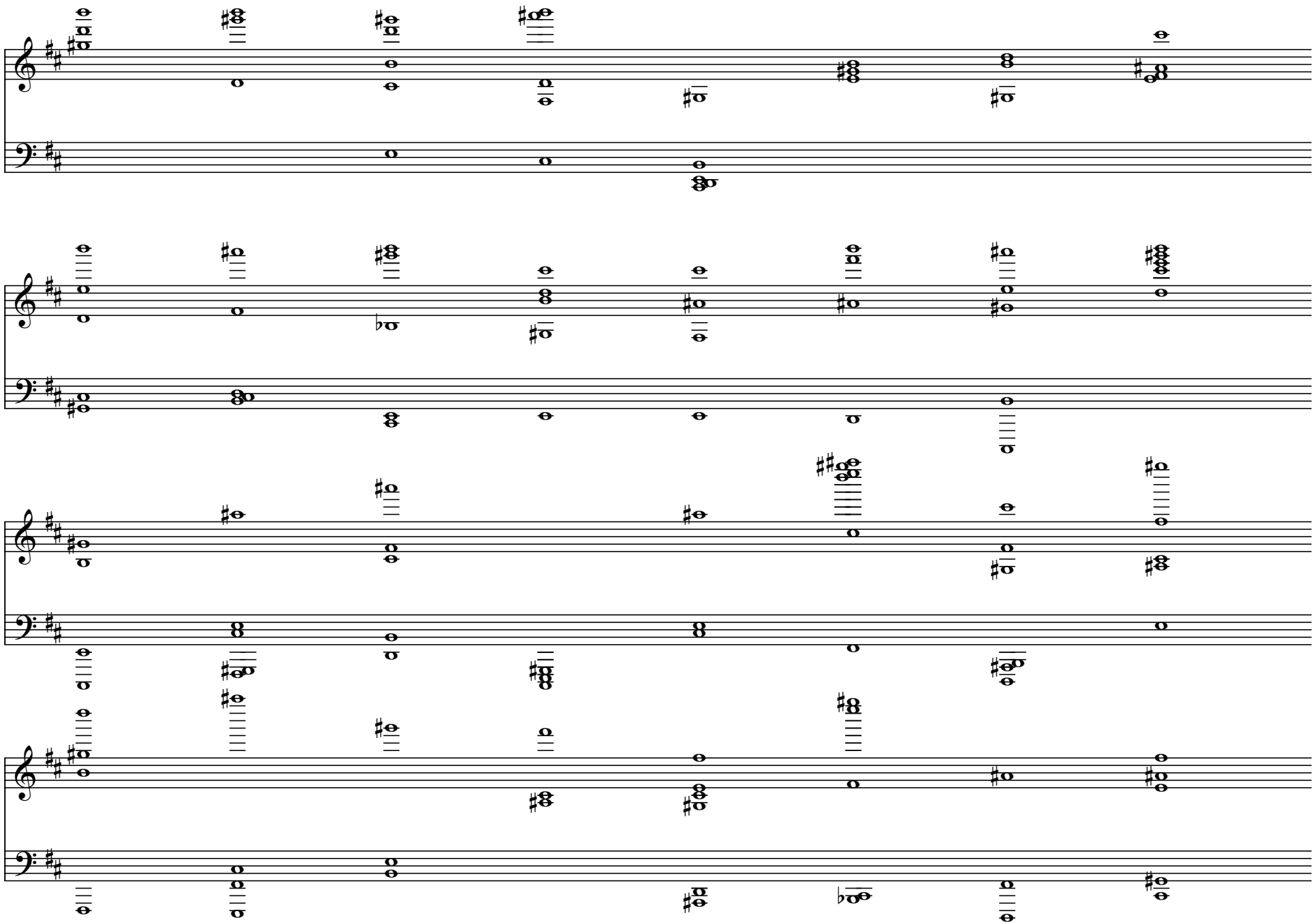
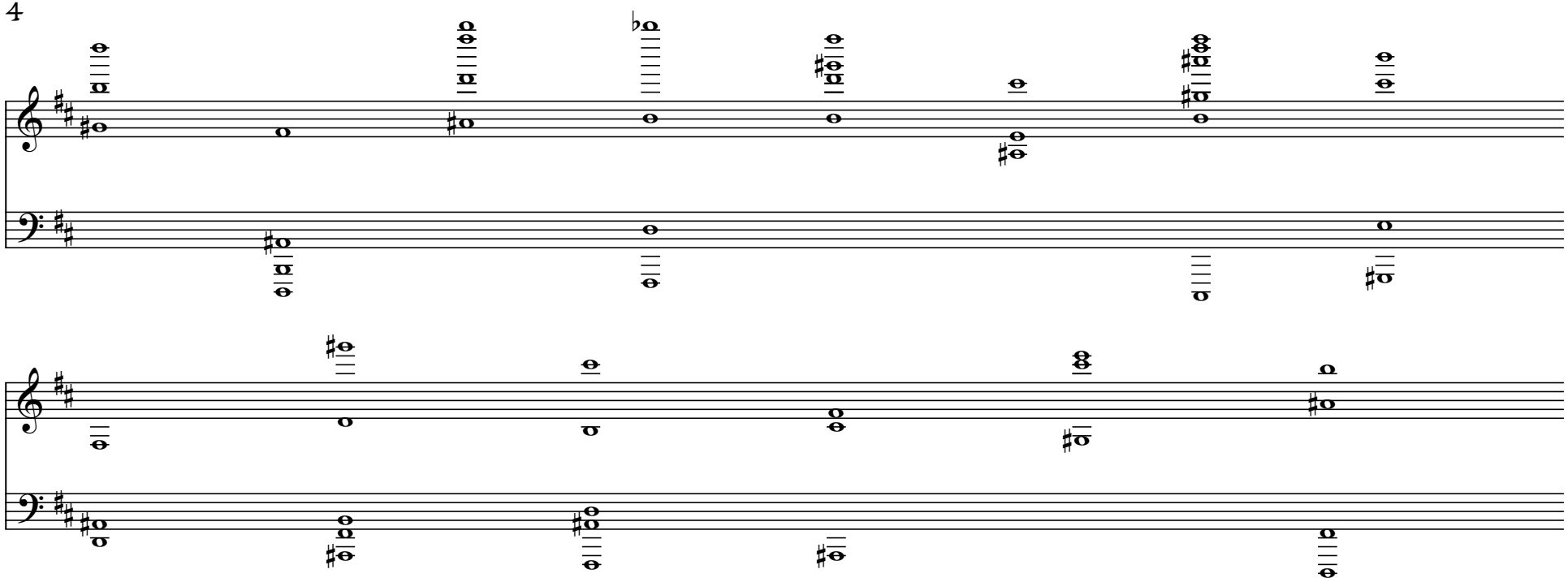
Begin at any point in the piece, and wrap around, ending on the chord preceding the one you started with.



