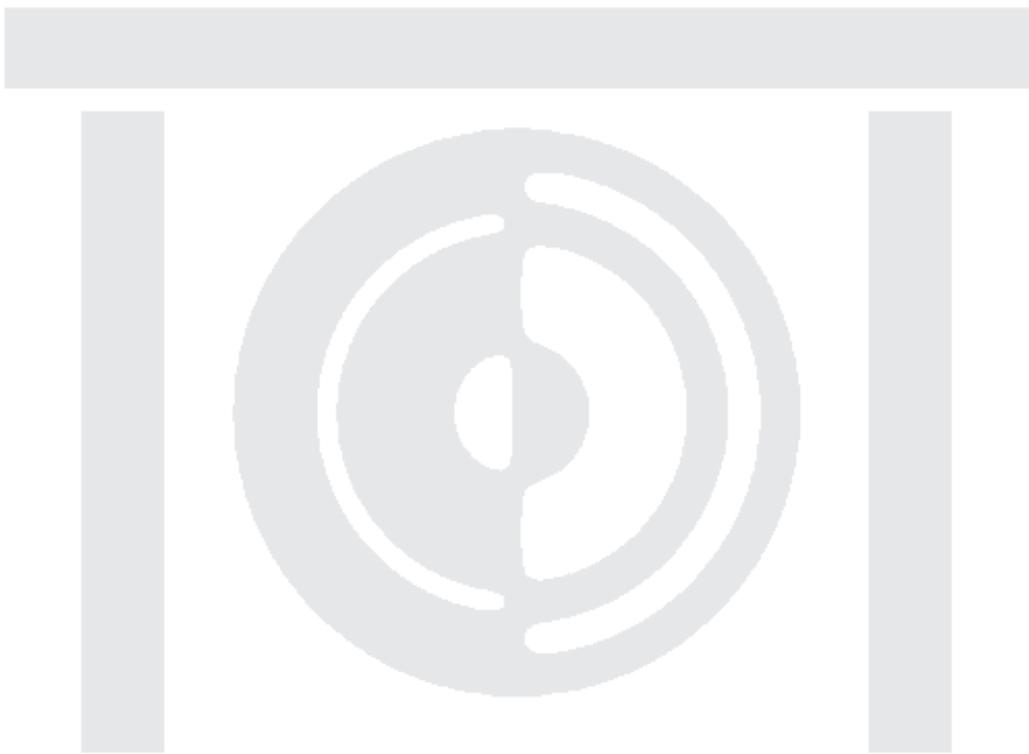


Gamelan Works Vol. 4
Seven pieces in mixed tuning: slendro and pelog

Barbara Benary



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Vol. 4

**Seven Pieces in Mixed Tuning
Slendro and Pelog**

SEVEN PIECES IN MIXED TUNING

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About the Tunings and Notation

This set of seven pieces was written between 1980 and 1994. Their common denominator is that they each require the simultaneous use of slendro and pelog tunings.

Generally each player plays a pair of instruments arranged as a double keyboard, although for a few pieces the tunings are kept apart and played by different persons.

In those pieces where process is the primary focus, the pitch relationships of the two tunings is less relevant. However a few of the pieces are pitch-specific, and meant to be played on a set of instruments whose tunings approximate those of Gamelan Son of Lion, for whom they were written. *Woodstock*, for example, is the piece which is most pitch-specific and represents one end of the spectrum. *Yudishthira's Quartet*, on the other end of the spectrum, is based on randomness and any pitches at all will do.

For all other pieces the primary necessity is that the general relationships of the two scales resemble that of the chart below. In sequence from lowest to highest the pitches should be: slendro 1, pelog 1, slendro 2, pelog 2, pelog 3, then slendro 3. Tumbuk 6 (common tone on both scales) is desirable, and in some pieces a second "tumbuk": slendro 5 = pelog 4. Diatonic approximations are given for Gamelan Son of Lion's tunings in the charts below, but the intervallic relationships of the slendro and pelog are more important than the range relationship to the diatonic models.

If the available gamelan set has pitch relationships other than these, consult the introduction to each individual piece to determine if it will work.

The following notations are in number (cipher) form. As they are not Indonesian pieces, the convention of end-beat stress is not used. Unless otherwise indicated, assume downbeats, as in western music. Standard staff notation is also included for obligato instruments.

The diagram shows four musical staves illustrating the relationship between Slendro and Pelog scales and their diatonic approximation.

- Top Staff:** Shows the Slendro scale (left) and Pelog scale (right) on a five-line staff. The Slendro scale is labeled "SLENDRO" and has notes with accidentals: b , b , b , b , b , b , b . Below it are the numbers 6, 1, 2, 3, 5, 6, i. The Pelog scale is labeled "pelog" and has notes with accidentals: \sharp , \sharp , \sharp , \sharp , \sharp , \sharp , \sharp . Below it are the numbers 1, 2, 3, 4, 5, 6, 7.
- Second Staff:** Labeled "PELOG", it shows a seven-note scale on a five-line staff with notes numbered 1 through 7.
- Third Staff:** Labeled "PIANO", it shows a diatonic approximation of the Pelog scale on a five-line staff with notes C, C \sharp , D, D \sharp , E, F, F \sharp , G, G \sharp , A, A \sharp , B, C, C \sharp .
- Bottom Staff:** Labeled "SLENDRO", it shows a seven-note scale on a five-line staff with notes numbered 1, 2, 3, 5, 6, i.

About the pieces

All of these pieces, including the apparently melodic ones, are written with some sort of process structure. In some cases this structure is specifically based on the juxtaposition of the two separate scales. In other pieces the pitches of the two scales are used in combination to make a tonal palate of 10 (5 slendro + 7 pelog, minus the two common tones).

Mostly Slendro Passacaglia

The passacaglia was composed as an entr'acte for **Karna: a Shadow Puppet Opera**. It is based on the five slendro pitches, with the addition of two borrowed from the pelog keyboard to act as passing tones. The piece follows a harmonic modulation of a cycle of fifths, forward then backward. The fifths however are the Javanese interval called kempyung (two notes separated by two others on the gender keyboard). The balungan instruments provide melodic counterpoint to the modulation. Two non-keyboard instruments (suling and clarinet) play obbligato lines.

Sharon (for Karen)

Here the slendro and pelog scales move in contrary directions to form a sequence of chords over which two violins (adjusting intonation to the gamelan) perform improvisation interrupted by breaks in which the two soloists improvise cadenza.

The piece was inspired by a gending (composition) with many suwuk (breaks) and andegan (solos) which I heard in a traditional gamelan concert in Sharon, Connecticut. Gamelan Son of Lion performed **Sharon** with violins played by myself and my guru-sister Karen Gilbert, hence the name.

Woodstock

The combined slendro and pelog scales include the pitches of two chords approximating the western Ab7 and Bb7. These chords are used in alternation as the underpinnings of the piece. The introductory and coda sections use the idea of scattered pitches falling together into clangs (or the reverse process), as inspired by the Javanese tradition of gamelan sekaten.

The piece was first drafted at Woodstock, N.Y. during a residency at Carl Berger's Creative Music Studio.

Imbal-Imbal and Sambal

had their origin in Gamelan Son of Lion's first project in group composition, titled after our commissioning patron **Gamelan N.E.A.** Each of four composers produced separate modules for the piece, and the ensemble members subsequently derived a serendipitous sequence.

