

Caught in an Octagon of Unaccustomed Light.

Paul Dolden 1987-88.

Listeners Score.

Duration: 15'57"

Public program notes for the composition:

The composition continues the development of a musical language based on the colour of unusual or unaccustomed acoustic sounds. In this case the predominant use of inharmonic timbres: metal, multiphonics, and a non-octave tuning system. These materials form the basis for a language that our musical tradition has for the most part ignored. A series of five sections, each of which are based on specific sound sources, has the listener "caught" by their interactions. Musical continuity is maintained by the reuse of similar gestures, colours and tuning system. Overall structural integrity is maintained through a palindromic ordering of the sections. For example the first and fifth sections use the same sound world and likewise the second and fourth sections use another sound world. The third or middle section contains aspects of both sound groupings.

The composition was commissioned by CKLN radio in Toronto for David Olds show entitled "Transfigured Night," with assistance from the Ontario Arts Council. The composition was created in the composers' private studio.

The radio and concert premiere of the composition was in mid-May 1988 in Toronto, Canada.

Caught in an Octagon of Unaccustomed Light. Listeners Score. Paul Dolden 1987-88. Revised 1989-90

Explanation of the Score.

The score is divided into five sections marked Section A, B, C, D and E. The sections should not be understood as separate movements because the work has a continuous sound with no significant break between the sections. The sectionalization of the composition is made in order to aid analysis. The time scale, written at the bottom of each system, is re-indexed to 0" at the beginning of each section for greater accuracy in timings. Above the time scale are dynamic markings which apply to all the parts notated in that system. Dynamic markings below individual parts apply only to that single instrument.

Harmonic Sounds-Musical Instruments.

The tuning of the pitched instruments including double bass, guitar, flute, and recorder is based on Chord 1 which is provided on page one of the score. This chord is written out horizontally rather than vertically in order to indicate the distance in cents from our equal tempered tones. (i.e. +50, +25, etc.). Below the notes of Chord 1 are the layer numbers, or note numbers. The layer numbers are used to indicate when an instrument is only playing part of the chord. In the score the chord is not written out and is only referred to by its name. The transpositions of the chord are given a new name. For example Chord 2 = Chord 1 +1200¢ (or one octave), Chord 3 = Chord 1 +2400¢ (or two octaves), etc.

If the layers or individual notes of a chord change at asynchronous times, then the layer number is written right above or below the staff, where that individual layer changes pitch. (see page 13 for several examples of this).

All these instructions are repeated in the score. The main advantage of this notation method is to save great amounts of space by not having to write out numerous 18 note chords. The piano is the only musical instrument which does not use this symbolic notation. The piano parts are written out as ordinary piano music. However the piano has been retuned so what one reads in the notation and what one actually hears is different. (see end of this introduction for the tuning of the piano.)

Chord 1 is a completely artificial tuning system in the sense that it is not at all related to the harmonic series or our 12 tone tempered system. It was created in order to avoid octaves and fifths. This lack of strong harmonic intervals allows the chord to more closely approximate the non-octave tunings and spectrums of the metal instruments. The chord, like all natural sounding phenomenon (except our present tuning system), is tuned logarithmically with larger intervals in the lower register and ascending to smaller intervals in the upper register. In this case the distances between the consecutive notes ascending are: 250¢, 275¢, 225¢, 250¢, 200¢, 225¢, 175¢, 200¢, 150¢, 175¢, 125¢, 150¢, 100¢, 125¢, 75¢, 100¢, 50¢. The tuning of the piano is different from chord one and is dealt with at the end of this introduction to the score. It is sufficient for now to state that the tuning of the piano is also logarithmic and avoids octaves and other strong harmonic intervals.

Inharmonic Sounds-Metal and Multiphonics.