Any tempi, dynamics, pedalling, articulations, all of which may change freely. Individual notes may be attacked and sustained in different ways.
Other instruments follow the piano loosely or precisely, or changing. Instruments may play any notes in their range, at any point, dropping out freely.





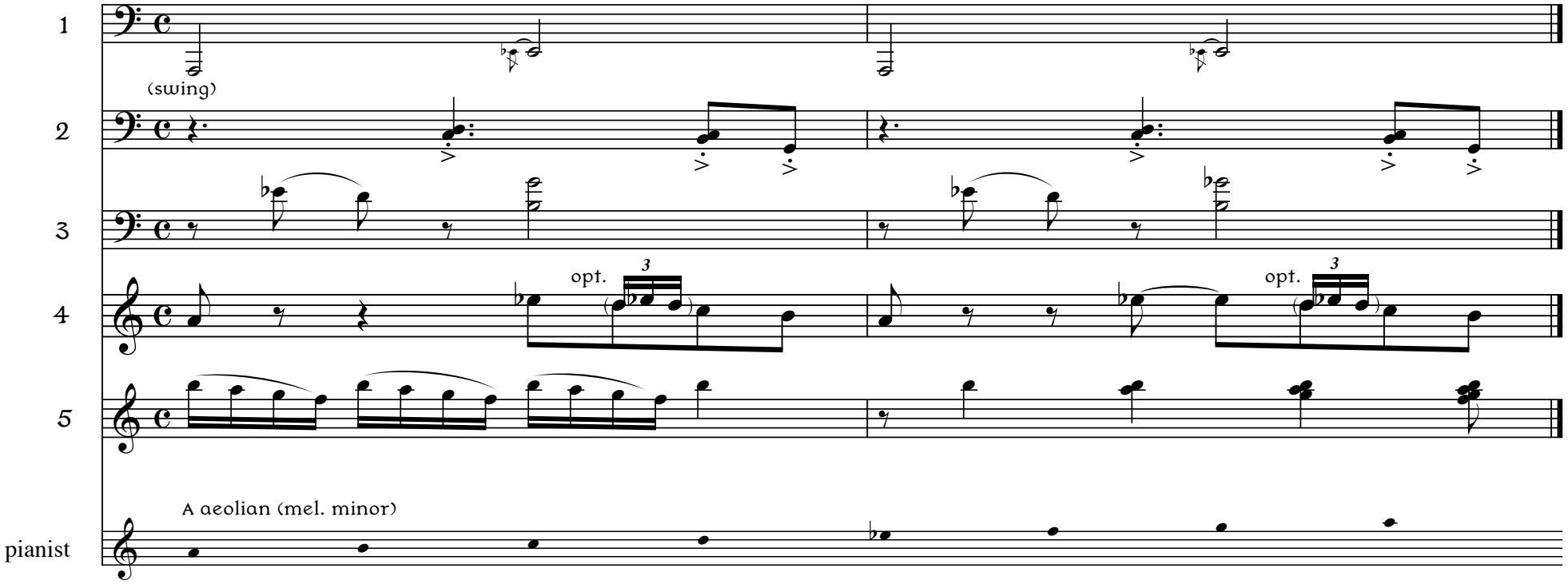


lp, hanover, 6/14/08
rev. 06/15/08; 10:56 PM

16. piano lesson

for five audience piano players and pianist
or any five instruments and pianist

Repeat many times, dynamics ad lib



The pianist teaches five audience members, or invited audience members, one part each, one part at a time, during the performance. Start with part 1 (the lowest) and play the part together until it is secure. Add one part at a time until all five parts are played together. Copies of the score can be used, or the parts may be taught by ear. The pianist is then free to improvise in the given scale, on any part of the piano available. The five other players should *not* have seen the part beforehand: they should learn it in performance.

Everybody should try to have a good time.

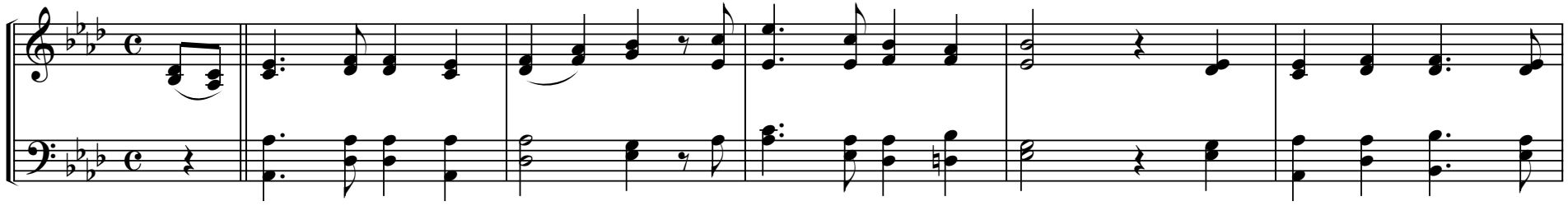
If other instruments are used, the same procedure should be employed, the pianist teaching the other musicians their parts from the piano. Registral adjustments may be made to accomodate other instruments, and the pianist might make some simple transposed parts.

