

Busted Grooves

for three retuned, computer-driven pianos

by Kyle Gann

2017

Technical Specifications

The 33-pitch tuning of the three pianos (the same in every octave) is as follows, given first in the number of cents above E-flat, and then as ratios to the nearest E-flat 1/1 below:

Piano	1		2		3	
D	1088	15/8	977	225/128	1044	117/64
Db	969	7/4	938	55/32	906	27/16
C	857	105/64	773	25/16	840	13/8
B	738	49/32	755	99/64	729	195/128
Bb	702	3/2	590	45/32	609	91/64
A	551	11/8	551	11/8	481	169/128
Ab	471	21/16	440	165/128	408	81/64
G	386	5/4	320	77/64	342	39/32
Gb	204	9/8	275	75/64	275	75/64
F	155	35/32	192	143/128	192	143/128
E	92	135/128	53	33/32	27	65/64
Eb	0	1/1	1103	121/64	1173	63/32

Note that no string needs to be raised higher than its natural tuning except for the B-flat on piano 1, which is 2¢ sharp (or if one prefers, 2¢ could be subtracted from all quantities).

For electronic realization of the piece, it can prove helpful to reconfigure the tuning as a reference pitch in cycles per second for each piano, and ratios derived from that standard:

Tuning pitch:	38.891 cps	36.7641 cps	38.2833 cps
D	15/8	225/121	13/7
Db	7/4	20/11	12/7
C	105/64	200/121	104/63
B	49/32	18/11	65/42
Bb	3/2	180/121	13/9
A	11/8	16/11	169/126
Ab	21/16	15/11	9/7
G	5/4	14/11	26/21
F#	9/8	150/121	25/21
F	35/32	13/11	143/126
E	135/128	12/11	65/63
Eb	1/1	1/1	1/1

In the configuration of certain tuning softwares, the following sequences might facilitate getting the required tuning:

Piano 1:

38.891 = Eb0

1/1, 135/128, 35/32, 9/8, 5/4, 21/16, 11/8, 3/2, 49/32, 105/64, 7/4, 15/8

Piano 2:

36.7641485 = Eb0

1/1, 12/11, 13/11, 150/121, 14/11, 15/11, 16/11, 180/121, 18/11, 200/121, 20/11, 225/121

Piano 3:

38.283333 = Eb0

1/1, 65/63, 143/126, 25/21, 26/21, 9/7, 169/126, 13/9, 65/42, 104/63, 12/7, 13/7

For purposes of analysis, the entire scale (which I refer to as my 8x8 scale) is given below, grouping its pitches into eight harmonic series' on the 1st, 3rd, 5th, 7th, 9th, 11th, 13th, and 15th harmonics of E-flat, and naming each pitch in a typographical equivalent of Ben Johnston's just-intonation notation:

Pitch name	Ratio	Cents	1/1	3/2	5/4	7/4	9/8	11/8	13/8	15/8
Db^^-	121/64	1103						11		
D	15/8	1088	15	5	3					1
Db13	117/64	1044					13		9	
C#+	225/128	977								15
Db7	7/4	969	7			1				
C^	55/32	938			11			5		
C+	27/16	906		9			3			
C7+	105/64	857				15				7
Cb13	13/8	840	13						1	
B	25/16	773			5					
Bb^	99/64	755					11	9		
Cb77+	49/32	738				7				
Bb13	195/128	729							15	13
Bb	3/2	702	3	1						
Bbb713	91/64	609				13			7	
A+	45/32	590		15	9		5			3
Ab^	11/8	551	11					1		
Abb1313	169/128	481							13	
Ab7+	21/16	471		7		3				
G^	165/128	440						15		11
G+	81/64	408					9			
G	5/4	386	5		1					
Gb13	39/32	342		13					3	
Gb7^	77/64	320				11		7		
F#+	75/64	275			15					5
F+	9/8	204	9	3			1			
Fb13^	143/128	192						13	11	
F7+	35/32	155			7	5				
E+	135/128	92					15			9
Eb^	33/32	53		11				3		
Eb13	65/64	27			13				5	
Eb	1/1	0	1							
Eb7+	63/32	1173				9	7			

In Johnston's notation, + raises a pitch by 81/80, # raises it by 25/24, b lowers it by 24/25, 7 lowers it by 35/36, ^ raises it by 33/32, 13 raises it by 65/64, and F-A-C, C-E-G, and G-B-D are all perfectly tuned 4:5:6 major triads.

Busted Grooves

Kyle Gann
2017

♩ = 54

Piano 1

mp

Piano 2

mp

p

3

♩ = 54

Piano 3

mp

p

3

3

Pno1

p

Pno2

Pno3

Pno1

Musical score for Pno1, measures 5-7. The score consists of four staves. The top staff is a treble clef with a piano (p) dynamic and a triplet of eighth notes. The second staff is a treble clef with a mezzo-piano (mp) dynamic, featuring a melodic line with slurs and ties. The third staff is a bass clef with a mezzo-forte (mf) dynamic, featuring a rhythmic accompaniment. The bottom staff is a bass clef with a mezzo-forte (mf) dynamic, featuring a melodic line with slurs and ties.