My sections were named after the Javanese gamelan technique of interlocking performance, imbal-imbal, wherein two players alternate pitches on the same keyboard, although in this case the pairs of players use separate slendro and a pelog keyboards. Each section is binary: first the instruments of one tuning have the harmonic lead, then midway the other tuning takes over.

In the final form of **Gamelan N.E.A.** only two imbal sections were included. The third section proved unnecessary, and it went into the out-takes drawer where it remained for a decade until I took it out, spiced it up for **Sambal**, and presented it on its own.

Hells Bells

This piece uses English change-ringing as its basis. A sequence of number permutations is played first in a pentatonic pelog scale, modulating gradually to a pentatonic slendro then back by another route. In the course of eight repetitions the five note mode is systematically altered by substituting pitches of one tuning for pitches of the other.

There is no special significance to the title save that some of my ensemble reported that the concentration required to do an accurate rendition of the twenty minutes of changes was indeed hellish.

Yudishthira's Quartet

Slendro and pelog pitches mix in this study of randomness. The juxtaposition is that of man and machine. The same "instructions" of the score are simultaneously performed by a small gamelan group using thrown die to make its random decision, and by a musical computer programmed to do the same. The computer program by Nick Didkovsky for the Amiga in HMSL language is available on request.

It is named after Yudishthira, a hero of the Indian-Indonesian epic Mahabharata who compulsively gambled away his kingdom.

MOSTLY SLENDRO PASSACAGLIA

Orchestration and Notation:

For a minimum of 6 players: key-gongs (gong & kempul), slentem, two demung, one saron, one peking. Additions and substitutions: gender and/or gender panerus can substitute for the two demung players, or supplement them. An additional pair of saron may double the demung 1 line. Two obbligato parts are a desirable addition, but optional.

Each player uses a pair of like instruments in slendro and pelog. Since the piece is mostly slendro, it is suggested that the slendro keyboard be placed closest to the player and the pelog positioned behind it (rather like the black keys on a conventional keyboard). Saron 1 (solo player) will need two mallets.

Slendro and pelog parts are notated in a single line. Notes with a "p" above them are on the pelog keyboard; all others are slendro.

Obbligato parts:

Two melodic, non-keyboard instruments are required, preferably of different timbre and range. Gamelan Son of Lion used a suling and a custom-made slendro clarinet. A bowed string instrument could substitute (rebab or erh-hu for example).

A composed notation is provided for the obbligato lines. These are in western staff notation, following the pitch approximation chart in the introduction to this volume. Using these composed lines the piece has a finite length of four repeats (2A + 2B) plus coda. Gamelan moves to the coda (C) when the obbligato instruments are holding their final note.

If indeterminate length is desired, the obbligato players may instead improvise their lines, taking turns according to a pre-arranged sequence.

Length and sequence of sections:

The general formula for the piece is 2x (A) and 2x (B), and this sequence is repeated a pre-arranged number of times - four if the composed obligatos are used. The coda (C) is played only once.

Order of initial entry:

Staggered entrances throughout the first two (A) & (B) sections. First (A): slentem and demung 2. Second (A) add demung 1. First (B) add saron 1 doubling demung 1 line. Second (B) saron 1 moves to its solo line and peking enters.

On the repeat of the piece add keygongs and any other doubling instruments. Slentem may use its variation line ad lib. The clarinet obbligato enters at this point.

Gamelan provides a constant texture with no dynamic or tempo variations from here until the coda, where there is a moderate slowdown to the final gong.

MOSTLY SLENDRO PASSACAGLIA

(A)

<u>peking:</u>	6 2	3 5	6 3	5 $\dot{1}$	$\overset{p}{7}$ 6	5 3
<u>saron 1:</u>	6235	6235	6236	$\overset{p.p}{4176}$	$\overset{p.p}{4176}$	$\overset{p.p}{4176}$
<u>demung 1:</u>	6 $\overline{.6}$	6 6	6 $\dot{1}$	5 $\overline{.5}$	5 5	5 3
<u>demung 2:</u>	2 .	2 .	2 .	2 .	2 .	2 .
<u>slentem:</u>	2 .	. .	6 .	5 .	. .	$\overset{p}{7}$.
<u>slentem variation:</u>	2 .	. .	2 6	5 .	. 5	. $\overset{p}{7}$
<u>keygongs:</u>	② 6			5		

<u>peking:</u>	5 1	2 3	5 6	3 $\dot{1}$	6 5	3 2	3 5	6 6	$\overset{p}{3}$ 5
<u>saron 1:</u>	5123	5123	5125	3 $\dot{1}$ 65	3 $\dot{1}$ 65	3 $\dot{1}$ 65	$\overset{p}{3633}$	$\overset{p}{6633}$	$\overset{p}{6633}$
<u>demung 1:</u>	5 $\overline{.5}$	5 5	5 6	3 $\overline{.3}$	3 3	3 2	3 5	$\overset{p}{p3}$	. . $\overline{35}$
<u>demung 2:</u>	1 .	1 .	1 .	1 .	1 .	1 .	6 .	6 .	6 .
<u>slentem:</u>	. 1 .	1 .	5 .	3 .	. .	5 .	6 .	6 .	. .
<u>sl. var.:</u>	. 1 .	1 .	. 5	3 .	. 2	3 5	6 .	6 .	. .
<u>keygongs:</u>	. 1				3				6

(B)

<u>peking</u>	2 6	3 $\overset{p}{3}$	2 6	6 $\overset{p}{3}$	3 6	3 5	3 $\dot{1}$	6 5	3 $\dot{1}$
<u>saron 1:</u>	$\overset{p.p}{2633}$	$\overset{p.p}{2633}$	$\overset{p.p}{2633}$	$\overset{p.p}{6336}$	$\overset{p.p}{6336}$	$\overset{p}{6335}$	3 $\dot{1}$ 65	3 $\dot{1}$ 65	356 $\dot{1}$
<u>demung 1:</u>	6 $\overline{.6}$	6 6	6 $\overline{35}$	6 $\overline{.6}$	6 $\dot{1}$	7 6	1 $\overline{.1}$	1 5	6 $\dot{1}$
<u>demung 2:</u>	2 .	2 .	2 .	$\overset{p}{3}$.	$\overset{p}{3}$.	$\overset{p}{3}$.	3 .	3 .	3 .
<u>slentem</u>	2 .	. .	2 .	6 .	6 .	5 .	3 .	. .	3 .
<u>sl.var.</u>	2 .	. .	2 .	6 .	6 .	. 5	3 .	. .	$\overset{p}{3}$ 2
<u>keygongs</u>	② 6			6			3		

		to (B)	to (A) or (C)
<u>peking</u>	1 $\dot{1}$ 3 5 3 $\dot{1}$	2 $\dot{1}$ $\overset{p}{7}$ 5 3 $\overset{p}{3}$	2 $\dot{1}$ $\overset{p}{7}$ 5 3 5
<u>saron 1:</u>	1 $\dot{1}$ 35 $\overset{p}{3}$ 1 $\dot{1}$ 35 $\overset{p}{3}$ 1 $\dot{1}$ 35	$\overset{p}{2}$ 1 $\dot{7}$ 5 $\overset{p}{2}$ 1 $\dot{7}$ 5 $\overset{p}{3}$ 3 $\dot{2}$ 3	$\overset{p}{2}$ 1 $\dot{7}$ 5 $\overset{p}{2}$ 1 $\dot{7}$ 5 $\overset{p}{2}$ 3 $\dot{3}$ 5
<u>demung 1:</u>	7 5 $\dot{1}$. . $\dot{1}$	$\overset{p}{7}$ 2 $\overset{p}{7}$. . $\overline{65}$	$\overset{p}{7}$ 2 $\overset{p}{7}$. . $\overline{65}$
<u>demung 2:</u>	5 . 5 . 5 .	5 . 5 . 5 .	5 . 5 . 5 .
<u>slentem</u>	1 . $\dot{1}$. 6 .	5 . . . 3 $\overset{p}{3}$	5 . . . 3 $\overset{p}{3}$
<u>sl. var.</u>	1 . $\dot{1}$. . 6	5 . 2 5 3 $\overset{p}{3}$	5 . 2 5 3 $\overset{p}{3}$
<u>keygongs</u>	1	5	