The metal sounds consist of three main groups: junk or scrap metal (poles, wheel rims, pot lids, etc.), Gamelan orchestra and cymbals or large metal sheets. The type of the junk metal is given in the score. The Gamelan orchestra used was at Simon Fraser University in Burnaby, Canada. The instruments were tuned to a Pelog 7 note scale or a Slendro 5 note scale. For each of the pitched Gamelan instruments (Sanon and Slenthem), both scale types were used at the same time and often two consecutive notes of each scale were taken up with one strike of the instruments. A brief description of the Gamelan instrument types is:

Gongageng-the single largest, deepest sounding tam-tam of the orchestra and about 1 meter in diameter

Gongsuukken-smaller tam-tams and in various sizes of 60-90 centimeters in diameter.

Kempeul-smallest tam-tams of various sizes around 50 centimeter in diameter.

Slenthem-thin strips of metal freely suspended over resonating tubes and varying in length from

around 20-35 centimeters.

Sanon-thick pieces of metal mounted over resonating tubes and varying in length from about 15 to 30 centimeters.

These Gamelan instruments were played with their corresponding traditional Gamelan mallets.

For each type of metal instrument a simple percussion-style notation is used in which the lowest sound is notated at the bottom of the stave. The next sound ascending in the first space, the next sound in the second space, etc.

Four multiphonics were selected on each of the following instruments: Bassoon, Baritone Saxophone, Clarinet and Oboe. The fingerings for the four multiphonics on each instrument were:

Oboe multiphonics	Clarinet multiphonics	Baritone Sax multiphonics	Bassoon multiphonics
T O (o) O O T G# O O O F O O D# C#	T T T RT S# G# A# F/C E/B	C Bb E C C# Bb C	W Bb F G# G# F G#

The percussion-style notation for the multiphonics was also used with the lowest sounding multiphonic at the bottom of the stave, next multiphonic ascending in the first space, the next multiphonic ascending in the second space and the highest pitched multiphonic in the third space.

Production Notes

All sounds were recorded and mixed in the digital recording domain. The only exception to this being the opening single bash on cymbal, tam-tam, and metal sheet that reappears later in Section A and at 2'12" of Section E. This combined sound was transferred to analog tape in order to slow it down. The recording equipment used for this composition included:

2 PCM digital audio recorders-PCM 601 and PCM F1.

3 Beta machines-1 Sony SL-2000 Beta machine and 2 SL-HF 900 Beta Hi-Fi Beta machines with editing capabilities in order to splice sounds together.

2 R-Dat taperecorders-2 Sony DTC-1000 machines.

Tascam Model 3 mixing board.

Stax Lambda headphones-used for reference monitors.

2 AKG C414 B-ULS microphones.

The composition in its entirety took 1014 man hours of work and breaks down as the following:

Research = 97 hours-research of the spectrum of the sound sources used and how the different sound sources combine.

Composition = 162 hours - the actual composition of the piece at paper.

Technical = 100 hours - building of special stands for the metal, retuning the piano etc.

Production = 537 hours - recording and pre-mixing the sounds together.

Final Mastering = 32 hours - mixing of the mixdown tapes to create the final audio product.

Score = 86 hours - to create the Listeners score which is transcribed from the original score created in the compositional stage.

The stages from research to technical work occurred from September to December 1987, and the production stage to final Listeners score stage occurred between December 1987 and the end of April 1988.

All the parts for the composition were performed by myself except for: Piano - Andrew Czink, Bassoon and Oboe - Ken Newby, and Baritone Sax and Clarinet - Ross Curran. Special thanks to the performers who demonstrated great patience and care with my work. Special thanks to David Olds of CKLN radio in Toronto who arranged the commission and has been a supporter of my music from the beginning. If every major city had a few more David Olds then more of us "new music" composers might be able to support ourselves financially from the dissemination of our work in that great cultural wasteland known as the media.

Paul Dolden

April 29, 1988.

Tuning of the Piano.