Pno2

Musical score for Pno2, measures 5-7. The score consists of three staves. The top staff is a treble clef with a piano (p) dynamic, featuring a melodic line with slurs and ties. The middle staff is a treble clef with a mezzo-piano (mp) dynamic, featuring a rhythmic accompaniment. The bottom staff is a bass clef with a mezzo-forte (mf) dynamic, featuring a rhythmic accompaniment.

Pno3

Musical score for Pno3, measures 5-7. The score consists of three staves. The top staff is a treble clef with a piano (p) dynamic, featuring a melodic line with slurs and ties. The middle staff is a treble clef with a mezzo-piano (mp) dynamic, featuring a rhythmic accompaniment. The bottom staff is a bass clef with a mezzo-forte (mf) dynamic, featuring a rhythmic accompaniment.

7

Pno1

Pno2

Pno3

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9

The musical score consists of three systems, each for a different piano part.
 - **Pno1:** The first system has five staves. The top two staves are treble clef, and the bottom three are bass clef. It features a complex melodic line with triplets and slurs, and a rhythmic accompaniment in the lower staves. Dynamics include *p* and *v*.
 - **Pno2:** The second system has four staves, with two treble and two bass clefs. It features a melodic line with slurs and a rhythmic accompaniment. Dynamics include *p*.
 - **Pno3:** The third system has three staves, with two treble and one bass clef. It features a melodic line with triplets and slurs, and a rhythmic accompaniment. Dynamics include *p*.

Pno1

Pno2

Pno3

The image shows a musical score for three piano parts, labeled Pno1, Pno2, and Pno3. The score is divided into two systems. The first system covers measures 12 to 13, and the second system covers measures 14 to 15. The tempo is marked as ♩ = 132. The key signature has two flats (B-flat and E-flat). Pno1 consists of five staves, Pno2 of four staves, and Pno3 of three staves. Dynamic markings include *mf* and *mf* with a hairpin. A double bar line with a repeat sign is present in the first system. The score includes various musical notations such as notes, rests, and articulation marks.

14 $\text{♩} = 108$

Pno1

mf *p*

mf *mp*

p

mp

The musical score is for two pianos, Pno1 and Pno2, starting at measure 14. The tempo is marked as 108 bpm. Pno1's part consists of four staves. The top staff is in treble clef and contains a series of sixteenth-note chords, starting with a *mf* dynamic and becoming *p* in the second measure. The second staff is in bass clef and contains a series of chords, starting with *mf* and becoming *mp*. The third staff is in bass clef and features a melodic line with a triplet of eighth notes. The fourth staff is in bass clef and contains a bass line with a triplet of eighth notes. Pno2's part consists of three staves. The top staff is in treble clef and contains a series of chords, starting with a *p* dynamic. The middle staff is in bass clef and contains a series of chords, starting with a *mp* dynamic. The bottom staff is in bass clef and contains a melodic line with a triplet of eighth notes.

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16

Pno1

Pno2

Pno3

The musical score consists of three piano parts, Pno1, Pno2, and Pno3, starting at measure 16. Pno1 is written in treble and bass clefs. The treble staff features a complex rhythmic pattern with many sixteenth notes. The bass staff has a dynamic marking 'f' and a triplet of eighth notes. Pno2 is also in treble and bass clefs. The treble staff has a few notes with a dynamic marking 'f'. The bass staff has a triplet of eighth notes with a dynamic marking 'f'. Pno3 is in bass clef and has a triplet of eighth notes with a dynamic marking 'f'. There are some additional markings at the bottom of the Pno1 section, including a double bar line and a curved line.

17

Pno1

Pno2

Pno3

f

18

Pno1

Pno2

Pno3

The musical score is divided into three parts: Pno1, Pno2, and Pno3. Pno1 consists of three staves: a treble clef staff and two bass clef staves. Pno2 consists of three staves: a treble clef staff and two bass clef staves. Pno3 consists of two bass clef staves. The score begins at measure 18. Pno1's treble staff features a series of eighth-note chords, with a flat (b) appearing above the first measure. Pno1's first bass staff contains a long slur over several measures, ending with a triplet of eighth notes. Pno1's second bass staff contains a long slur over several measures, ending with a triplet of eighth notes. Pno2's treble staff has a few notes with sharps (#) and rests. Pno2's first bass staff is mostly empty with a few notes and rests. Pno2's second bass staff has a few notes with sharps (#) and rests, including a triplet of eighth notes. Pno3's first bass staff is mostly empty with a few notes and rests. Pno3's second bass staff has a few notes and rests, including a triplet of eighth notes.