(C)

<u>peking:</u>	6 2 3 5 6 3	5 $\dot{1}$ $\overset{p}{7}$ 6 5 3	5 1 2 3 5 6
<u>saron 1:</u>	6235 6235 6236	$\overset{p}{4}$ 1 $\dot{7}$ 6 $\overset{p}{4}$ 1 $\dot{7}$ 6 $\overset{p}{4}$ 1 $\dot{7}$ 6	5123 5123 5125
<u>demung 1:</u>	6 $\overline{.6}$ 6 6 6 $\dot{1}$	5 $\overline{.5}$ 5 5 5 3	5 $\overline{.5}$ 5 5 5 6
<u>demung 2:</u>	2 . 2 . 2 .	2 . 2 . 2 .	1 . 1 . 1 .
<u>slentem:</u>	2 . . . 6 .	5 . . . $\dot{7}$.	$\dot{1}$. 1 . . 5
<u>keygongs:</u>	② G	5	$\dot{1}$

			(all tremolo)
<u>peking:</u>	3 $\dot{1}$ 6 5 3 2	3 5 6 $\overset{p}{6}$ 3 $\overset{p}{3}$	. . 2 . . .
<u>saron 1:</u>	3 $\dot{1}$ 65 3 $\dot{1}$ 65 3 $\dot{1}$ 65	36 $\overset{p}{3}$ 3 $\overset{p}{6}$ 6 $\overset{p}{3}$ 3 $\overset{p}{6}$ 3 $\dot{3}$ 5	. . 6 . . 2 . . .
<u>demung 1:</u>	3 $\overline{.3}$ 3 3 3 2	3 5 $\overset{p}{3}$. 3 5	. . 6 . . .
<u>demung 2:</u>	1 . 1 . 1 .	$\overset{p}{6}$. $\overset{p}{6}$. $\overset{p}{6}$.	. . 2 . . .
<u>slentem:</u>	3 . . . 5 .	6 . $\overset{p}{6}$ . . .	. . 2 . . .
<u>keygongs:</u>	3	6	② G

ritard -----

Mostly Slendro Passacaglia - slendro suling

H: F = overblow 6
H: G^b = overblow 3
L = leg note

clarinet solo

A1 A2 B1 B2

(cue) suling solo A1

A2 B1 B2

A1 Duet

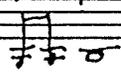
A2 B1

A1

Mostly Slendro Passacaglia — clarinet in slendro+

A handwritten musical score for clarinet in slendro+. The score is written on ten staves. The first staff begins with a treble clef, a key signature of two flats (Bb and Eb), and a 3/2 time signature. The music consists of various melodic lines, some with slurs and ties. Key markings include A¹, A², B¹, B², and A¹. There are also asterisks (*) and double asterisks (**). The notation includes eighth notes, quarter notes, and some triplets. The score ends with a double bar line.

*

note: if  is impossible, substitute

** or try

Handwritten musical notation for the footnote, showing a quarter note with a sharp sign, followed by a series of notes: a quarter note with a sharp sign, a quarter note with a natural sign, a quarter note with a sharp sign, a quarter note with a natural sign, and a quarter note with a sharp sign.

SHARON, for Karen

Barbara Benary

Jan. 1989

For combined slendro and pelog gamelan with the common pitch 6, accompanied by two violin obbligato.

Orchestration requires a minimum of two each (one slendro, one pelog) slentem, demung, saron, peking; gong agung, kempul 6, kenong 6 and kendang. Thus at least seven players are needed plus violinists. The saron and demung parts may also be doubled. Gambang is an optional addition. Two rebabs can be substituted for the violins.

The piece is in Javanese soft-style. It consists of a 35 note central melody (balungan) of two note chords repeated indeterminately. The balungan is interrupted by unexpected breaks (suwuk) and violin solos (andegan).

The model for the 35 note structure is a traditional Javanese method of measuring time which consists of two overlapping cycles of days, one a five-day cycle, the other a seven-day. Similarly the slendro scale is 5-tone and the pelog scale 7-tone. If both scales are played simulataneously, slendro ascending and pelog descending, they converge on a unison after 35 chords. The convergence is marked by a gong agung, and the convergence note is the common pitch 6.

The piece is broken into a number of sections. Each section's end is marked by a Javanese-style exaggerated slowdown and complete stop of the gamelan, cued of the violinist(s) and rhythmically directed by the drummer.

Each break (suwuk) is followed by a free-rhythm solo by a violinist (andegan), which may be treated as a classical cadenza. At the end of the cadenza, the soloist and drummer cue re-entry with an eight note pattern (buka).

Each new section begins on the balungan note following the one on which the gamelan stopped. The re-entry of the gamelan also signals a new variation in the violin obbligato. The piece should have a minimum of three sections (interrupted by two cadenza breaks) and a maximum of five (interrupted by four breaks). Each section should be at least a minute long. Except for the final variation, the suwuk stopping points should be at random places in the balungen, and not at the convergence note. The gong agung does not play at the beginning or end of breaks, but only at the convergence point.

The final cadenza and variation will be a violin duet. It will end, of course, at the converging 6 with a final gong agung.

The diagram shows two musical staves. The top staff is labeled 'SLENDRO' and contains notes 6, 1, 2, 3, 5, 6, and i. The bottom staff is labeled 'PELOG' and contains notes b, b, 4, b, 4, b, b, 4, b, 4, 6, 7. The notes are aligned vertically to show their relationship between the two scales.

VIOLINS:

Tuning:

Staff pitches in the violin part show the closest diatonic pitch to each slendro or pelog note, however the violinists must adjust their intonation to match the actual gamelan pitch. It is suggested that the violins be tuned in fifths with the D and A string corresponding to a fifth (kempyung) interval on the gamelan. Pelog 1 and 5 often works.

The "translation" of gamelan notes to the staff used in the violin part is as shown above. If your gamelan pitches differ considerably, it is suggested that a new staff score be generated to reflect the sound more accurately.

Rhythm and melody:

As a compromise between the western notational convention of downbeats and the Javanese convention of end beats, the violin score here included shows each balungan chord as a downbeat, but the gatra, the three note phrase leading to and including the next downbeat, is shown by the slur or phrase mark.

The violin parts are improvisatory within the limitation of the given pitches in each phrase. The whole notes indicate a place of rhythmic conjunction with the balungan. These notes are the tonal centers. The stemless quarter notes indicate the passing tones leading to the next balungan chord. The notes in any given phrase are in fact the pitches being played by the sarons; they provide the pitch material for the violinists' improvisation.