Each string of the piano was tuned to an individual pitch. Therefore one note played at the keyboard produced a three note chord over most of the range of the piano and a two note chord in the second octave of the piano. In the following notation the normal keyboard note is written on the left of the arrow and on the right side of the arrow the tuning for the individual strings for that note. The new tunings of each note are written horizontally in order to indicate the distance in cents from our equal tempered tones. (i.e. +50, -25, -10, etc.). With each seven notes the intervallic distances between the strings of an individual note changes. In each case the intervallic distances are marked in brackets at the beginning of each note group. (i.e. 200, 200¢ or 150, 150¢, etc.). Within each seven note group the distance between each note on the keyboard is: +50, +150¢, +50¢, +150¢, etc. Several notes in the upper register of the piano used only had two strings and notes which were missing two strings were not used.



Recording History of Work.

Paul Dolden
Born 1956, Ottawa, Canada

Paul Dolden begins his career at age 16 as a professional electric guitarist, violinist and cellist. Excited by the possibilities offered by recording technologies, Paul Dolden turns to contemporary modes of production and dissemination in the creation of his music. At age 29, he wins the first of a string of European awards that establish him as a composer. Now the winner of over twenty international awards, Paul Dolden's music is performed in Europe and North America to wildly enthusiastic audiences.

In a career spanning over twenty five years, Paul Dolden has perfected his unique approach to audio technology, using it as a platform from which to launch or capture otherwise impossible musical performances. In this way, he makes his computer behave like a new, virtual orchestra and manipulates it with as much sensitivity as he would a traditional one. His compositions are characterised by a maximalist aesthetic in which hundreds of digitally recorded instrumental and vocal performances are combined in multiple layers.

Paul Dolden's music has been described as the "missing link" between jazz and rock and the high-brow concert tradition. Critics have called it "music for the information age, enlisting noise, complexity and beauty in its quest for excess," and characterised it as "apocalyptic hyper-modernism."

The early works employ a unified approach to timbral and harmonic variation. Under the influence of post-modernism, Paul Dolden's concerns have shifted to include the juxtaposition and superimposition of disparate musical styles evident throughout the *Resonance Cycle* of works (1992-96). Always working to surpass himself, with the *Twilight Cycle* of recent years Paul Dolden boldly investigates the forbidden fruit of contemporary new music—melody and dance rhythms.

This work was originally produced during the 1980s and/or 90s on the audio gear detailed in the score introduction. The work was first published on the Tronia label disc called: "The Threshold of Deafening Silence." In 1990, or on the double CD: "L'ivresse de la vitesse" published on empreintes DIGITALes in 1994 (IMED 9417-18) and re-released in 1999 (IMED 9917-18). All my works were remixed using the original recordings, processed, and mastered in the period 2000-2002. This work remastered appears on one of the following three CDs, all of which are on empreintes DIGITALes:

- 1) Seuil de silences. (IMED 0369)
- 2) L'ivresse de la vitesse 1. (IMED 0317)
- 3) L'ivresse de la vitesse 2. (IMED 0318)

It is very important to be listening to the remastered version because of their increased clarity and depth of sound. During the 1980s and 90s I had to use gear that was insufficient audio quality for mixing several hundred tracks of audio together. With the new masters I was able to achieve the balance between voices that I had so carefully notated in the original scores. I invite you to discover many new levels of meaning and clarity in the new masters, which are much closer to my original artistic thought.

For the tape part of a mixed work (mixed work works for live instrument(s) and tape), you can obtain a copy of the tape portion, (the 2000-2002) remastered tape parts, from:

- 1) The Canadian Music Center In Toronto. (20 St Joseph St.)
- 2) From me: you can obtain my email address at the web site for empreintes DIGITALes. I love to hear from people who are playing my music.
- 3) I have left copies of the tape part with my publisher, empreintes DIGITALes.

You should only be using a digital copy of the digital master.

Section A

Chord 1. Chord 2=Chord 1 +1200¢ (one octave)

layer number: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

There are 16 scrap metal parts. The number(s) at the beginning of a bar, above the first note indicate which part(s) the notation refers to. Each part consists of two metal pieces in which one was played with soft mallets and is indicated by a note below the notational line, and one piece was played by a hard mallet and is indicated by a note above the notational line.
1=Cooper rings, 2=Metal Tongue Drum, 3=Cooking Pans, 4=Cooking Pots, 5 & 6 & 7=Metal Wheel Rims, 8 & 9 & 10 & 11 & 12=Flanged solid metal poles, 15mm thick 40-60 cm long. 13 & 14=Long metal poles 1.5-2.0 meters long. 4 cm diameter 4 mm thick. 15 & 16=Saw Blades 20-40 cm in diameter.