19

Pno1

Pno2

Detailed description of the musical score: The score is for two pianos, Pno1 and Pno2, starting at measure 19. Pno1 is written on four staves. The top staff is in treble clef and contains a melodic line with eighth notes and a flat (b) on the fifth measure. The second staff is in bass clef and contains a bass line with eighth notes and a flat (b) on the fifth measure. The third staff is in bass clef and features a triplet of eighth notes in the first measure, followed by a long note with a slur. The fourth staff is in bass clef and contains a long note with a slur. Pno2 is written on three staves. The top staff is in treble clef and contains a melodic line with eighth notes and a sharp (#) on the first measure. The middle staff is in bass clef and contains a bass line with eighth notes and a sharp (#) on the first measure. The bottom staff is in bass clef and contains a long note with a sharp (#) on the first measure.

21

Pno1

Pno2

Pno3

Detailed description of the musical score: The score is for three pianos. Pno1 (Piano 1) consists of a treble clef staff and two bass clef staves. The treble staff begins at measure 21 with a series of eighth notes, some with a flat (b) and some with a sharp (#). The first bass staff contains a triplet of eighth notes, followed by a long slur over several notes. The second bass staff contains a single note with a slur. Pno2 (Piano 2) consists of a treble clef staff and two bass clef staves. The treble staff has several rests and notes with sharps. The first bass staff has a triplet of eighth notes. The second bass staff has a single note with a sharp. Pno3 (Piano 3) has a single bass clef staff with a rest.

22 $\text{♩} = 126$

Pno1

Pno2

Pno3

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24 ♩ = 108

Pno1

Pno2

Pno3

f *mp* *p* *f* *mp* *f* *p*

f *mp* *f* *p*

♩ = 108

f *mp* *f* *p*

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26

mp

Pno1

Pno2

mp

Pno3

f

28

Pno1

Pno2

Pno3

p

f

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32

Pno1

Pno2

Pno3

f

The musical score consists of three systems, each for a different piano part. The first system (Pno1) starts at measure 32 with a complex chordal texture in the right hand, marked with a 5:4 ratio. The middle system (Pno2) features a similar chordal texture in the right hand, also marked with a 5:4 ratio. The third system (Pno3) begins with a dynamic marking of *f* and includes a 7:4 ratio marking. The score is written for three piano parts, with each part having its own set of staves. The notation includes various musical symbols such as notes, rests, and dynamic markings.

33

The musical score is divided into three systems, each labeled on the left as Pno1, Pno2, and Pno3. The first system (Pno1) consists of five staves. The top staff features a complex texture of chords and arpeggios with fingerings 5, 9, and 9. The second staff has a melodic line with a 7-fingered arpeggio. The third staff is a bass line with chords and a melodic phrase. The fourth and fifth staves are empty. The second system (Pno2) also has five staves. The top staff continues the complex texture with fingerings 9, 9, 9, and 9. The second staff has a melodic line with a 7-fingered arpeggio. The third and fourth staves are empty. The fifth staff is a bass line with chords. The third system (Pno3) has three staves. The top staff continues the complex texture with fingerings 5 and 9. The middle staff has a melodic line with a 7-fingered arpeggio. The bottom staff is a bass line with chords.

The image shows a musical score for three piano parts, labeled Pno1, Pno2, and Pno3. The score is divided into two systems. The first system covers measures 35 to 46, and the second system covers measures 47 to 58. The tempo is marked as $\text{♩} = 132$ for measures 35-46 and $\text{♩} = 126$ for measures 47-58. The key signature has one sharp (F#) and the time signature is 8/8. Pno1 starts in measure 35 with a *mf* dynamic. Pno2 and Pno3 enter in measure 47. Pno2 has a *mf* dynamic, while Pno3 has a *f* dynamic. The score includes various musical notations such as slurs, ties, and dynamic markings.

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37 $\text{♩} = 108$

Pno1 *mf*
f
p
mp

Pno2 *mp*
p

Pno3 $\text{♩} = 108$
mp

38

Pno1

Pno2

Pno3

24

39

Musical score for measures 39-40. The score is divided into three parts: Pno1, Pno2, and Pno3. Pno1 consists of a grand staff with a treble and bass clef. Pno2 consists of two treble clef staves. Pno3 consists of a single treble clef staff. The music features complex rhythmic patterns, including triplets and sixteenth notes, and various chordal textures. A double bar line is present at the end of measure 40.



41

Musical score for measures 41-42. The score is divided into three parts: Pno1, Pno2, and Pno3. Pno1 consists of a grand staff with a treble and bass clef. Pno2 consists of two treble clef staves. Pno3 consists of a single treble clef staff. The music continues with complex rhythmic patterns and chordal textures. A double bar line is present at the end of measure 42.

Piano score for measures 43-44. The score is divided into two systems. The first system includes Pno1 (Grand Staff) and Pno2 (Grand Staff). Pno1 features a complex rhythmic pattern with triplets and sixteenth notes. Pno2 has a more sparse accompaniment. A double bar line is present at the end of measure 44.



