

for jim, ben and lou
Three pieces for harp, guitar and percussion

I. Preamble

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for Jim Tenney

For guitar, diatonic harp, "tuner/2nd harp" (three performers), with optional three bass notes on second (concert) harp (played by tuner)

Tempo is relatively fast for the eighth note, (about 360). Except where indicated, the general dynamic level is mezzo forte, or a little louder depending on performance circumstances.

Any harp and any guitar might be used. The harp is diatonic, but a concert harp could be used without pedals. The guitar may be amplified, acoustic, or amplified acoustic, steel or nylon strings. What is important is a general matching of dynamics and timbre between the harp and guitar, though they do not need to be indistinguishable (just compatible).

The third performer's (tuner/2nd harp) main responsibility is to retune the guitar throughout the piece. This performer also plays harp, but only three low notes (C, E, and G) tuned to 1:1, 5:4, and 3:2. These are as low as possible: if a folk harp is used for the main harp part, the tuner might use the lowest notes on a concert harp for these three notes. These notes are always optional where written, and occur at the beginnings of measures as a kind of pedal/accent. If the performer is too busy retuning the guitar at any time, these notes can be omitted.

Harp Tuning

The (diatonic) harp is tuned differently in each of its four and a half octaves. The tuning is specified as harmonics of a given harmonic series, and the three series are related as 1:5:3 (a just major triad).

For example, C₃ is the 3rd harmonic of C, a G-natural 2¢ sharp of equal-tempered G. E₁₁ is the 11th harmonic on E, which is 11/8 x 5/4 = 55/32, notated as a B_b 62¢ flat of its tempered namesake (and actually, closer to an "A").

All pitches are referred to by their *octave reduced ratios*. The three harmonic series, their "note names" (used here) and their cents deviations from 12-ET are given below (only odd harmonics are given):

C (1/1)								
1	3	5	7	9	11	13	15	17
C	G	E	B _b	D	F _#	A _b	B	C _# /D _b
0	+2	-14	-31	+4	-49	+41	-12	+5

E (5/4 to C)								
1	3	5	7	9	11	13	15	17
E	B	G _#	D	F _#	B _b	C	D _#	F
-14	-12	-28	-45	-10	-63	+27	-26	-9

and the tuner will be tuning (slightly) several strings at once. It may not really be possible to completely tune the guitar until the complete harmonic series has been achieved. The several measure passages before sections III and V may be repeated until the guitar is tuned to the new harmonic series.

It is important that this performer know by *ear* the four different tunings of the guitar used, and the differences between them (of which the above is a theoretical, not a sonic, explanation). The *current* tuning is notated frequently throughout the piece, with numbers referring to the harmonic number of the *new* or entering series. No tuning is done in Section I.

I Preamble

Tuning

Harp

C₁ C₉ C₅ C₁₁ C₃ C₁₃ C₇ C C₉ C₅ E₉ E₅ C₁₃ E₁₁ E₁₃ E₇ C₅ C₁₁ C₃ G₉ E₃ C₁₅ C₉ C₃ C₁₅ C₅ C₃
 G₃ E₁ G₁ G₃ E₁ E₁ G₁ G₅ G₁₁ G₃ G₁₃ G₇ G₁ G₁₇ E₃ G₅ C₁ C₁₇ E₁ E₁₇ G₁

Guitar

Section I Section II Section III Section IV
 C E G C
 5 7 17 3 1 5 1 11 7 5 13 17 13 17 3 1 5 7 5 13 17 3 7 1

I Preamble

I

12th fret harmonics

Guitar

12th fret harmonics

ff

mf III VI

VI

(The C harmonic series tuning stays until II)

Tuner/
2nd Harp

ff

mf

mf

1 7 17 3 1 5

Harp

ff

mf

mf

Guit.

II VI II I III (C7)

Tuner

Harp

3

Guit.

(C₉)

III II V III I II V III VI

Tuner

Harp

(∇) (∇) (∇)

Guit. *bring out* (C₁₁) (C₁₃) III V III V I I

Tuner 1st X only

Harp (2nd X) (1st X)

Guit. (C₁₅) *freely* 8:5

Tuner

Harp *freely* 9 (J)

Guit. 12th fret (C₁₇) 12th fret harmonics

Tuner

Harp 3

*G♯ 1st X only, then tune to G♯

II*

Guit. *(mf)* (E₁₇, C₁₃) (>) (E₁₅, C₁₇) III

(tune I (E) → F (E₁₇)) (tune III (G) → G♯ (E₅))

Tuner 1st X only *(mf)* E₁₇ E₅ E₁₇

Harp *(mf)*

Guit. (E₁₃, C₁) (>) (E₁₁, C₇) (>) 7:3 IV V I II I II III V

(tune II → C♯ (E₁₃)) (tune V → B♭ (E₁₁))

Tuner 5 13 17 E₁₁ 5 13 17

Harp (>) (E₁₃) (E₁₁) (E₁₁)

Guit. (E₉, C₁₁) V IV II

Tuner 11 5 13 17

Harp (E₉) (>) (C₁₁) (E₉) (C₁₁)

*(In section II-IV, low notes on 2nd harp are optional; tuning is more important.)

Guit. 3X

(E₇, C₉) (E₅, C₃)

IV 3 IV V VI IV (V) V IV III

(tune IV → D (E₇))

Tuner

11 E₇ 5 13 17

Harp

3X 2nd, 3rd X

Guit. (E₃, C₁₅) (E₁, C₅)

II IV III IV (tune VI (C) → E₁)

Tuner

(1st X only)

Harp

Note: these four measures, until III, may be repeated several times to fully tune.

Guit.