While the gamelan notes are of fixed length and every balungan chord is exactly a whole note, the black and white notes in the violin part are not fixed indicators of length. They may be played in any duration, in any octave and in any order. They may be repeated or skipped. Think of the black notes in the phrase as moving melodically toward the balungan note at the beginning of the next measure. But the violinist need not play each balungan note right on the downbeat either: these too may be prolonged, anticipated, delayed or even skipped so long as one keeps one's place.

The two parts:

The two lines of the violin score follow the slendro and pelog balungan notes respectively. The black passing tones in each part are a mixture of the two scales. The kenong and kempul notes which underscore the balungan pitch 6 in each line serve as place-markers, kenong for the upper line (slendro), kempul for the lower (pelog).

In all variations but the last, the two violins take turns. A "turn" should last roughly from five to ten measures. There may be some overlapping. But usually there should be measures of rest between one person's turn and the other's. A "turn" need not be nonstop melody, but can also include phrases and rests within the solo.

Each violinist may play either of the two parts. A switch may be made from one part to the other any time a violinist takes a new turn, if he so desires. The two violinists can be playing from the same part or different parts at any time.

The breaks and re-entries:

Either violinist may choose to end a section and do so by giving a visual cue to the kendang player during his turn, and following the kendang and gamelan in their slowdown.

The visual cue system should be arranged between violinists and kendang. I would suggest the cue of turning around. For example: to cue a break, the violinists turns to face the kendang on the balungan chord which is two measures (two balungan chords) before the desired stopping chord; the kendang player begins the slowdown on the chord after he sees the violinist turn, ending at the third chord. When not cueing, the violinists face the audience.

Whichever violinist has not been playing at the section's end becomes the one to play the andegan (cadenza), the following buka (re-entry pattern) and the beginning of the next section.

The andegan is a cadenza-like solo improvisation on the phrase following the note on which the gamelan has ended. That is to say, the gamelan will end on the pitches of the whole note at the beginning of a measure. The soloist then improvises on the succeeding three black notes plus the white note at the beginning of the next measure. This is but four notes, but they can be played anywhere in the violin's range and in any order. Other pitches may be borrowed too, so long as primary focus is on those four pitches.

To end the andegan and indicate the gamelan's re-entry, the violinist cues the drummer visually and then plays the buka, a re-entry pattern that sets up the rhythm for the gamelan. The suggested cue is: the violinist makes a rest at the cadenza end, turns to the kendang player just before beginning the buka, gives a nod.

The rhythmic pattern of the buka is always the same. Example:

The musical score consists of three staves. The top staff is for Violin Solo, the middle for Kendang, and the bottom for Balungan. The key signature has three flats (B-flat, E-flat, A-flat). The time signature is 4/4. The score is divided into four measures. Measure 1 is the 'ending note' (a whole note). Measure 2 is the 'cadenza phrase' (a quarter note followed by three eighth notes). Measure 3 is the 'buka' (a quarter note followed by three eighth notes). Measure 4 is the 'new section' (a whole note). The Violin Solo part is marked '(a tempo)'. The Kendang part shows rhythmic patterns with 'x' marks. The Balungan part shows chordal structures. Measure numbers 2, 3, and 4 are indicated at the bottom.

SLENTEM and DEMUNG:

Play the balungan part with no variation in rhythm (save as cued by drummer) or volume. If there is a shortage of players, one person can play the pelog part on both slentem and demung, and another can play both instruments in slendro. Similarly if the physical setup allows, a slentem player can handle the gong.

Slendro instruments in performing the ascending scale may read the 6 and 1 as being either high or low, ad lib. The scale can go:

6 1 2 3 5 6 1 2... or 6 1 2 3 5 6 1 2... etc.

SARON:

The saron pair plays an interlocking part at a tempo of 8 notes to 1 balungan note. The relationships are as follows:

s. balungan	6	1	2	3	5
p. balungan	6	5	4	3	2
s. saron	-	61-- 61--	12-- 12--	23-- 23--	35-- 35--
p. saron	6	--65 --65	--54 --54	--43 --43	--32 --32

As in the balungan, each slendro player is playing a continually ascending scale, but in sets of two notes. When you get to the top of the scale, jump down to the bottom, but be careful to avoid adding extra 6's or 1's when crossing octaves. Use either the low or high 1 and 6, but not both. Also, avoid the octave leap by using as a pair the 6 and 1 that are next to each other at either end of the keyboard, either the low pair or the high.

The pelog saron similarly plays a continually descending scale, but has no choice of octave.

When re-entering after a break, the saron pair must skip a set of notes. For example, given the line above, should the section end on the balungan pair 2/4 and the next section resume on 3/3:

balungan:	2	balungan	3	5
	4	resumed:	3	2
sarons:	12-- 12--	saron	-	35-- 35--
	--54 --54	resumed:	3	--32 --32

In the above example the pelog saron ended with the set 5 and 4, skipped 4 and 3, and resumed on the set 3 and 2.

PEKING / GAMBANG:

Peking part should appear intermittently. It can be added in alternate sections of the piece, or perhaps it can come in and out at alternate gongs. Gambang can also be used intermittently, following the peking part; this is an orchestral decision of the performers.

When it plays, the peking uses the same material as the saron, but at twice the speed. i.e.-

s. balungan	6			1			2										
p. balungan	6			5			4										
s. saron	-	6	1	-	-	6	1	-	-	1	2	-	-	1	2	-	-
p. saron	6	-	-	6	5	-	-	6	5	-	-	5	4	-	-	5	4
s. peking	-	61--61--		61--61--		12--12--		12--12--									
p. peking	6	--65--65		--65--65		--54--54		--54--54									

In negotiating the breaks, peking must also skip a set of pitches as did the saron. For example if the pelog peking ended with the set 5 and 4, it would skip the set 4 and 3, and resume with 3 and 2.

A NOTE ON DIFFERENTLY TUNED GAMELAN:

This score assumes a set of instruments whose pitches "translate" into something close to the chart given in the violin instructions above. It also assumes a set in which the slendro and pelog scales have a common tone of pitch 6. However the piece can be fairly transliterated to fit any set of instruments in which at least one pelog note matches one slendro note. The identity of the piece lies in its structure, not in any fixed interval relationship.

If your gamelan has more than one pair of common tones it does not matter. Only the one pair used as the convergence/gong note is relevant.

If your gamelan's common tone is other than 6, then this tone becomes the new convergence/gong note. The parts must then be rewritten. In the balungan, the slendro scale will still start on the convergence note and proceed upward. The pelog scale will proceed downward from the same point. All other parts will follow the balungan.

The violin parts can also be regenerated accordingly. The notes of each gatra in the upper line are the first two pelog saron notes of the set followed by the first two slendro saron notes, so that the second slendro note, the last of the phrase, becomes the whole note at the beginning of the next measure. The lower line is similarly generated, but here the two slendro saron notes of the set precede the two pelog notes.

The use of staff for the violin may be eliminated entirely if the violinists are sufficiently familiar with the gamelan's tuning. If they are not, it provides a reference point from which adjustments are made by ear. If your gamelan's pitches do not "translate" to nearest diatonic as given on the chart in this score, then feel free to re-notate the staff part to something closer.

SHARON ... violins and balungan

N. VLN

SL: 6 . . 6 1 . . 5 4 1 2 . . 4 3 2 3 . . 3 2 . . 5 6 . . 6 1 . .