M E T A L

13-16 ♩=104

Piano

Stones dropped against large suspended metal sheet.

Coins dropped

Broken glass dropped

Stones dropped

Cymbals removed from water

4 Bowed cymbals in water

Cymbals 1/2 submerged in water

11 electric guitars, each one tuned to a single note (Chord 2 layers 8-18). As signal of each guitar turns into feedback non-linear distortion or "fuzz" is added.

Single bash on cymbal, small tam-tam and large metal sheet. This combined sound with itself pitched 1 & 2 octaves lower.

fff

0" 5.5" 11" 16" 21"

decres poco a poco

ffff

13-16 ♩=104

M E T A L

Broken glass dropped

Stones dropped

2 cymbals end

Guitar layers begin to drop out

27" 32"

M		J J J J J J J J J J J J J J J 8 16 J=276
E	5	J J J J J J J J J J 6 J J J J J 4 16 J=264.5
T		J J J J J J J J J J 6 J J J J J 8 J J J J J
A		J J J J J J J J J J 6 J J J J J 4 J J J J J
L		J J J J J J J J J J 6 J J J J J 7 14 J=253
S	pont	J J J J J J J J J J 6 J J J J J 4 16 J=241.5
T	13-16	J J J J J J J J J J 6 J J J J J 7 13 J=241.5
R	9-12	J J J J J J J J J J 6 J J J J J 4 16 J=276
I		J J J J J J J J J J 6 J J J J J 8 J J J J J
N	5-8	J J J J J J J J J J 6 J J J J J 4 J J J J J
G	1-4	J J J J J J J J J J 6 J J J J J 7 14 J=253
		J J J J J J J J J J 6 J J J J J 4 16 J=241.5

S
Strings=16 bowed string parts. The number(s) at the beginning of a bar, above the time signature indicates which part(s) the notation refers to. The harmony is called Chord 1A, which equals Chord 1 layers 2-17 inclusive. Therefore layer 1 of Chord 1A is D+50¢. Layers 1-4 are played by Double Bass and layers 5-16 are played by Cello. A note below the notational line equals Chord 1A and a note above the notational line equals Chord 1A +700¢. Performance instructions apply to all parts notated.

page 2

7 different cymbals. Type of beater indicated at the beginning of the bar: ♀=medium hard mallet, ♂=drum stick, ✕=hard plastic ♪=hammer with large rubber head. Each cymbal struck while submerged in water and then pulled out of the water and then pushed back into the water.

Bowed cymbals

$\text{♩} = 138$

5 - $\ddot{\text{g}}$; - $\ddot{\text{g}}$; - $\ddot{\text{g}}$; - $\ddot{\text{g}}$; - $\ddot{\text{g}}$;

4 - $\ddot{\text{g}}$;

1'02"

1 '07"

1112"

$$12 \lambda = 230$$

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	4 { } $\delta = 218.5$	4)))))	
	6))))))))	7))))	
	4 { } { } { } { }	4)))))))))))))	
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	4 { } { } { } { }	()))))))))))))	
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	8 { } $\delta = 184$	()))))))))))))	
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	7 { } $\delta = 172.5$	())))))))	3)))))))	4)))))))
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	4	5))))))))	3)))))))	4)))))))
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	3 { } { } { } { }	())))))))	3)))))))	3)))))))
	4 { } { } { } { }	())))))))	3)))))))	3)))))))

page 3

parts now
on one line

1-4 $\lambda = 184$

5

Cymbals

Bowed Cymbals

Start water push out of Start in water & pull out.

parts no
on one line
~~-4~~ $\lambda = 184$

Electric guitars with distortion Chord 2 (layers 7-18)

Bottom stave=open strings chord 3

Bottom stave=open strings, chord 2
1st space=1st natural harmonic chord 2 +1200c

1st space=1st natural harmonic, chord 2 +1200c
2nd space=2nd natural harmonic, chord 2 +1900c

3rd space=3rd natural harmonic, chord 2 +2400c

11170

112311

cresc poco a poco

11081

J=138 page 4

Metal

Lower numbers indicate when each part goes to eighth notes and then to tremolo.

