

# *Charing Cross*

for electronic instruments in just intonation

Kyle Gann  
2007

## *Charing Cross*

Sometimes I like to use microtones in a songlike, almost pop kind of context to bring the tuning weirdness into even greater relief. *Charing Cross* moves among chords based on the 7th, 9th, 11th, and 13th harmonics, as well as on the tonic and on 15/14 (a virtual 17th harmonic, though actually slightly more exotic). Using software that let me add microtones freely as I went along, I ended up with 39 pitches to the octave. (Only 37 different pitches were used in the realization; when two pitches are closer than five cents I merge them, just to simplify the realization.) The form of the piece is a loose additive process: first the 7th-harmonic and 13th-harmonic tonalities are introduced, later the 9th and 15/14, and the 11th-harmonic tonality is saved for the very end. The opening bass line started ringing in my head as I was sitting outside by the Thames near the *Charing Cross* underground station in London, and I commenced composing the piece on a napkin at the closest outdoor Italian restaurant. That was September 6, 2007. I finished the piece back home in Germantown on the 13th.

The complete scale is given on the following page, in Ben Johnston's just-intonation notation. In this notation, + raises a pitch by 81/80, - lowers it by 80/81, # raises it by 25/24, b lowers it by 24/25, 7 lowers it by 35/36, *L* raises it by 36/35, ^ 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.

All accidentals remain in effect until the measure ends.

Selected performances:

October 9, 2007 presented by the Karnatic Lab at De Badcuyp in Amsterdam (world premiere)


October 25, 2007, at the Mendelssohnsaal of the Hochschule für Musik und Theater in Hamburg, Germany

November 7, 2007, at Trinity College in Dublin


February 8, 2008, at the University of Kentucky in Lexington

Duration: 8 minutes


# Charing Cross Scale

Pitch: 

Ratio:	1/1	81/80	65/64	33/32	15/14	35/32	143/128	9/8	55/48	77/64	135/112	39/32	5/4
Cents:	0	21.5	26.8	53.3	119.4	155.1	191.8	203.9	235.7	320.1	323.4	342.5	386.3



81/64	21/16	75/56	27/20	65/48	11/8	45/32	91/64	35/24	165/112	3/2	195/128	49/32
407.8	470.8	505.8	519.6	524.9	551.3	590.2	609.4	653.2	670.8	702	728.8	737.7



99/64	45/28	13/8	5/3	27/16	12/7	55/32	7/4	25/14	117/64	15/8	121/64	63/32
755.2	821.4	840.5	884.4	905.9	933.1	937.6	968.8	1003.8	1044.4	1088.3	1102.6	1172.7

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♩ = 52

Electric Organ

Electric Bass

Detailed description: This system contains the first three measures of the piece. The Electric Organ part is represented by two staves (treble and bass clefs) with a brace on the left. It is mostly silent, with only a few notes in the final measure. The Electric Bass part is on a single bass clef staff, playing a rhythmic pattern of eighth notes with slurs and ties. The key signature has one flat (B-flat), and the time signature is 4/4.

4

E. Org.

E. Bass

Detailed description: This system contains measures 4 through 6. The Electric Organ part has two staves. In measure 5, there is a piano (*p*) dynamic marking. The Electric Bass part continues its rhythmic pattern. The key signature and time signature remain the same.

7

E. Org.

E. Bass

Detailed description: This system contains measures 7 through 9. The Electric Organ part has two staves. In measure 8, there is a 7th fret marking (*7+*) above the treble staff. The Electric Bass part continues its rhythmic pattern. The key signature and time signature remain the same.

10

E. Org.

E. Bass

Detailed description: This system contains measures 10 through 12. The Electric Organ part has two staves. In measure 10, there is a 7th fret marking (*7+*) above the treble staff. In measure 12, there is a 7th fret marking (*7+*) above the bass staff. The Electric Bass part continues its rhythmic pattern. The key signature and time signature remain the same.

2 13

Glock.

E. Org.

E. Bass

Musical score for measures 13-15. The Glockenspiel part (top) features a triplet of eighth notes in measure 14. The E. Org. part (middle) consists of two staves with chords and a melodic line. The E. Bass part (bottom) has a rhythmic eighth-note pattern.

16

Glock.

E. Org.

E. Bass

Musical score for measures 16-18. The Glockenspiel part (top) features a triplet of eighth notes and a 2/4 time signature change in measure 18. The E. Org. part (middle) consists of two staves with chords and a melodic line. The E. Bass part (bottom) has a rhythmic eighth-note pattern.

19

Glock.

E. Org.

E. Bass

Musical score for measures 19-21. The Glockenspiel part (top) features a triplet of eighth notes. The E. Org. part (middle) consists of two staves with chords and a melodic line. The E. Bass part (bottom) has a rhythmic eighth-note pattern.

*Charing Cross*

21 3

Glock. 

E. Org. 

E. Bass 

24

Glock. 

E. Org. 

E. Bass 

27

Glock. 

E. Org. 

E. Bass 

*Charing Cross*

4 29

Glock.

E. Org.

E. Bass

31

Glock.

E. Org.

E. Bass

33

Glock.

E. Org.

E. Bass

*Charing Cross*

35 5

Glock.

E. Org.

E. Bass

38

Glock.

E. Org.

E. Bass

41

Glock.

E. Org.

E. Bass

*Charing Cross*



6 44

Glock.

E. Org.

E. Bass

47

Glock.

E. Org.

E. Bass

49

Glock.