lp, hanover, 11/2/08
rev. 11/6/08, 7:00 PM

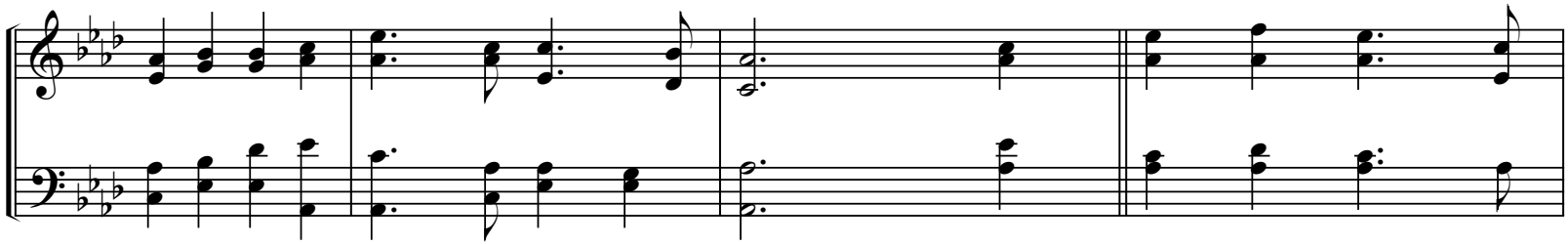
17. Prayer for the Nations

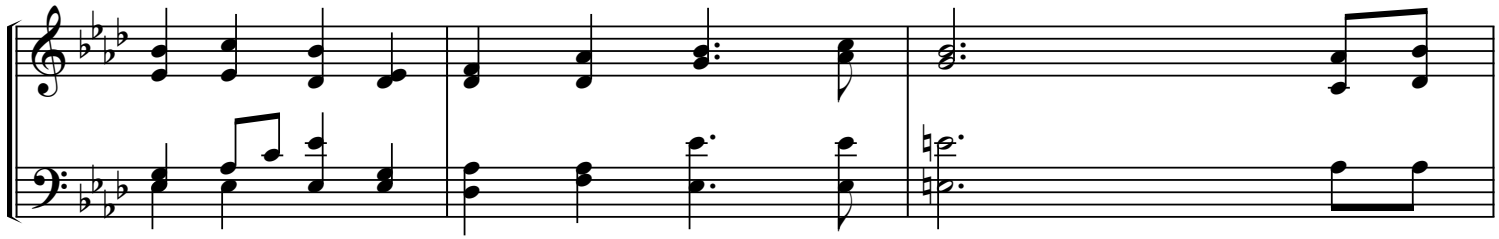