Strings

Chord 1A +500¢ Chord 1A +700¢ Chord 1A +900¢ Chord 1A +1100¢ Chord 1A +1200¢

Cymbals

freely up & down in water

Bowed Cymbals

Electric Guitars

Odd number harmonics gliss up to next tone.

Sawing

Sawing on 4 surfaces. Woodsaw on large board & on small board. Hacksaw on tin can & bottle. For each noted note one sweep of saw performed.

3 Metal sheets

3 Metal sheets

1'33" **1'38"** **1'43"**

All parts now in $\frac{4}{4}$ and J=138

Metal

Both pieces of metal played at same time in each part.

Strings

pont...norm Chord 1A +1900¢ norm...pont Chord 1A +700¢ pont...norm Chord 1A +2400¢

Bowed Cymbals

Electric Guitars

Even numbered layers gliss up 400¢ Chord 2 +400¢. Odd numbered layers gliss up to next tone. Even numbered layers gliss up 400¢.

Sawing

3 Metal Sheets

Tapping on glass bottles

1'48" **1'54"** **1'59"**

M E T A L

Both pieces of metal played as a tremolo in each part until the end of Sect. A

Strings

12-16 → 8-16 → 4-16

Start on Chord 1A +2400¢, tremolo & gliss downwards 100¢ per bar.
Four beats going from pont to normal and then 4 beats norm. to pont.
Continue for two octaves doing the same thing.

Electric Guitars

Chord 2 +800¢. Numbers indicate entrance of each layer. beginning of this line.
All notes are held and are glissed up or down as shown. Chord 2 +400¢

3 Metal Sheets

Metal Bash

Sawing

Glass

cymbal, small tam-tam, and large metal sheet.
This combined sound is mixed with itself pitched one and two octaves lower.

tremolo markings indicate continuous sawing.

Glass breaking
(see very end of score for details)

2'04" 2'10" 2'15"

M E T A L

Strings

Chord 2

Electric Guitars

3 Metal Sheets

Metal Bash

Sawing

Glass

Metal Sheet & small tam-tam played together

2'20" 2'25" 2'30"

METAL

Strings

Electric Guitars

Metal Bash

Sawing

Glass

Bowed cymbals (in water)

Piano

Tremolo and gliss end on Chord 1A

All notes tremoloed

2'36" 2'41" 2'46"

METAL

Strings

Bottom of stave=Chord 1A. 1st space=Chord 1A +1200¢(1st natural harmonic)
2nd space=Chord 1A +1700¢(2nd natural harmonic).3rd space=Chord 1A +2400¢(3rd natural harmonic).

Electric guitars

Metal Bash

Sawing

Bowed Cymbals

Piano

2'51" decresc poco a poco 2'56" 3'01"

Musical score for Strings, Metal Bash, and Piano. The piano part includes instructions for harmonic layers: "all layers to 1st natural harmonic", "all layers to 2nd natural harmonic", and "all layers to 3rd natural harmonic". The piano part also features a bass clef with a sharp sign and a bass clef with a flat sign. Performance markers include two black double bars at 3'07", 3'12", and 3'17".

Strings

Metal Bash

Piano

all layers to 1st natural harmonic

all layers to 2nd natural harmonic

all layers to 3rd natural harmonic

3'07"

3'12"

3'17"

Musical score for Strings and Piano. The piano part has a bass clef with a sharp sign and a bass clef with a flat sign. A instruction "continue to hold ped. down" is shown with a bracket under the piano staff. A performance marker indicates a duration of 3'33".