PEL: . 6 5 . . . 5 4 . . . 4 3 . . . 3 2 . . . 2 1 . . . 1 7 . .

N. VLN

SL: 6 1 . . 6 . . 1 2 . . 4 2 3 4 . . 3 5 . . 4 0 . . 5 6 . . 4 0 . . 6 1 . .

PEL: 6 . . 6 5 . . . 5 4 . . . 4 3 . . . 3 2 . . . 2 1 . . . 1 7 . .

balungan

SL: 6 6 (G) 1 2 3 4 5 6 N

PEL: 6 6 5 4 3 2 1

7 8 9 10 11 12

1 . . 1 2 . . 2 3 . . 5 4 3 5 . . 5 6 . . 3 2 . . 1 2 . .

. 7 6 . . . 6 5 . . . 5 4 . . . 4 3 . . . 3 2 . . . 2 1 . .

N. VLN

7 1 2 . . 2 3 . . 3 5 . . 5 4 . . 5 6 . . 6 1 . . 4 0 (b) . . 4 0 (b) . .

. 7 . . 7 6 . . . 6 5 . . . 5 4 . . . 4 3 . . . 3 2 . . . 2 1 . .

balungan

1 2 3 5 6 N 4 0

7 6 P 5 4 3 2

13 14 15 16 17 18

2 . . 2 3 . . 3 5 . . 5 6 . . 6 1 . . 1 2 . . 2 3 . .

. 1 7 . . . 7 6 . . . 6 5 . . . 5 4 . . . 4 3 . . . 3 2 . .

N. VLN

4 0 4 0 . . 4 0 . . 4 0 . . 4 0 . . 4 0 . . 4 0 . . 4 0 . .

1 2 3 . . 3 5 . . 5 6 . . 6 1 . . 1 2 . . 2 3 . .

. 1 . . 1 7 . . . 7 6 . . . 6 5 . . . 5 4 . . . 4 3 . . . 3 2 . .

balungan

2 3 5 6 N 4 2 3

1 7 6 P 5 N 4 3

SHARON ... violins and balungan ... p. 2

Musical notation for measures 19-24. The system consists of three staves. The top staff is a treble clef with a key signature of two flats (Bb, Eb) and a common time signature. The middle staff is a treble clef with a key signature of two flats and a common time signature. The bottom staff is a bass clef with a key signature of two flats and a common time signature. Fingerings are indicated by numbers 1-5. Dynamics include 'N' (Normal) and 'P' (Piano). Measure numbers 19, 20, 21, 22, 23, and 24 are marked above the staves.

Musical notation for measures 25-30. The system consists of three staves. The top staff is a treble clef with a key signature of two flats and a common time signature. The middle staff is a treble clef with a key signature of two flats and a common time signature. The bottom staff is a bass clef with a key signature of two flats and a common time signature. Fingerings are indicated by numbers 1-5. Dynamics include 'N' (Normal) and 'P' (Piano). Measure numbers 25, 26, 27, 28, 29, and 30 are marked above the staves.

Musical notation for measures 31-35. The system consists of three staves. The top staff is a treble clef with a key signature of two flats and a common time signature. The middle staff is a treble clef with a key signature of two flats and a common time signature. The bottom staff is a bass clef with a key signature of two flats and a common time signature. Fingerings are indicated by numbers 1-5. Dynamics include 'N' (Normal) and 'P' (Piano). Measure numbers 31, 32, 33, 34, and 35 are marked above the staves.

SHARON, for Karen

balungan

staff measure #	2)	3)	4)	5)	6)	7)	8)
slendro	1	2	3	5	6	1	2
pelog	5	4	3	2	1	7	6
gongs					N		P

	9)	10)	11)	12)	13)	14)	15)
s	3	5	6	1	2	3	5
p	5	4	3	2	1	7	6
g			N				P

	16)	17)	18)	19)	20)	21)	22)
s	6	1	2	3	5	6	1
p	5	4	3	2	1	7	6
g	N					N	P

	23)	24)	25)	26)	27)	28)	29)
s	2	3	5	6	1	2	3
p	5	4	3	2	1	7	6
g				N			P

	30)	31)	32)	33)	34)	35)	1)
s	5	6	1	2	3	5	6
p	5	4	3	2	1	7	6
g		N					G

WOODSTOCK
1983

As with American Sacred Harp tunes, this piece was named for a place: the town in downstate New York where it was begun during a residency at Creative Music Studio. An object of the composition is to use the gamelan in an orchestral fashion, emphasizing contrasts of timbre and range, contrast between full group sound and solo, and contrast of harmony and deliberate heterophony.

Tuning

Woodstock is a pitch-specific piece wherein the pitch relationships of the combined slendro and pelog scales must correspond fairly closely with the chart of Gamelan Son of Lion's instruments provided in the introduction. The set of gamelan instruments needs to have two tumbuk (common) pitches: pelog 6 = slendro 6, pelog 4 = slendro 5. Also the slendro 3 must be noticeably higher in pitch than pelog 3. The intervals of the combined gamelan scale should give the approximate impression of a diatonic mode (see below). They need equate exactly, but if they are too far off base the piece will not sound as intended.

At the harmonic center of the piece are two seventh chords: Ab7 and Bb7. The former is slendro save for the borrowed pelog 7; the latter is all pelog notes:

Ab7 (slendro)	Bb7 (pelog)
Ab C Eb Gb	Bb D F Ab
5 7 2 3	6 1 3 4

These pitches combine to yield the mode of the piece:

Ab	Bb	C	D	Eb	F	Gb
s5	s6	p7	p1	s2	p3	s3
(or) p4	p6					

Instrumentation

From 9 to 13 players are required. Three serve as soloists: demung, saron and peking (extended range instrument - to high 3). Each uses a double keyboard of one slendro and one pelog instrument in the same range. The bonang part needs two players, one for slendro, one for pelog; their parts are sometimes interlocking. One or perhaps two players are needed for the kenong and kempul part. The remaining players (from three to six) play the balungan part, using all available pairs of metal keyboard instruments, including genders.

The kenong part is notated for the pitch sequence: s2, p3, s3, p4, 6, p7, high p1. An s or p is notated above the pitch 3's to distinguish them. Five kempul are needed: 4, 6, 7, high p1, and a small gong in the next octave notated as high 6. In the absence of the small gong, regular kempul 6 may be substituted.

Notation

The original parts of Woodstock are notated in red and black, but in the absence of two-color printing, the tunings are here notated on separate lines, the upper line slendro, the lower pelog. The two lines are read simultaneously. It is suggested that the pairs of instruments be arranged with pelog closer to the player and slendro behind, to approximate the visual relationship of the score.

Note that in the balungan part, pitch pelog 7 appears notated on the slendro line. This is because it is an honorary member of the slendro chord (2,3,5,p7) as opposed to the pelog chord (1,3,4,6). In the three solo melody parts, however, pitches are notated on the line corresponding to the correct keyboard, or, in the case of the tumbuk tones, on the more convenient keyboard.

The following score focuses on the solo parts with the balungan abbreviated to S and P for the successive slendro and pelog cluster chords accompanying the melodies. Following the score, separate parts are provided for the six balungan, kenong-kempul, bonang, and each solo instrument.