E. Org.

E. Bass

*Charing Cross*

51

Glock.

E. Org.

E. Bass

Musical score for measures 51-53. The Glockenspiel part features a triplet of eighth notes in the first measure. The E. Org. part consists of chords and single notes. The E. Bass part has a rhythmic eighth-note pattern.

54

Glock.

E. Org.

E. Bass

Musical score for measures 54-55. The Glockenspiel part features a triplet of eighth notes. The E. Org. part consists of chords and single notes. The E. Bass part has a rhythmic eighth-note pattern.

56

Glock.

Tablas

E. Org.

E. Bass

Musical score for measures 56-59. The Glockenspiel part is silent. The Tablas part has a rhythmic eighth-note pattern. The E. Org. part consists of chords and single notes. The E. Bass part has a rhythmic eighth-note pattern.

Charing Cross

57

Glock.

7

6

Tablas

E. Org.

E. Bass

58

Glock.

7

6

Tablas

E. Org.

E. Bass

*Charing Cross*

59 9

Glock.

Tablas

E. Org.

E. Bass

60

Glock.

Tablas

E. Org.

E. Bass

*Charing Cross*

61

Glock.

Tablas

E. Org.

E. Bass

Detailed description: This system contains measures 61 and 62. The Glockenspiel part (top) has a melodic line with a slur over measures 61-62 and a measure number '7' above the final measure. The Tablas part (second) has a rhythmic pattern with a slur over measures 61-62 and a measure number '6' above the final measure. The E. Org. part (third) has a simple harmonic accompaniment. The E. Bass part (bottom) has a bass line with a slur over measures 61-62.

62

Glock.

Tablas

E. Org.

E. Bass

Detailed description: This system contains measures 61 and 62. The Glockenspiel part (top) has a melodic line with a slur over measures 61-62 and a measure number '7' above the final measure. The Tablas part (second) has a rhythmic pattern with a slur over measures 61-62 and a measure number '6' above the final measure. The E. Org. part (third) has a simple harmonic accompaniment. The E. Bass part (bottom) has a bass line with a slur over measures 61-62.

63 7 11

Glock.

Tablas

E. Org.

E. Bass

64 7 13

Glock.

Tablas

E. Org.

E. Bass

*Charing Cross*

12

65

Glock.

Tablas

E. Org.

E. Bass

Musical score for measures 12-13. The Glockenspiel part consists of two measures, each with a 7-measure slur and a fingering of 13. The Tablas part features a rhythmic pattern of eighth notes. The E. Org. part has two measures, with the first measure containing a 7 and the second measure containing a 13. The E. Bass part has a rhythmic pattern of eighth notes with 7 and 13 fingering.

67

Glock.

Tablas

E. Org.

E. Bass

Musical score for measures 67-68. The Glockenspiel part has two measures, with a time signature change from 7/8 to 2/4. The Tablas part has a rhythmic pattern. The E. Org. part has two measures, with a time signature change from 7/8 to 2/4. The E. Bass part has a rhythmic pattern.

*Charing Cross*

69

Glock.

Tablas

E. Org.

E. Bass

Detailed description: This system contains measures 69 and 70. The Glockenspiel part (treble clef) starts with a 7+ ornament and features a melodic line with a 13-bend. The Tablas part (percussion clef) has a rhythmic pattern with a 7 ornament. The E. Org. part (grand staff) has a 7+ ornament and a 13-bend. The E. Bass part (bass clef) has a 7+ ornament and a 13-bend. The time signature changes from 5/8 to 4/4 between measures 69 and 70.

71

Glock.

Tablas

E. Org.

E. Bass

Detailed description: This system contains measures 71 and 72. The Glockenspiel part (treble clef) has a melodic line with a 7+ ornament. The Tablas part (percussion clef) has a rhythmic pattern with a 7 ornament. The E. Org. part (grand staff) has a 7+ ornament. The E. Bass part (bass clef) has a 7+ ornament. The time signature is 4/4.

*Charing Cross*



14 72

Glock.

Tablas

E. Org.

E. Bass

75

Glock.

E. Org.

E. Bass

78

Glock.

E. Org.

E. Bass

*Charing Cross*

81 15

Glock. 

E. Org. 

E. Bass 

84 3 3

Glock. 

E. Org. 

E. Bass 

87 3

Glock. 

E. Org. 

E. Bass 

*Charing Cross*

16 89

Glock.

E. Org.

E. Bass

Musical score for measures 89-90. The Glockenspiel part features two triplet markings. The E. Org. part has a long slur across both measures. The E. Bass part has a rhythmic pattern of eighth notes.

91

Glock.

E. Org.

E. Bass

Musical score for measures 91-92. The Glockenspiel part has two 11-measure rests. The E. Org. part has a 11-measure rest in the right hand and a whole note in the left hand. The E. Bass part continues with eighth notes.

93

Glock.

E. Org.

E. Bass

Musical score for measures 93-94. The Glockenspiel part has 11-measure rests and triplet markings. The E. Org. part has a 11-measure rest in the right hand and a whole note in the left hand. The E. Bass part continues with eighth notes.

Charing Cross

Glock.

E. Org.

E. Bass

Glock.

E. Org.

E. Bass

Glock.

E. Org.

E. Bass

Charing Cross

18 103

Glock.

E. Org.

E. Bass

106

Glock.

E. Org.

E. Bass

109

Glock.

E. Org.

E. Bass

Charing Cross

*III*

Glock.

E. Org.

E. Bass

September 6-13, 2007  
London, England /  
Germantown, NY