quietly, freely

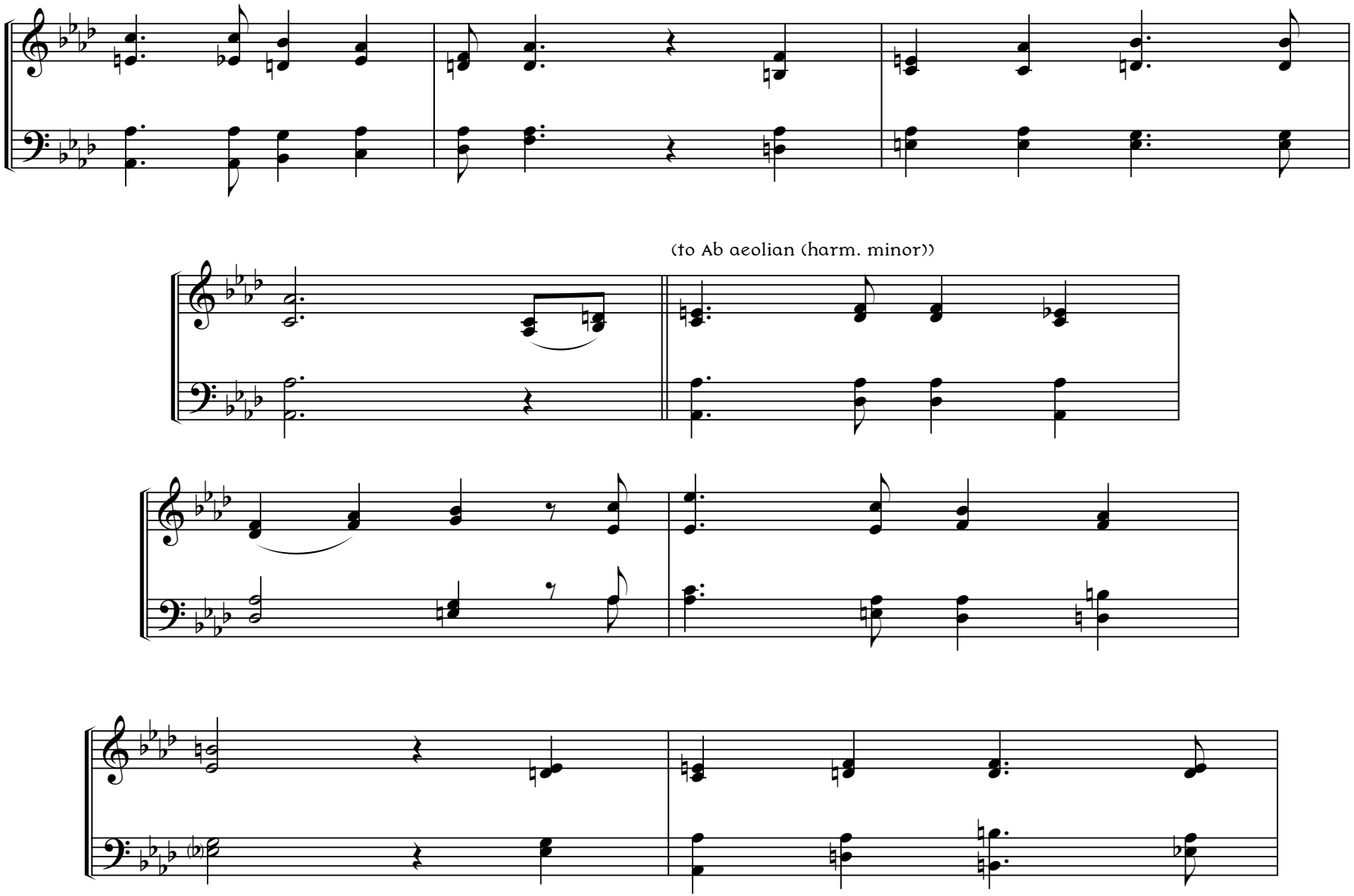
space = time (the physical length of a measure is its tempo)