Strings

Piano

continue to hold ped. down

3'33"

Piano 1

Una corda

Tres corda

Piano 2

Una corda

Tres corda

Piano 3

Una corda

Tres corda

8va basso sempre

4

Piano 1

Piano 2

Piano 3

Soft Metal

8va basso sempre

f subito

p subito

f subito

p subito

f subito

p subito

l.v.

Soft Metal=1 Gongayeng, 2 Gongsuwukan, 3 Kempeul, 2 Copper rings,
1 large metal sheet. Played softly with large soft mallets and
brought up to an even volume with the other sounds(i.e.-piano and Hard metal)
cresc poco a poco.....mp
56"

cresc poco a pocofff

Electric Guitars
Tremolo picking
Chord 3=Chord 1
+2400¢ Layers 7-18

Arrows indicate direction of string bends.

1'05"

Piano 1

Piano 2

Piano 3

Soft metal

Hard metal

Ped

8va basso sempre

J=108

J=135

1'19"

1'27"

1'30"

Hard metal=same instruments as soft metal, played loud with hard mallets, and brought down to an even volume with the other sounds.

Piano 1
Piano 2
Piano 3

8va

8va

8va

8va basso sempre

j=168

1'38" *1'40"* *cresc poco a poco*

1'50" *15va* *mp*

j=168(all parts)

Piano 1
Piano 2
Piano 3

8va

8va

8va basso sempre

Metal:
Bottom of stave=Slenthem
1st space=Sanon
2nd space=flanged metal poles.

Oboe
multiphonics

All multiphonics notated as:
Bottom of stave=lowest pitched multi.
1st space=2nd lowest pitched multi.
2nd space=2nd highest pitched multi.
3rd space=highest pitched multi.

Clarinet
multiphonics

cresc poco a poco.....f

1'58"

2'06"

2'11"

Picking tremolo, and arrow represents slow bend upwards.
 In each of the 1st 4 bars start with wrist mute and lift off over the duration of the bar. In the last bar double hand trills begin. The right hand finger plays the top note indicated and the left hand plays lower two notes-constant trill between all three notes.

Electric Guitars.

Stave is read as if it were in treble clef with the bottom of the stave being Chord 3. Therefore the bottom line would represent Chord 3 +200¢ (the distance of d to e note in treble clef). The bottom space would be chord 3 +300¢ (or the normal distance of d to f).

7

4 15va -

Piano 1

Piano 2

Piano 3

sua basso sempre

Metal

Oboe multis

Clarinet multis

Baritone Saxophone multis

Bassoon Multiphonics

2'16"

2'21"

2'26"

2'31"

2'36"

2'41"

Arrow means to play 2 notes, the 2nd note is on
another string and starts 200¢ lower than indicated tone.
Quickly bend this 2nd note in tune with notated note.

page 12

A handwritten musical score for a multi-instrument ensemble. The score consists of eight staves, each representing a different instrument or group of instruments. The instruments listed on the left are: Piano 1, Piano 3, Metal, Oboe multis, Clarinet multis, Baritone Sax multis, Bassoon multis, and a woodwind section represented by a series of eighth-note patterns. The score is divided into measures by vertical bar lines. In the first measure, there are several grace notes and slurs. In the second measure, arrows point from specific notes to other strings, indicating bending techniques. In the third measure, the bassoon multis staff shows a '8va basso sempre' instruction. In the fourth measure, the metal and oboe multis staves show sustained notes. In the fifth measure, the bassoon multis staff shows a 'stop notes of Slenthem one at a time' instruction. The score concludes with a final measure in the eighth staff. The page includes performance instructions and time markings.

Piano 1

Piano 3

8va basso sempre

Metal

Oboe multis

Clarinet multis

Baritone Sax multis

Bassoon multis

Asynchronous entry of layers

stop notes of Slenthem one at a time

2'46"

2'54"

3'01"

3'15"

Section C

page 13

J=50

Gongageng & Gongsu-sukan.