Some details of the rhythmic notation:

The image shows five examples of rhythmic notation. The first is a quarter note with a '2' above it and a '3' below it. The second is a quarter note with a '2' above it, a '3' below it, and a '5' below it. The third is a quarter note with a '2' above it, a '3' below it, and a '5' below it. The fourth is a quarter note with a '2' above it, a '3' below it, and a '5' below it. The fifth is a quarter note with a '2' above it, a '3' below it, and a '5' below it, with an 'x' above the '5' and a line connecting the '2' and '5'.

sustain 2 after damping 5

235
(3 in space of 4)

235
(3 in space of 2)

235356
(6 in space of 4)

Structure

Section I:

The two chords (Ab7 and Bb7) are presented in a succession of group clangs alternated with solos. The clangs begin rhythmically scattered, then move successively toward rhythmic unison. The "modes" of the two chords are elaborated in free rhythm by successive solo instruments. The model is the ancient Javanese Gamelan Sekaten music.

Each clang is notated as a pair of notes, written next to each other. However as the clangs converge, the pairs of notes are sounded more closely, and the fourth time are played in unison.

Section II:

The two chords in alternation provide the ground, over which are set melodic obbligatos for solo instruments in three octaves.

Section III:

The two chords converge in heterophonic tolling. Rhythmic unison carefully disintegrates and fades away.

WOODSTOCK - Score

Section I

	1st clang	1st solo
peking	27 -	
saron	23 -	$\overline{2}3 \ 5 \ | \ \overline{2}3 \ 5 \ \overline{2}3 \ | \ \overline{2}3 \ 5 \ 7 \ 7 \ \overline{5}3 \ 2 \ | \ \overline{1}^2 \ 3 \ |$
demung	23 -	<i>mp</i>
s bonang	32	
p bonang	74	
kenong	2	
kempul	4	
balungan	S <i>f</i>	
saron		$\overline{1}^2 \ 3 \ 5 \ \overline{2}3 \ \overline{2} \ | \ 2 \ 5 \ 3 \ \overline{3} \ | \ \overline{1}^2 \ 3 \ | \ \overline{1}^2 \ 5 \ 3 \ \overline{3} \ \overline{3}^2 \ |$
saron		$1 \ 3 \ 3 \ | \ \overline{1}^2 \ 5 \ 3 \ \overline{3} \ \overline{3}^2 \ \overline{1}^2 \ | \ 1 \ 3 \ 3 \ || \ \overline{1}^3 \ 5 \ 5 \ | \ 3 \ \overline{3}5 \ |$

	2nd clangs	2nd solo
peking	57 -	- 16
saron	75 -	- 14
demung	23 -	13
s bonang	52 -	
p bonang	- 34	
kenong	2	P 3
kempul	4	6
balungan	S <i>f</i>	P

	$\overbrace{65 \quad 7}^x$		$\overbrace{7 \quad 3}^x$		$\overbrace{1 \quad 6 \quad 7}^{mf}$	$\overbrace{4 \quad 3}^3$
	$\overbrace{46 \quad 1}^{mf}$	| 46	$\overbrace{1 \quad 3}^p$	|		

	4th clangs				4th solo			
peking	35	-	72	-				
	-	36	-	14				
saron	37	-	23	-				
	-	61	-	43				
demung	57	-	23	-				
	-	61	-	36				
s bonang	5		5					
	2	-	5	-				
p bonang		4		6	1	$\overset{\cdot}{3}$ $\overset{\cdot}{4}$	6	6
	-	3	-	1		$\overset{\cdot}{3}$ $\overset{\cdot}{4}$	6	4
kenong	7	6	4	$\overset{p}{3}$				
kempul	4	6	7	1				
balungan	S	P	S	P				

f

mf

BUKA: in rhythm beat = 156

s bonang			$\overset{\cdot}{2}$ $\overset{\cdot}{3}$ $\overset{\cdot}{5}$				$\overset{\cdot}{5}$. $\overset{\cdot}{5}$.
			5				
p bonang	$\overset{\cdot}{1}$ $\overset{\cdot}{3}$ $\overset{\cdot}{4}$ $\overset{\cdot}{6}$ $\overset{\cdot}{6}$	$\overset{\cdot}{1}$ $\overset{\cdot}{3}$ $\overset{\cdot}{4}$ $\overset{\cdot}{6}$ $\overset{\cdot}{6}$		$\overset{\cdot}{1}$ $\overset{\cdot}{6}$ $\overset{\cdot}{3}$	$\overset{\cdot}{4}$. $\overset{\cdot}{4}$.	$\overset{\cdot}{4}$. $\overset{\cdot}{4}$.	$\overset{\cdot}{6}$. $\overset{\cdot}{6}$.
					$\overset{\cdot}{4}$. $\overset{\cdot}{4}$.	$\overset{\cdot}{4}$. $\overset{\cdot}{4}$.	

mp

s bonang	$\overset{\cdot}{5}$. $\overset{\cdot}{5}$.	. 2 6 3	5 . 5 3	2 . 6 3	5 3 2 5
	3 . 3 .				
p bonang	6 6	. . . .	. . 4 6	7 1 3 .	4 7 . 7
	4 . 4 .				

f *mp*

s bonang	. 3 . 6	. . . .	3 . 2 .	2 . 3 .	2 . 2 .
p bonang	4 6 3 .	1 . . 3	...3...1.	.3.....3	...1...4... $\overset{\cdot}{4}$
kenong	. . . .	. . . .	. . . .	. . . .	. . . . 7 <i>f</i>

s bonang	$\begin{array}{c} \bar{3} \quad \bar{3} \\ 3 \quad . \quad 2 \quad . \end{array}$
p bonang	$\begin{array}{c} \bar{3} \quad \bar{1} \\ \dots 3 \dots 1. \end{array}$
kenong	$\begin{array}{c} s \quad p \\ 6 \quad 4 \quad 3 \quad 3 \end{array}$

Section II beat = 78

peking	7 . 1 .	2 . 4 .	3 . 6 .	5 . 6 .
saron	2 . 1 .	3 . 3 .	5 . 6 .	7 . 1 .
demung	2 . 4 .	3 . 3 .	7 . 6 .	2 . 1 .
sl.bonang	$\begin{array}{c} \bar{3} \quad \bar{2} \quad \bar{5} \quad \bar{6} \\ 2 \quad 3 \quad \bar{6} \quad \bar{5} \end{array}$	$\begin{array}{c} \bar{3} \quad \bar{2} \quad \bar{5} \quad \bar{6} \\ 2 \quad 3 \quad \bar{6} \quad \bar{5} \end{array}$	continue until (C)	
pel.bonang	$\begin{array}{c} \bar{4} \quad \bar{7} \quad \bar{1} \quad \bar{6} \\ 7 \quad \bar{4} \quad \bar{6} \quad 1 \end{array}$	$\begin{array}{c} \bar{4} \quad \bar{7} \quad \bar{1} \quad \bar{6} \\ 7 \quad \bar{4} \quad \bar{6} \quad 1 \end{array}$	continue until (C)	
kenong	2 . p 3 .	s 3 . 4 .	7 . 1 .	7 . 4 .
kempul	4 . . .	. . . .	. . 6 .	. . . .
balungan	S . P .	S . P .	S . P .	S . P .

f p

peking	7 . 1 .	2 . 3 .	3 . 6 .	7 . 1 .
saron	2 . 4 .	3 . 6 .	5 . 6 .	7 . 1 .
demung	3 . 3 .	5 . 6 .	7 . 1 .	2 . 4 .
kenong	s 3 . p 3 .	s 3 . 4 .	7 . 1 .	7 . 4 .
kempul	. . . .	. . . .	. . 6 .	. . . .
balungan	S . P .	S . P .	S . P .	S . P .