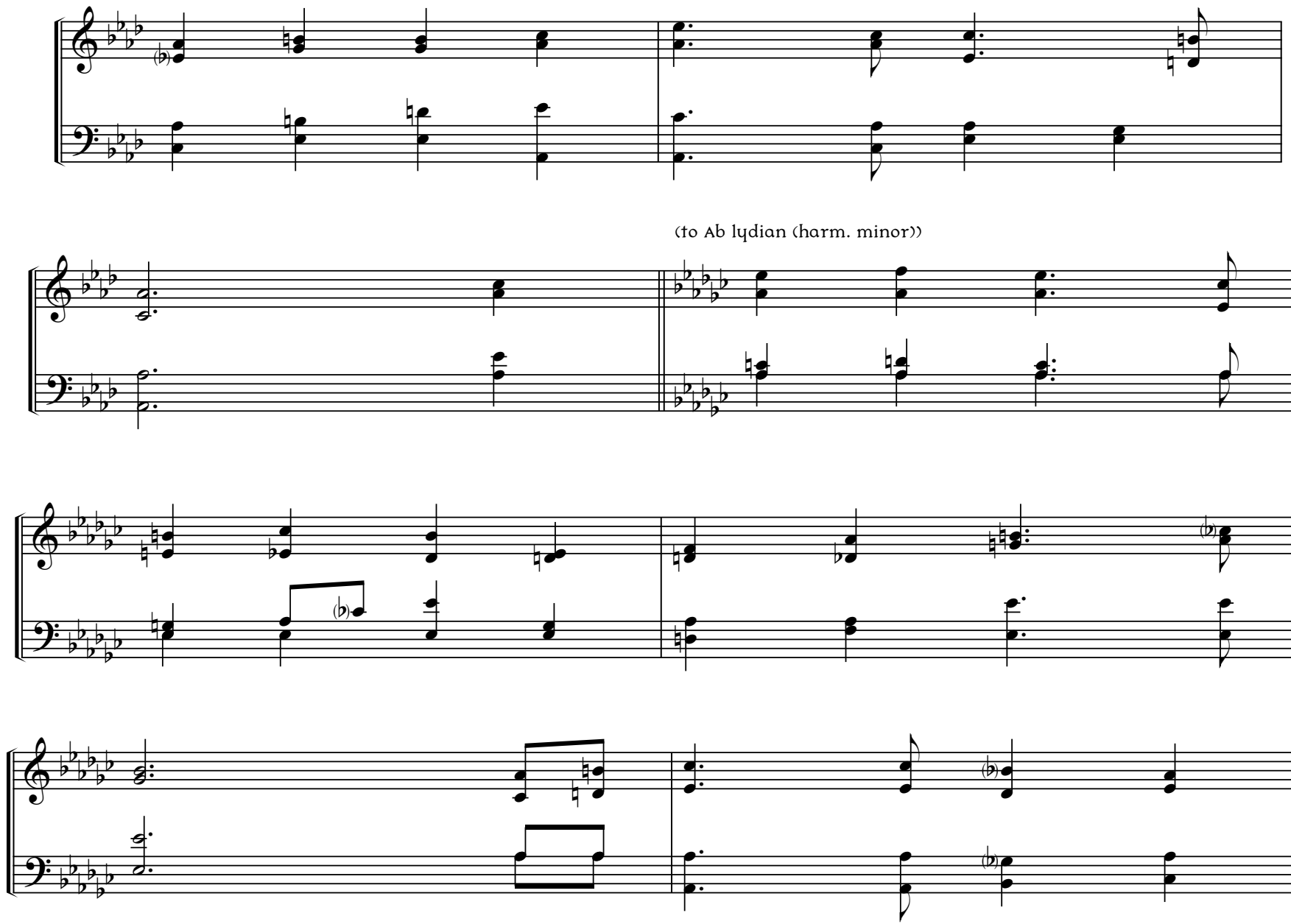