J=62

Kempeul

J=75

Slenthem

Long Metal poles

J=87

Sanon

J=100

Flanged metal poles

J=100

Oboe multis

J=100

Clarinet multis

J=100

Baritone sax multis

J=100

Bassoon multis

J=100

Piano 1

J=100

Piano 2

J=100

Piano 3

pp
0"pp cresc.....mf p cresc.....f ff decres.....p p cresc.....ff p
9" 19" 29" 39" 49"

Bowed cymbals, top of box=out of water,
bottom of box=1/2 submerged in water.

Gongageng & Gongsu Sukan.

Kempeul

Slenthem

Long Metal Poles

Sanon

Flanged Metal Poles

Oboe multis

Clarinet multis

Baritone Sax multis

Bassoon multis

Piano 1

Piano 2

Piano 3

8va basso sempre

continuo simile

DS-switch to playing with drum sticks

continuo simile DS

continuo simile DS

continuo simile DS

vib.

DS 9 Double Bass $\text{J}=92$

1st space= Chord 1 +1200¢ (1st natural harmonic. 2nd space=Chord 1 +1900¢ (2nd nat. harmonic) 3rd space=Chord 1 +2400¢ (3rd nat. harmonic).

expand range to cluster

Ped.

expand range to cluster

Ped.

expand range to cluster

Ped.

mp

mf

f

ff

58"

1'08"

1'18"

1'27"

1'37"

1'47"

Bowed Cymbals

page 15

(d=92)

Double Bass

Layer number which is raised to 3rd natural harmonic.

14 Flutes, on Chord 3.
Chord 3=Chord 2 +2400¢,
layers 1-14. (Chord 3
starts on middle C).
bottom of stave=Chord 3
1st space=Chord 3 +500¢
2nd space=Chord 3 +1200¢

Layer number which is lowered to 2nd natural harmonic.

Baritone
Sax
multis

Bassoon
multis

1'57"

p cresc poco a poco

2'15"

2' 27'

Doub^B Bass

Layer number which is lowered
to 1st natural harmonic.

Flu-

Layer number which is raised to Chord 3 +1200c

14 Recorders

14 Recorders on Chord 4, raised to Chord 4 +1200¢.
Chord 4=Chord 2 +2400¢, layers 3-16.
Chord 4 starts on F above middle C
Bottom of stave=Chord 4
1st space=Chord 4 +500¢
2nd space=Chord 4 +1200¢

Piano

piano 2

3

Piano

cresc poco a poco.....
2'30"

3'02'

3'08

11

3'15

3'28"

See beginning of score for tuning of piano.

Prepared piano 1-3=prepared with pieces of rubber weather stripping
and placed at the node point which produces the 1st natural harmonic.

page 16

Section D

J=126

Prepared Piano 1 *J=96.3*

Prepared Piano 2 *J=74.1*

Prepared Piano 3 *8va basso sempre*

0" ppp

8" p

16" mp

24" mf

Prepared Piano 1

Prepared Piano 2

Prepared Piano 3 *8va basso sempre*

Prepared Piano 4 *J=126*

Prepared Piano 5 *J=96.3*

Prepared Piano 6 *J=74.1*

Prepared Piano 4-6=prepared with screws and bolts.

32" f

41" cresc poco a poco

49" f

J=126 (all parts)

Prepared Piano 1

Prepared Piano 2

Prepared Piano 3 *8va basso sempre*

Prepared Piano 4

Prepared Piano 5

Prepared Piano 6

Ped

ff

1'05"

page 17

Prepared Piano 1

Tres corda

Prepared Piano 2

Tres corda

Prepared Piano 3

sue basso sempre
Tres corda

Prepared Piano 4

Tres corda

Prepared Piano 5

Tres corda

Prepared Piano 6

Tres corda

Bassoon multis

Baritone Sax multis

Oboe & Clarinet

1'24"

1'30"

1'35"

Prepared Piano 1
 Prepared Piano 2
 Prepared Piano 3
L'guna basso sempre
 Prepared Piano 4
 Prepared Piano 5
 Prepared Piano 6
 Bassoon multis
 Baritone Sax multis
 Oboe & Clarinet multis

126(all parts) page 18

1'41" 1'46" ff 1'52" 1'55"

Prepared Piano 1
 Prepared Piano 2
 Prepared Piano 3
 Prepared Piano 4
 Prepared Piano 5
 Prepared Piano 6
 Bassoon multis
 Baritone Sax multis
 Clarinet multis

Kempeul #2
Played softly
with large mallets.