(A)

peking	7	. 1 .	2	. 3 .	3	. 6 .	7	. 1 .
saron	2	. 3 .	3	. 6 .	7	. 1	2	. 4 .
demung	2	53 2 3 1 3 <i>mp</i>	5	25 3 7 . 3.	35	67 6.	25 3 2 .7 3 1	
kenong	S 3	. 4 .	7	. 1 .	7	. 4 .	7	. 1 .
kempul	.	. . .	.	. 6 .	.	. . .	.	. 6 .
balungan	S	. P .	S	. P .	S	. P .	S	. P .

(B)

peking saron & demung	2	53 2 3 1 3 <i>mf</i>	5	25 3 7 . 3.	35	67 6.	25 3 2 .7 3 1	
kenong	7	. 1 .	7	. 4 .	7	. 1 .	7	. 4 .
kempul	.	. 6 .	.	. . .	.	. 6 .	.	. . .
balungan	S	. P . <i>mp</i>	S	. P .	S	. P .	S	. P .

peking saron & demung	2	53 3. 76 76	5	6 6 65 7 7 7	53 2 76 3 .1	2 5 . . .3 .6		
kenong	S 3	. 5 .	7	. 1 .	7	. 4 .	S 3	P 3 .
kempul	.	. . .	.	. 6 .	.	. . .	.	. . .
balungan	S	. P .	S	. P .	S	. P .	S	. P .

peking saron & demung	4.	3 . 36 46	.4 .6	3 2 3 1	2 32 3 3. 3	3 3 . 3	2 3 32 3 3 . 3	
kenong	S 3	. 5 .	7	. 1 .	7	. 4 .	S 3	P 3 .
kempul	.	. . .	.	. 6 .	.	. . .	.	. . .
balungan	S	. P .	S	. P .	S	. P .	S	. P .

(C)

peking	2 53 2 3 . 1 3	5 25 3 7 . 3.	.. 35 67 6.	.7 25 3 2 3 1
saron	2 53 2 3 . 1 3	2 53 2 3 . 1 3	5 25 3 7 . 3.	.. 35 67 6.
demung	2 53 2 3 . 1 3	52 53 2 3 1 3	2 53 2 3 . 3 1 3	5 2 5 3 7 3
s bonang	2 3 6 5 3 2 5 6	2 3 6 5 3 2 5 6	continue until (F)	
p bonang	7 4 6 1 4 7 1 6	7 4 6 1 4 7 1 6	continue until (F)	
kenong	2 . p 3 .	s 3 . 4 .	7 . 4 .	s 3 . p 3 .
kempul	4 . . .	. . . .	. . . .	. . . .
balungan	S . P .	S . P .	S . P .	S . P .

gradual crescendo mp to f at (E)

peking	2 53 3. 76. 76	5 6 6 65 7 7 7	53 2 76 3 .1	2 5 . . .3 .6
saron	.7 25 3 2 3 1	2 53 3. 76 76	5 6 6 65 7 7 7	53 2 76 3 .1
demung	.. 35 67 6.	.. 2 5 3 2 7 3 1	2 3 6 5 7 7	6 5 7 6 7 6
kenong	2 . p 3 .	s 3 . 4 .	s 3 . p 3 .	2 . p 3 .
kempul	4 . . .	. . . .	. . . .	4 . . .
balungan	S . P .	S . P .	S . P .	S . P .

peking	4. . 36 46	.4 .6 3 1	2 3 2 3 3 3 3. 3	2 3 3 3 2 3 3 . 3 3 1
saron	2 5 . . .3 .6	4. . 36 46	4 .6 3 1	2 3 2 3 3 3 3. 3
demung	5 3 3 2 3 3 1	2 5 . . .3 36	4. . 3 13	44 44 436 3
kenong	s . p 3 . 3 .	2 . p 3 .	2 . p 3 .	s . p 3 . 3 .
kempul	. . . .	4 . . .	4 . . .	. . . .
balungan	S . P .	S . P .	S . P .	S . P .

(D)

peking	23 47 64 63	35 2 3 4 31 3	52 32 6 1 34	74 7 16 43
saron	2 3 3 3 2 3 3 . 3 3 1	23 47 64 63	35 2 3 4 31 3	52 32 6 1 34
demung	2 32 3 3 3 . 3	2 3.53 2 3 3 1	2 3 4.7 6.4643	3 52 2 3 . .5 3 13.
kenong	2 . p 3 .	s . 4 . 3 .	s . p 3 . 3 .	2 . p 3 .
kempul	4 . . .	. . . .	. . . .	4 . . .
balungan	S . P .	S . P .	S . P .	S . P .

peking	2 3 3 4.7 6.7676	7.6767 6.7676	7.6767 6.7676	7.6767 6.7676
saron	74 7 16 43	2 3 3 467 6.7676	2 3 767676 1 3 46	4676.7 6767.6
demung	5 23 2 6 . 3 .13.4	7647. 1.64 3	2 3 3 467 6.7676	7647. 1.64 3
kenong	s . p 3 . 4 .	s . 4 . 7 .	s . p 3 . 3 .	2 . p 3 .
kempul	. . . .	. . . .	. . . .	4 . . .
balungan	S . P .	S . P .	S . P .	S . P .

(E)

peking	$\overline{7.6767}$ $\overline{6.7676}$	767677 64 ..3	$\overline{3}$	2 $\overline{2}$ $\overline{3}$ 2	$\overline{25}$ $\overline{3}$ 2 $\overline{26}$
saron	$\overline{7676.7}$ $\overline{6767.6}$	767677 64 ..3	$\overline{3}$	2 $\overline{2}$ $\overline{3}$ 2	$\overline{25}$ $\overline{3}$ 2 $\overline{26}$
demung	$\overline{2}$ $\overline{3}$ 3 467 $\overline{6.7676}$	767677 64 ..3	$\overline{3}$	2 $\overline{2}$ $\overline{3}$ 2	$\overline{25}$ $\overline{3}$ 2 $\overline{26}$
kenong	s 3 . 4 .	7 . 1 .	.	7 . 4 .	s p 3 . 3 .
kempul	. . . .	. . 3 .	.	. . . .	. . . .
balungan	S . P .	S . P .	.	S . P .	S . P .

f

(F)

peking	4..4..4..4..	4..4..4..4..	4..1..4..6..	4..6..1..3..
saron	4..4..4..4..	4..4..4..4..	4..1..3..6..	4..1..4..6..
demung	4..4..4..4..	4..4..4..4..	4..4..3..6..	4..1..3..6..
s bonang	$\overset{\cdot}{3}$ $\overset{\cdot}{2}$ $\overset{\cdot}{3}$ 2 3 2	$\overset{\cdot}{2}$ $\overset{\cdot}{3}$ $\overset{\cdot}{2}$ 3 2 3	(repeat until kempul cue)	
p bonang	$\overset{\cdot}{7}$ $\overset{\cdot}{7}$ $\overset{\cdot}{7}$ 4 4 4	$\overset{\cdot}{7}$ $\overset{\cdot}{7}$ $\overset{\cdot}{7}$ 4 4 4		
kenong	4 4 4	4 4 4	4 4 4	4 4 4
kempul	4 . .	. . .	. . .	. . .
balungan	S..S..S..S..	S..S..S..S..	S..S..S..S..	S..S..S..S..

peking	4..6..1..4..	4..3..6..1..	4..4..3..6..	4..1..3..6..
saron	4..6..1..3..	4..6..1..4..	4..3..6..1..	4..4..3..6..
demung	4..1..4..3..	4..6..1..3..	4..6..1..4..	4..3..6..1..
kenong	4 4 4	4 4 4	4 4 4	4 4 4
kempul	tacet until ready to give cue for section III			
balungan	S..S..S..S..	S..S..S..S..	S..S..S..S..	S..S..S..S..