♩ = 126

Piano score for measures 44-46. This system includes Pno1, Pno2, and Pno3. Pno1 continues with its rhythmic pattern, including a triplet in measure 45. Pno2 and Pno3 provide accompaniment. Measure 45 is marked with a repeat sign and a first ending bracket. Measure 46 features a dynamic marking of *f* (forte) and a first ending bracket. The score concludes with a double bar line.

46 $\text{♩} = 132$ $\text{♩} = 108$

Pno1

mf *mf* *f* *p* *f* *mp*

Pno2

mf *mf* *p*

Pno3

$\text{♩} = 132$ $\text{♩} = 108$

mf *mf*

3

3

3

Detailed description: This is a musical score for three pianos, labeled Pno1, Pno2, and Pno3. The score is divided into two systems. The first system starts at measure 46. Pno1 has a tempo of 132 bpm and a dynamic of *mf*. Pno2 has a tempo of 108 bpm and a dynamic of *p*. Pno3 has a tempo of 132 bpm and a dynamic of *mf*. The second system continues with Pno1 at 108 bpm and *f*, Pno2 at 108 bpm and *p*, and Pno3 at 108 bpm and *mf*. The score includes various musical notations such as treble and bass clefs, time signatures, notes, rests, and dynamic markings. There are also some performance instructions like *mf*, *f*, *p*, and *mp*. The score is for three pianos, with Pno1, Pno2, and Pno3. The tempo markings are $\text{♩} = 132$ and $\text{♩} = 108$. The dynamic markings are *mf*, *f*, *p*, and *mp*. There are also some performance instructions like *mf*, *f*, *p*, and *mp*. The score is for three pianos, with Pno1, Pno2, and Pno3. The tempo markings are $\text{♩} = 132$ and $\text{♩} = 108$. The dynamic markings are *mf*, *f*, *p*, and *mp*. There are also some performance instructions like *mf*, *f*, *p*, and *mp*.

48

Pno1

Pno2

Pno3

f

3

3:2

3

3:2

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49

Pno1

f

Pno2

f

Pno3

3:2

3

3

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50

Pno1

Pno2

Pno3

The musical score is divided into three systems, each for a different piano (Pno1, Pno2, Pno3).
- **Pno1:** Starts at measure 50. The top staff has a treble clef and contains a complex rhythmic pattern with eighth and sixteenth notes. The middle staff has a treble clef and contains a melodic line with slurs and accents. The bottom staff has a bass clef and contains a bass line with a triplet of eighth notes and a slur over a longer note.
- **Pno2:** The top staff has a treble clef and contains a melodic line with slurs and accents. The middle staff has a treble clef and contains a melodic line with slurs and accents. The bottom staff has a bass clef and contains a bass line with a triplet of eighth notes and a slur over a longer note.
- **Pno3:** The top staff has a treble clef and contains a melodic line with slurs and accents. The bottom staff has a bass clef and contains a bass line with a triplet of eighth notes and a slur over a longer note.
- **Measure 50:** The first measure of the score, marked with the number 50. It features a treble clef and a key signature of one flat (B-flat). The music begins with a series of eighth and sixteenth notes in the treble clef, followed by a melodic line in the middle staff and a bass line in the bass clef. A triplet of eighth notes is marked in the bass line of Pno1 and Pno2.

51

Pno1

Pno2

Pno3

51

Pno1

Pno2

Pno3

3:2

3

3

3:2

3:2

f

v

52

Pno1

Pno2

Pno3

3

3

3:2

3

3

3:2

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53 ♩ = 91

Pno1

f

f

Pno2

f

f

♩ = 91

Pno3

f

mp

mp

f

54 $\text{♩} = 54$

Pno1

17:12

Pno2

17:12

17:12

Pno3

$\text{♩} = 54$

f

f

Busted Grooves

56

Pno1

Pno2

Pno3

17:12

17:12

17:12

17:12

17:12

17:12

58

Pno1

17:12

Pno2

17:12

Pno3

17:12

The image shows a musical score for three pianos, labeled Pno1, Pno2, and Pno3. The score begins at measure 58. Pno1 is the most active part, featuring a complex melodic line in the right hand and a rhythmic accompaniment of chords in the left hand. A long slur covers a significant portion of the Pno1 part. Pno2 and Pno3 have simpler parts, primarily consisting of chords and rests, with a 17:12 time signature indicated. The key signature has one flat (B-flat).

59 $\text{♩} = 132$

The score is divided into three systems, each for a different piano part:

- Pno1:** Features a melodic line in the right hand and accompaniment in the left hand. It includes rehearsal marks at 17:12 and 23:17. Dynamics are marked *mf*.
- Pno2:** Features a melodic line in the right hand and accompaniment in the left hand. It includes rehearsal marks at 17:12 and 23:17. Dynamics are marked *mf*.
- Pno3:** Features a melodic line in the right hand and accompaniment in the left hand. It includes rehearsal marks at 17:12 and 23:17. Dynamics are marked *mf*.