2'04" 2'10" 2'15" 2'20" 2'27"

mf p ppp f

Section E

$J=104$

page 19

Soft metal

Hard metal

Strings

Electric Guitars

Soft metal=1 Gongayeng, 2 Gongswukan, 3 Kempeul, 2 Copper rings, 1 large metal sheet. Played softly with large soft mallets and brought up to an even volume with the other sounds. Begins with Kempeul #3 and with each new bar.

Hard metal=4 Kempeul, 1tam-tam, 2cymbals, large metal sheet and bowed cymbals. Played loud with hard mallets and brought down to an even volume with the other sounds. Begins with 3 Kempeul and with each new bar two more instruments added.

Strings=bowed strings, chord 1A, see page 1 of score for details.
Lines indicate gliss, n=normal sound p=ponticello.

0" 11" 20" 25"

Soft metal

Hard metal

Strings

Electric Guitars

Scrap Metal

Notation for double hand trills
See page 11 of score for explanation.

Scrap Metal=the 16 parts listed on page 1 of the score. Tremoloed for length of bars.

Strings +200¢

Strings +400¢

6 Metal Wheel Rims scraped with metal file.

fff

32" 40" 49" 1'00" 1'15"

page 20

Hand-drawn musical score for page 20, featuring six staves representing different instruments:

- Soft Metal:** Stave 1, top staff.
- Hard Metal:** Stave 2, second staff.
- Strings:** Stave 3, third staff. Includes dynamic markings *p*, *n*, and *p*.
- Electric guitars:** Stave 4, fourth staff. Includes dynamic markings *p* and *f*.
- Scrap Metal:** Stave 5, fifth staff.
- Wheel Rims:** Stave 6, bottom staff.

The score includes time signatures such as $\frac{15}{4}$, $\frac{2}{4}$, $\frac{10}{4}$, $\frac{2}{4}$, $\frac{7}{4}$, $\frac{2}{4}$, $\frac{5}{4}$, $\frac{2}{4}$, $\frac{4}{4}$, $\frac{2}{4}$, $\frac{3}{4}$, $\frac{2}{4}$, $\frac{1}{4}$, $\frac{2}{4}$, $\frac{1}{4}$, and $\frac{1}{4}$. Performance instructions include *200f* above the strings staff and arrows indicating specific playing techniques for electric guitars.

Time markers at the bottom of the score indicate measures 1'31", 1'41", 1'48", 1'54", 1'58", and 2'04".

Single bash on cymbal, small tam-tam and large metal sheet. This combined sound is mixed with itself pitched one and two octaves lower and played backwards.

4 layers of glass bottles

Stones dropped against large suspended metal sheet.

Coins dropped Broken glass dropped Stones dropped Coins dropped Broken glass dropped

cymbals removed from water

4 Bowed cymbals in water

cymbals 1/2 submerged in water

two cymbals end

Piano

tremolo on notes to 1st natural harmonic to 2nd natural harmonic to 3rd natural harmonic

Electric Guitars

11 electric guitars, each one tuned to a single note, (Chord 2 layers 8-18). As signal of each guitar turns into feedback nonlinear distortion or "fuzz" is added. Guitar layers begin to drop out

Single bash on cymbal, small tam-tam and large metal sheet.
This combined sound is mixed with itself pitched one and two octaves lower.

2'11"

decresc poco a poco 2'32"

2'37"

4 Layers of glass bottles

Piano

stop playing, hold pedal down

Stones dropped Coins dropped

cresc poco a poco f XXX

All four parts begin to wildly break bottles.
In total 200 bottles broken in the four bar duration.
Broken glass falls against metal surfaces consisting
of large metal sheets and cymbals.

Fine

End of composition.

2'43"

2'48"

2'56"

3'08"