Tuner

Harp

III

Guit. (G₁₅, E₉) (tune II → B (G₅))

(tune V → A^b (G₁₇))

Tuner G₁₇ 17 G₅

Harp (G₁₇, E₅) softly

Guit. (G₁₃, E₁₅) (tune VI → E^b (G₁₃))

Tuner 17 5

Harp (G₁₅, E₉) (G₁₃, E₁₅) softly

Guit. (G₁₁, E₁₃) (G₉, E₁₁) softly

(tune VI → D (G₃))

Tuner 13 17 G₃ 5

Harp (G₁₁, E₁₃) softly

Guit.

Tuner

Harp

Guit.

Tuner

Harp

Guit.

Tuner

Harp

Guit. *pp pp pp (pp) mf*
 IV (5th fret) ^{8va}
 (C₁₇, G₁₁)
 III IV
 (tune IV → C₁₇)

Tuner C₁₇

Harp *p mf*

Guit. *(C₁₅, G₅) (C₁₃, G₁₇) (C₁₁, G₁₅)*
 (all harmonics) ^{8va}
 (5th fret) (5th fret) II III I IV VI
 (tune V → A^b (C₁₃))
 C₁₃ 17

Tuner

Harp

Guit. *(pp)*
 I IV VI I IV VI
 III (5th fret) III
 (strummed)
 (C₉, G₃) (C₇, G₉)

Tuner (tune II → B^b (C₇))
 13 17 C₇

Harp

This note can be slurred, not re-struck, by just touching the harmonic.

Guit. *(C₅, G₁₃)*

(tune VI → E (C₅))

Tuner C₅ 13 17 7

Harp

Guit. *(C₃, G₁) (strum)*

(all harmonics, 12th fret, except VI)

(C₁, G₇)

(continue adjusting) (tune I → C (C₁))

Tuner 5 13 17 3 7


Harp

Guit. *(simile)*

Tuner 5 13 17 3 7 1


Harp

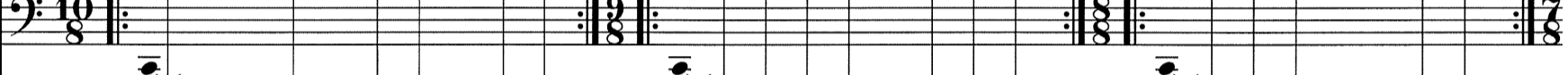
Note: These three measures, until V, may be repeated to tune.

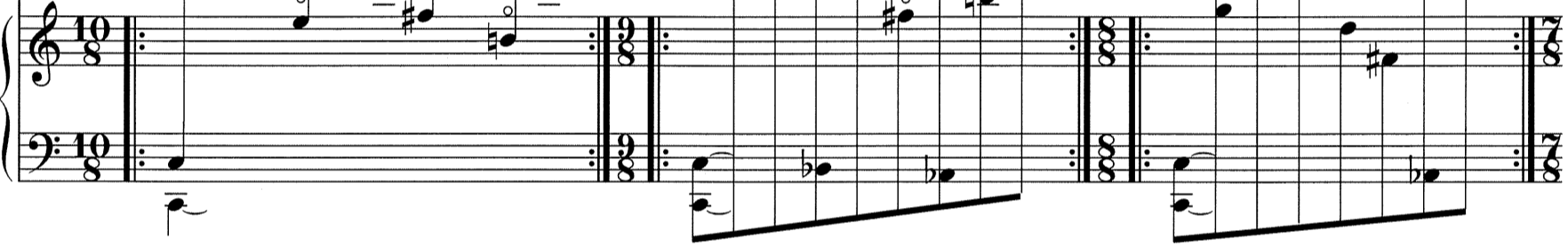
Guit. 


Tuner 

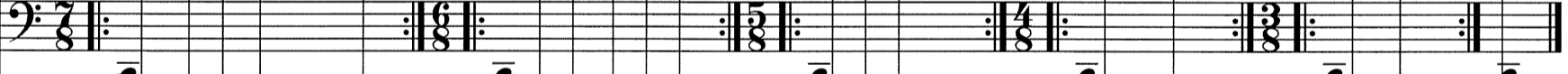
Harp 

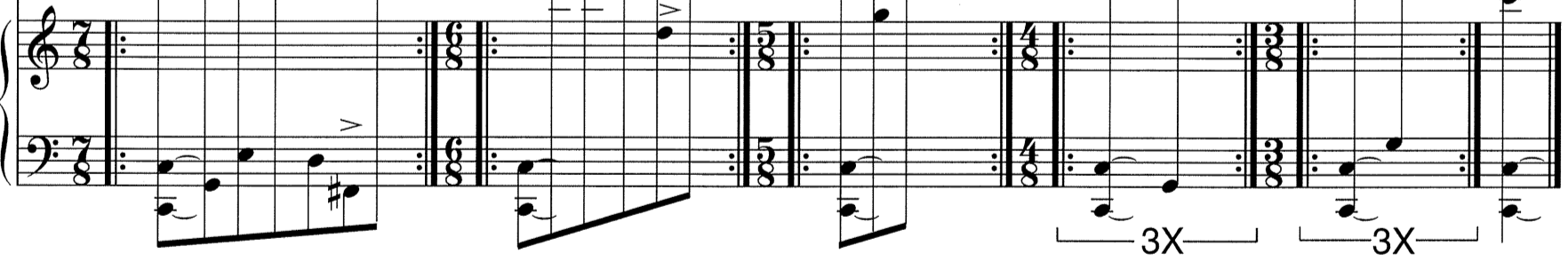
Guit. 

Tuner 

Harp 

Guit. 

Tuner 

Harp 

*In Section V, "leaving" pitches are accented slightly.