Time signatures include 8/8 and 11/8. The tempo is marked $\text{♩} = 132$.

63

The musical score consists of three systems, each for a different piano part (Pno1, Pno2, Pno3). Each system contains three staves: a treble clef staff, a bass clef staff, and a grand staff (treble and bass clefs). The music is in 4/4 time and begins at measure 63. Pno1 features a complex rhythmic pattern in the bass clef with dynamic markings of *f* and *mp*. Pno2 has a similar pattern in the treble clef with *f* and *mp* markings. Pno3 has a pattern in the treble clef with *f* and *mp* markings. The score includes various musical notations such as slurs, ties, and dynamic markings.

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65

The musical score is divided into three systems, each for a different piano part:

- Pno1:** Features a treble clef staff with a whole rest and a fermata. The middle staff has a treble clef with eighth notes, a five-finger slur, and a fermata. The bottom staff has a bass clef with eighth notes and a fermata. A dynamic marking of *mp* is present.
- Pno2:** Features a treble clef staff with a whole rest and a fermata. The middle staff has a treble clef with eighth notes and a five-finger slur. The bottom staff has a bass clef with eighth notes and a seven-finger slur.
- Pno3:** Features a treble clef staff with a whole rest and a fermata. The middle staff has a treble clef with eighth notes and a five-finger slur. The bottom staff has a bass clef with eighth notes and a seven-finger slur. A dynamic marking of *mp* is present.

Additional markings include a fermata on a high note in the top right, and various slurs and fingerings throughout the piece.

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The image shows a musical score for three pianos, labeled Pno1, Pno2, and Pno3. The score is written in treble and bass clefs. Pno1 has a treble clef staff with a key signature of one flat and a bass clef staff. Pno2 has a treble clef staff with a key signature of two sharps and a bass clef staff. Pno3 has a treble clef staff with a key signature of one flat and a bass clef staff. The score includes various musical notations such as triplets (marked '3'), slurs, and dynamics like *mp*. There are also some unusual markings like 'v d' and '11'.

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67

Pno1

Pno2

Pno3

mp

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68

Pno1

Pno2

Pno3

mp

mp

mp

The musical score consists of three systems, each for a piano (Pno1, Pno2, Pno3).
- **Pno1:** Measures 68-70. Treble clef has a whole note chord with a fermata. Bass clef has a complex rhythmic pattern with slurs and triplets. Dynamics include *mp*.
- **Pno2:** Measures 68-70. Treble clef has a whole note chord with a fermata. Bass clef has sparse notes with a triplet. Dynamics include *mp*.
- **Pno3:** Measures 68-70. Treble clef has a whole note chord with a fermata. Bass clef has a triplet. Dynamics include *mp*.

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69

Pno1

Pno2

Pno3

mp

mp

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70 (F#)

Pno1

Pno2

Pno3

mp

mp

The musical score is for three pianos (Pno1, Pno2, Pno3) starting at measure 70. The key signature is F# major. Pno1 has a complex bass line with chords and a melodic line. Pno2 has a similar bass line with a melodic line. Pno3 has a simpler bass line. Dynamics include mp and accents.

71

The musical score is divided into three systems, each for a different piano part:

- Pno1:** Features a complex texture with multiple staves. A large oval spans across the top two staves, indicating a sustained chord or melodic line. The bottom two staves contain rhythmic patterns and a dynamic marking of *mp*.
- Pno2:** Shows a more melodic line in the upper staves, with some chords and rests. The lower staves provide harmonic support with specific rhythmic figures.
- Pno3:** Similar to Pno1, it has a melodic line in the upper staves and rhythmic accompaniment in the lower staves, also marked with *mp*.

The score includes various musical notations such as treble and bass clefs, notes, rests, and dynamic markings like *mp* (mezzo-piano). There are also some specific markings like *v* (accents) and *7* (sevens) under some notes.