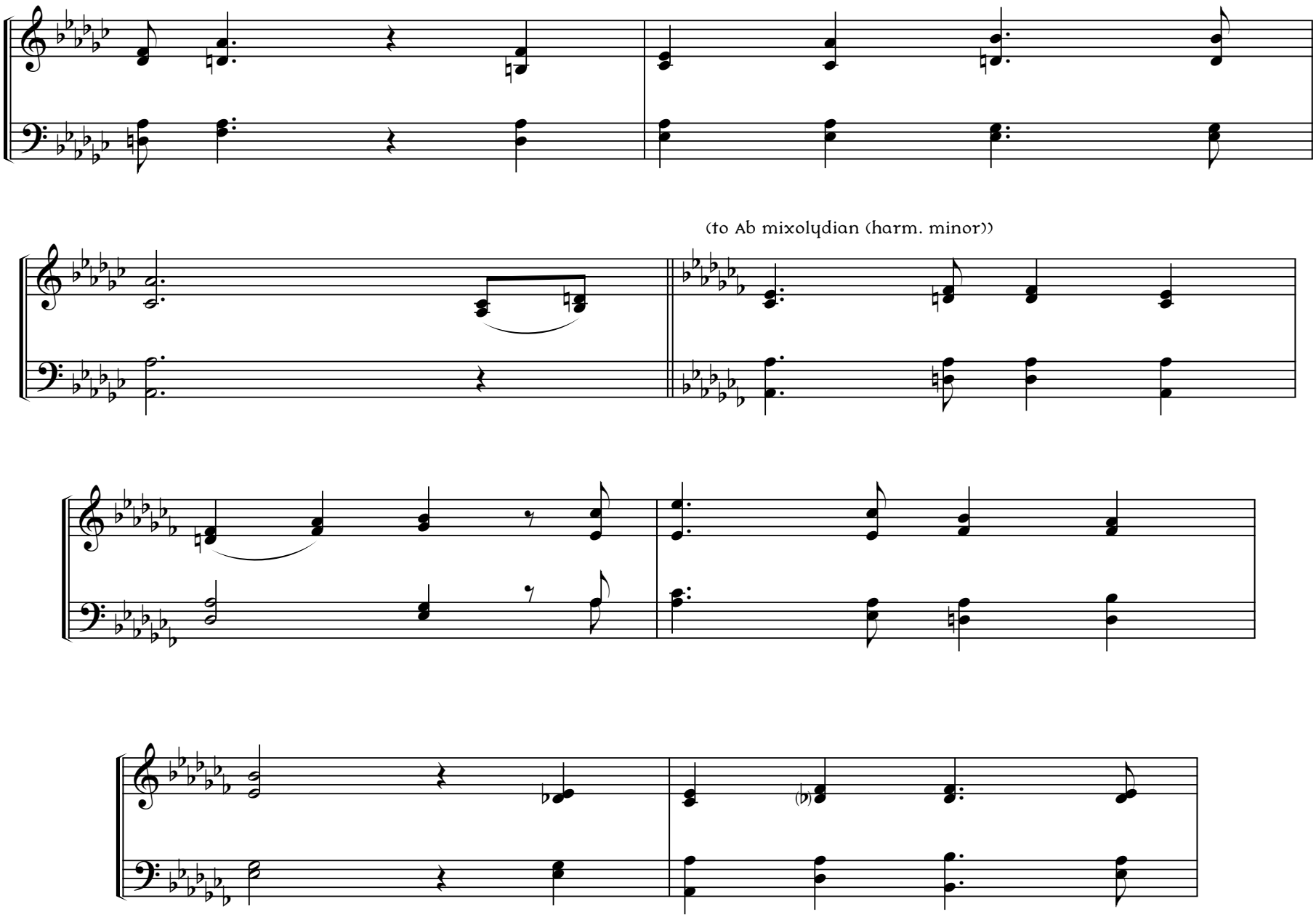
(to Ab phrygian (harm. minor))