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46 72 ♩ = 175

Pno1

Pno2

Pno3

28:15

26:15

5

7

73 ♩ = 108

Pno1

Pno2

Pno3

f *mp*

f *mp*

f *mp*

mp

74 47

Pno1

Pno2

Pno3

74

47

75

Pno1

Pno2

Pno3

75

f *mp*

mp

48

76

Pno1

Pno2



77

Pno1

Pno2

Pno3

f *mp* *mp* *mf* *7:6* *mf*

79

Pno1

mp

7:6

7:6

mp

Pno2

mp

Pno3

7:6

mf

7:6

mf

Busted Grooves

80

Pno1

Pno2

Pno3

7:6

mf

7:6

mf

7:6

7:6

Busted Grooves

81

Pno1

mp

7:6

mp

7:6

mp

Pno2

7:6

mp

7:6

Detailed description of the musical score: The score is for two pianos, Pno1 and Pno2. Pno1's part consists of five staves. The top staff is Treble clef, starting with a treble clef change and a common time signature. It contains eighth-note patterns with accents. The second staff is Treble clef with a 7:6 time signature, featuring a long rest followed by a half note. The third staff is Bass clef with a key signature change to one flat and a 7:6 time signature, containing eighth-note chords. The fourth staff is Bass clef with a 7:6 time signature, similar to the third staff. The fifth staff is Bass clef with a long rest and a half note marked *mp*. Pno2's part consists of four staves. The top staff is Treble clef with a key signature change to one sharp and a 7:6 time signature, containing eighth-note patterns. The second staff is Treble clef with a 7:6 time signature, featuring a long rest followed by a half note. The third staff is Bass clef with a 7:6 time signature, containing eighth-note chords. The fourth staff is Bass clef with a 7:6 time signature, containing eighth-note patterns. Dynamic markings include *mp* in several places.

83

The musical score is divided into three systems, each for a different piano part:

- Pno1:** Features a complex rhythmic pattern in the right hand with a 3:2 time signature. The left hand has a 7:6 time signature and includes a dynamic marking of *mp*. A *vd* (vibrato) marking is present in the lower register.
- Pno2:** Features a rhythmic pattern in the right hand with a 7:6 time signature. The left hand has a 7:6 time signature and includes a dynamic marking of *mp*.
- Pno3:** Features a simple rhythmic pattern in both hands with a 7:6 time signature.

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84

Pno1

Pno2

Pno3

3:2

7:6

7:6

7:6

7:6

7:6

7:6

7:6

85

Pno1

mp

7:6

19

13:11

m̄p

Pno2

7:6

mp

7:6

19

13:11

Pno3

7:6

7:6

19

13:11

Busted Grooves

56 86 ♩ = 126

Pno2

Pno3



87 ♩ = 91

Pno1

Pno2

Pno3

88 $\text{♩} = 54$

Pno1

Pno2

$\text{♩} = 54$

Pno3

90

Pno1

Pno2

Pno3

The musical score is divided into three systems, each for a different piano part.
 - **Pno1:** The first system starts at measure 90. The treble clef staff contains a melodic line with eighth and sixteenth notes, including a sharp sign (#) and a flat sign (b). The bass clef staff contains a rhythmic accompaniment with chords and rests.
 - **Pno2:** The second system continues the accompaniment with chords and rests in both treble and bass clefs.
 - **Pno3:** The third system continues the accompaniment with chords and rests in both treble and bass clefs.
 - **Measure 90:** The first measure of the first system shows a treble clef staff with a series of notes, a sharp sign (#), and a flat sign (b). The bass clef staff has a whole note chord and a rest.

The image displays a musical score for three piano parts, labeled Pno1, Pno2, and Pno3. The score is organized into two systems, with the first system starting at measure 92. Each piano part is represented by a grand staff consisting of a treble and a bass clef. Pno1 features a complex rhythmic pattern with many sixteenth notes and rests, and includes dynamic markings such as *b*, *f*, and *17:12*. Pno2 and Pno3 have more sparse, block-like textures with fewer notes and rests, also featuring dynamic markings like *#* and *17:12*. The notation includes various note values, rests, and articulation marks. The overall style is contemporary and rhythmic.

94

Pno1

Pno2

Pno3

17:12

17:12

17:12

17:12

17:12

17:12

96

Pno1

Pno2

Pno3

17:12

17:12

17:12

17:12

17:12

17:12

98

Pno1

17:12

17:12

Pno2

17:12

17:12

p

p

p

Pno3

17:12

17:12

p

p

mp

p

Busted Grooves

100

Pno1

pp

p

53:48

Pno2

p



101

Pno1

p

53:48

Pno2

p

102 $\text{♩} = 132$

Pno1

mf *mf* *mf*

Pno2

mf *mf* *mf*

$\text{♩} = 132$

Pno3

mf *mf* *mf*

Piano score for measures 103-105. The score is divided into three systems: Pno1, Pno2, and Pno3. The time signature is 25/16. The tempo is marked as ♩ = 175. Pno1 features a complex melodic line with many slurs and ties. Pno2 and Pno3 provide harmonic support with various rhythmic patterns and slurs. Measure numbers 28:15 and 26:15 are indicated within the Pno2 and Pno3 staves respectively.

Section separator (double bar line with repeat sign). Piano score for measures 104-106. The score is divided into three systems: Pno1, Pno2, and Pno3. The time signature changes to 3/2. The tempo is marked as ♩ = 54. Pno1 has a melodic line with slurs and ties. Pno2 and Pno3 provide harmonic support with various rhythmic patterns and slurs.

105

Pno1

Pno2

Pno3

The musical score is divided into three systems, each for a different piano. The first system, labeled 'Pno1', begins at measure 105. It features a complex melodic line in the right hand with numerous slurs and ties, and a more active bass line. The second system, labeled 'Pno2', shows sparse chordal accompaniment in both hands. The third system, labeled 'Pno3', also features sparse accompaniment, with some chords in the right hand and single notes in the left hand.

106

Pno1

Pno2

Pno3

The musical score is divided into three systems, each for a different piano. The first system, labeled 'Pno1', consists of four staves. The top two staves are in treble clef, and the bottom two are in bass clef. Measure 106 is marked at the beginning. The music features a complex rhythmic pattern with many eighth and sixteenth notes, some with accents. There are several slurs and ties across measures. The second system, labeled 'Pno2', consists of two staves (treble and bass clef) with sparse chordal accompaniment. The third system, labeled 'Pno3', also consists of two staves (treble and bass clef) with similar sparse accompaniment. The overall texture is dense and rhythmic.

107

Pno1

Pno2

Pno3

Detailed description of the musical score: The score is for three pianos, labeled Pno1, Pno2, and Pno3. It begins at measure 107. Pno1 consists of a treble and bass staff. The treble staff has a large slur over the first two measures, with a 'v' marking above it. The bass staff has notes with flats. Pno2 consists of a treble and bass staff. The treble staff has rests and some notes with sharps. The bass staff has notes with sharps. Pno3 consists of a treble and bass staff. The treble staff has rests and some notes with sharps. The bass staff has notes with flats.

108

Pno1

Pno2

Pno3

The musical score is for three pianos, labeled Pno1, Pno2, and Pno3. It begins at measure 108. Pno1 consists of a treble and bass staff. The treble staff has a long note (possibly a half note or longer) that spans across several measures, with some grace notes. The bass staff has a rhythmic pattern of eighth and sixteenth notes. Pno2 also has a treble and bass staff. The treble staff has a rhythmic pattern of eighth notes and rests. The bass staff has a few notes and rests. Pno3 has a treble and bass staff. The treble staff has a rhythmic pattern of eighth notes and rests. The bass staff has a few notes and rests. The overall style is contemporary and rhythmic.

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109

Pno1

Pno2

Pno3

The musical score is divided into three parts: Pno1, Pno2, and Pno3. Pno1 consists of four staves. The top staff is in treble clef and contains notes with accents and a long horizontal line. The second staff is also in treble clef and contains notes with accents and a long horizontal line. The third staff is in bass clef and contains notes with flats. The fourth staff is in bass clef and contains a continuous eighth-note pattern. Pno2 consists of two staves. The top staff is in treble clef and contains notes with sharps and flats. The bottom staff is in bass clef and contains notes with sharps and flats. Pno3 consists of one staff in treble clef and contains notes with sharps and flats.

110

Pno1

Pno2

Pno3

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111 ♩ = 175

Pno1

Pno2

Pno3

25/16

28:15

26:15

5

The musical score is arranged in three systems, each for a different piano (Pno1, Pno2, Pno3). The time signature is 25/16. The tempo is marked as ♩ = 175. The first system (Pno1) starts at rehearsal mark 111 and features a complex, chromatic melody in the right hand and a supporting bass line in the left hand. The second system (Pno2) includes a fingering of '7' and a measure marked '28:15'. The third system (Pno3) includes a fingering of '5' and a measure marked '26:15'. The notation is dense with accidentals and slurs, indicating a technically demanding piece.

112 ♩ = 126 ♩ = 54

Pno1

Pno2

Pno3

f *ff* *f* *ff*



114

Pno1

Pno2

f *ff* *f* *ff*

115

Pno1

Pno2

ff

ff



116

Pno1

Pno2

Pno3

f

117

ff 13:7

Pno1

13:7 *ff*

Pno2

Pno3

118

Pno1

13:7

Pno2

13:7

Pno3

13:7

119

Pno1

13:7

Pno2

13:7

Pno3

13:7

120

13:7

Pno1

Pno2

Pno3

13:7

13:7

Detailed description: The score is for three pianos. Pno1 consists of five staves. The top staff has a treble clef and contains sparse notes with rests. The second staff has a treble clef with a melodic line. The third and fourth staves have treble and bass clefs respectively, with dense chordal textures. The fifth staff has a bass clef with a continuous eighth-note accompaniment. Pno2 consists of two staves, both with treble clefs. The top staff has sparse notes with rests, and the bottom staff has a few notes. Pno3 consists of two staves, both with treble clefs. The top staff has rests, and the bottom staff has a simple rhythmic accompaniment. A 13:7 time signature is indicated in three places.