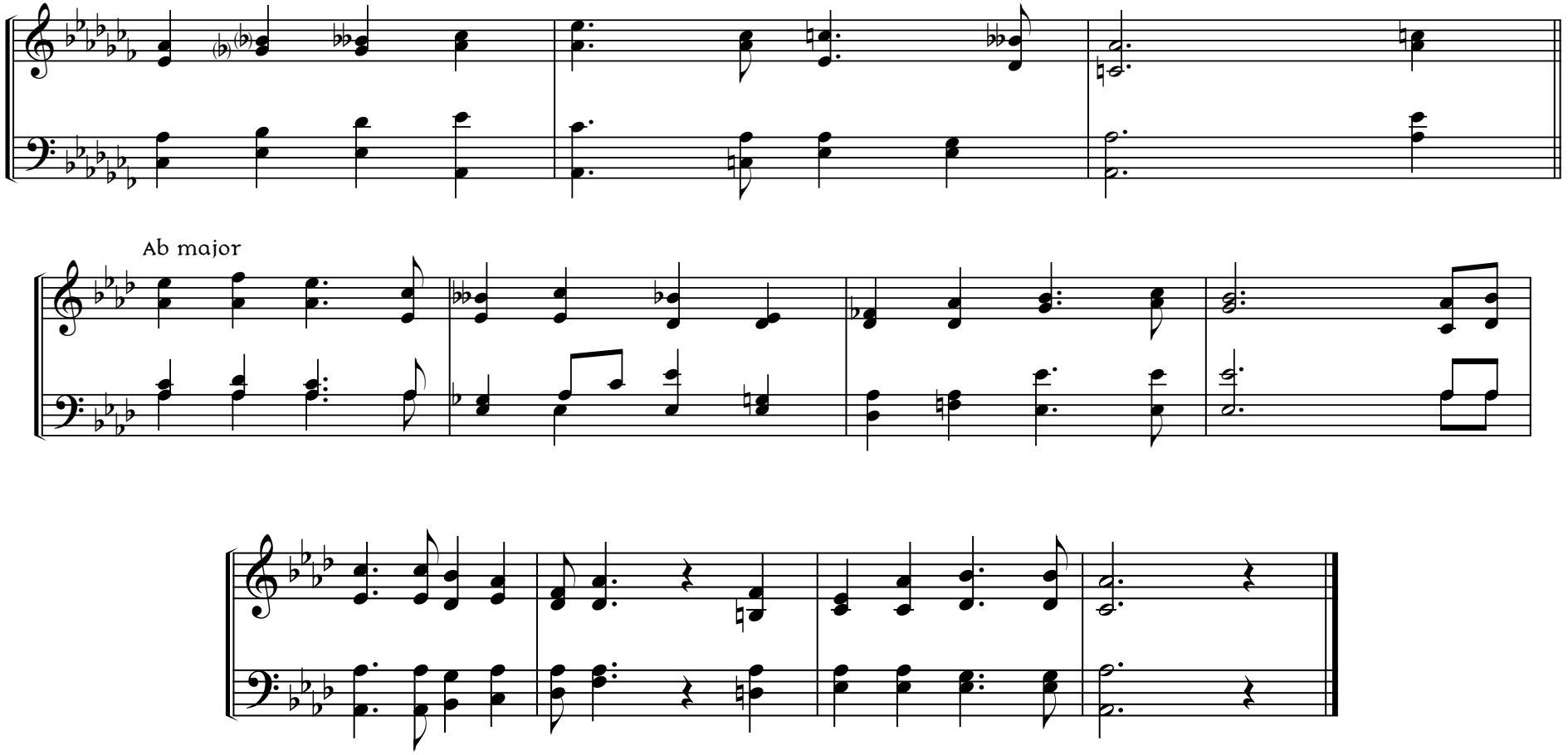





(to Ab aeolian (harm. minor))


(to Ab lydian (harm. minor))


(to Ab mixolydian (harm. minor))



from the Canterbury Shaker Hymnal:

"O God of mercy, truth and love, We humbly ask of thee,
To turn each heart from sin and strife, To set the nations free.
Cause peace to rule and wars to cease, Which do so sore oppress,
For the healing of the nations, O God draw nigh to bless.

For the healing of the nations, Most fervently we pray.
That peace on earth, goodwill to men, O'er all the earth bear sway.
Inspire each heart with living faith, Thy precepts to obey.
For the healing of the nations, Lord, hasten thou the day."

lp, hanover, 6/6/08
rev. 09/18/08

(thanks to Mary Ann Haagen
for teaching me this song)