121 ♩ = 91

Pno1

Pno2

♩ = 91

Pno3

f

f

f

f

mp 19

mp 17

f

122 ♩ = 126

Pno2

Pno3



123 ♩ = 175

Pno1

Pno2

Pno3

7

28:15

5

26:15

124 $\text{♩} = 54$

Pno1

mp

mf

mf

Pno2

Pno3

$\text{♩} = 54$

The musical score is for three pianos (Pno1, Pno2, Pno3) in 3/2 time. Pno1 consists of four staves: the top two are treble clef and the bottom two are bass clef. Pno2 consists of three staves: the top is treble clef and the bottom two are bass clef. Pno3 consists of two staves: the top is treble clef and the bottom is bass clef. The score begins at measure 124 with a tempo marking of quarter note = 54. Pno1 starts with a melody in the upper treble staff marked *mp*, while the lower staves play chords and bass lines marked *mf*. Pno2 and Pno3 have more sparse parts, with Pno2 playing chords in the upper treble and Pno3 playing a simple bass line. The piece concludes with a final chord in Pno2's upper treble staff.

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126

The musical score consists of three systems, each for a different piano part (Pno1, Pno2, Pno3). Each system contains three staves: a grand staff (treble and bass clefs) and a separate bass clef staff. Pno1 features dynamics of *ff* and *f*, with a *31:24* articulation mark. Pno2 features dynamics of *ff* and *f*, with a *31:24* articulation mark. Pno3 features dynamics of *f* and *ff*, with a *31:24* articulation mark. The score includes various musical notations such as notes, rests, and dynamic markings.

Pno1

Pno2

Pno3

Busted Grooves

127 83

31:24

Pno1

31:24

Pno2

31:24

Pno3

128

Pno1

Pno2

Pno3

31:24

31:24

31:24

Detailed description: This page of a musical score is for three pianos, labeled Pno1, Pno2, and Pno3. The score begins at measure 128. Pno1 consists of four staves: the top two are treble clef and the bottom two are bass clef. Pno2 also consists of four staves: the top two are treble clef and the bottom two are bass clef. Pno3 consists of three staves: the top is treble clef and the bottom two are bass clef. The music is written in a key with one flat (B-flat) and a 4/4 time signature. The score features complex rhythmic patterns, including sixteenth and thirty-second notes, and rests. A rehearsal mark '31:24' is placed above the first staff of each piano part. The notation includes various accidentals (sharps, flats, naturals) and dynamic markings.

129

Pno1

Pno2

Pno3

31:24

31:24

31:24

The image shows a musical score for three piano parts, labeled Pno1, Pno2, and Pno3. The score is written on a grand staff for each part, with a treble and bass clef. Pno1 starts at measure 129. The score includes various musical notations such as notes, rests, and dynamic markings. There are three instances of a time marker '31:24' with a bracket indicating a specific section of the music. The key signature has two flats (B-flat and E-flat). The score is arranged in three systems, one for each piano part.

130

Pno1

31:24 13:11

Pno2

31:24 13:11

Pno3

31:24 13:11

131

Pno1

Pno2

Pno3

37:24

19:16

37:24

19:16

37:24

19:16

Pno1

Pno2

Pno3

The musical score is divided into three systems, each for a different piano (Pno1, Pno2, Pno3). Each system consists of three staves: a top staff with a treble clef and a bottom staff with a bass clef. The top staff of each system contains complex melodic lines with many beamed notes and slurs. The bottom staves contain chordal accompaniment with various note values and rests. There are several dynamic markings, including accents and slurs. The score includes measures 132 through 140. Measure 132 is marked with a '7' and a slur. Measure 133 has a '9' and a slur. Measure 134 has a '7:5' and a slur. Measure 135 has a '9' and a slur. Measure 136 has a '7:5' and a slur. Measure 137 has a '9' and a slur. Measure 138 has a '7:5' and a slur. Measure 139 has a '9' and a slur. Measure 140 has a '7:5' and a slur. The score is written in a key signature of one flat (B-flat) and a time signature of 7/4.

133 ♩ = 132

Pno1

Musical score for Pno1, measures 133-135. The score consists of three staves: two treble clefs and one bass clef. The key signature is two flats (B-flat and E-flat), and the time signature is 8/8. The music features a series of chords and melodic lines. A dynamic marking of *ff* (fortissimo) is present. There are two measures of a double bar line (11) and two measures of a nine-measure rest (9).

Pno2

Musical score for Pno2, measures 133-135. The score consists of three staves: two treble clefs and one bass clef. The key signature is two flats (B-flat and E-flat), and the time signature is 8/8. The music features a series of chords and melodic lines. A dynamic marking of *ff* (fortissimo) is present. There are two measures of a double bar line (11) and two measures of a nine-measure rest (9).

Pno3

Musical score for Pno3, measures 133-135. The score consists of three staves: two treble clefs and one bass clef. The key signature is two flats (B-flat and E-flat), and the time signature is 8/8. The music features a series of chords and melodic lines. A dynamic marking of *ff* (fortissimo) is present. There are two measures of a double bar line (11) and two measures of a nine-measure rest (9).

90 134 $\text{♩} = 54$

Pno1

p

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Germantown, NY

Pno2

p