All parts: Repeat and accelerando to beat = 120

Section III

Group clangs begin in unison. Initially the slentem player cues each clang, spacing them at at 3 to 4 second intervals. Over the course of several minutes the group very gradually diminuendos and at the same time scatters. Parts fall behind and ahead of the kempul; each players two notes begin to separate, until there is a constant sheet of small sounds just before the group reaches inaudibility.

Bonangs may place their notes in either or both octaves.

(G)

peking	7 2 p3 1 4 6	4 7 2 6 1 p3	s3 7 2 6 1 4	s3 4 7 p3 6 1	2 s3 7 4 p3 6	2 s3 4 1 p3 6
saron	2 s3 4 1 p3 6	7 2 p3 1 4 6	4 7 2 6 1 p3	s3 7 2 6 1 4	s3 4 7 p3 6 1	2 s3 7 4 p3 6
demung	2 s3 7 4 p3 6	2 s3 4 1 p3 6	7 2 p3 1 4 6	4 7 2 6 1 p3	s3 7 2 6 1 4	s3 4 7 p3 6 1
s bo	5 6 2	3 6 2	3 5 6	2 3 6	2 3 5	6 2 3
p bo	7 6 1 4	7 3 7 1	7 4 3 6	7 1 3 6	7 1 4 3	7 6 1 3
kenong	(random choice of any pitch in mode for each clang)					
kempul	4 4 4	4 4 4	4 4 4	4 4 4	4 4 4	4 4 4
bal	S S S P P P	S S S P P P	S S S P P P	S S S P P P	S S S P P P	S S S P P P

repeat ad lib

WOODSTOCK - balungan

Balungan instruments use the following notation as a chart for the entire piece, read in a different way for every section.

The six balungan parts are in fact the same line read in canon. The solo players sometimes play balungan as well; they are assigned to lines D, E and F. The three balungan players use parts A, B and C; if there are an additional three balungan players, they double parts D, E and F.

Section I: Opening Clangs

Group clangs are very loud, proceeding from quite scattered to unison. They are spaced and interrupted as follows:

1. One clang: first slendro note, loud and scattered.
Tacet through demung solo.
2. Two clangs: second measure, one slendro note followed by one pelog one. Slightly less scattered.
Tacet through saron solo.
3. Three clangs: third measure, first three notes, closer to unison.
Tacet through peking solo.
4. Four clangs: fourth measure, first four notes, nearly unison.
Tacet through bonang duet

Section II: Slendro/Pelog Alternation

Balungan notes form a stately processional of alternating chords over which the three soloists play melody, first in unison then in canon.

Kenong buka leads into this section:

kenong	. . . 7	6 4 3 3	^s ^p	s			
balungan	. . . .	. . . .	S . . .	P . . .	S . . .	(etc)	

S and P represent the successive slendro and pelog notes. The first note of this section is loud, then drop back to a mezzopiano dynamic and continue to read from beginning of line to end, repeating. The group dynamic gradually builds to forte over the course of three repeats.

At the fourth measure of the third repeat, the kempul player will cue letter (F). At this point balungan doubles tempo and plays slendro notes only. Continue to repeat the slendro line until cued again by kempul.

WOODSTOCK - Peking

Section I: Opening Clangs

Group clangs are very loud. They are spaced and interrupted by solos. As they recur, they proceed from very scattered (1st time separate the two notes) to nearly unison (4th time play the two notes together).

1st clang	1st solo	2nd clangs	2nd solo
$\begin{array}{c} 27 \\ - \\ f \end{array}$	(saron solo - tacet)	$\begin{array}{c} 57 - \\ - 16 \\ f \end{array}$	(demung solo - tacet)

3rd clangs	3rd solo
$\begin{array}{c} 37 - 23 \\ - 61 - \\ f \end{array}$	$5 \ 5 \ 5 \ 5 \ 5 \ 5 \ 2\bar{3}5 \ 2\bar{3}5 \ 2\bar{3}5 \ 6 \ 6 \ 6 \ \bar{5}3 \ 5$ <i>mf</i>

$(s) \ \dot{2} \ \dot{2} \ 7 \ 3\bar{5}\bar{6} \ 6 \ 6 \ 6 \ \bar{2}1 \ 2 \ 2 \ 2$	$\dot{2} \ \dot{3} \ \dot{3} \ \dot{2} \ \bar{7}6$	$\bar{7}6 \ \bar{5}3$	$\bar{7}6 \ \bar{5}3$
--	--	-----------------------	-----------------------

$\bar{7}6 \ \bar{7}6 \ \bar{5}3 \ \dot{3} \ \dot{3} \ \dot{3}$	$\dot{2} \ 2 \ 7 \ 3 \ 6 \ 2 \ 5 \ 6$	$\underset{3 \ 1}{6 \ 6 \ 6 \ \bar{3}}$	$\bar{3} \ 3 \ 1 \ 4 \ 6 \ 6 \ 6$
--	---------------------------------------	---	-----------------------------------

$1 \ \bar{3}4 \ 6 \ 6 \ 6 \ 2 \ \bar{3}5 \ 2 \ \bar{3}5 \ 6 \ 6 \ \bar{3}$	$3 \ 1 \ 1 \ 1 \ 11111$	<p style="text-align: center;">4th clangs</p> $\begin{array}{c} 35 - 72 - \\ - 36 - 14 \end{array}$
--	-------------------------	---

4th solo	Cue for Section II:
$(\text{bonang solo} \\ -\text{tacet})$	$\text{kenong} \ \dots \ 7 \ 6 \ 4 \ \overset{s}{3} \ \overset{p}{3}$

Section II

peking	$7 \ . \ 1 \ .$ <i>f</i> <i>p</i>	$2 \ . \ 4 \ .$	$3 \ . \ 6 \ .$	$5 \ . \ 6 \ .$
	$7 \ . \ 1 \ .$	$2 \ . \ 3 \ .$	$3 \ . \ 6 \ .$	$7 \ . \ 1 \ .$

(A)

peking | 7 . 1 . | 2 . 3 . | 3 . 6 . | 7 . 1 . |

* A

(B)

peking
saron &
demung | .. 53 2 3 | 5 25 3 | .. 35 | 25 3 2 |

1 3 | 7 . 3. | 67 6. | 7 3 1 |

mf

| 2 53 | 5 6 6 65 | 53 2 | 2 5 | 3 36 46 |

| 3. 76 76 | 7 7 7 | 76 3 .1 | . . .3 .6 | 4. . 36 46 |

| .4 .6 3 2 | 2 32 3 | 2 3 32 3 |

| .4 .6 3 1 | 3 3. 3 | 3 . 3 |

(C)

peking | 2 53 2 3 | 5 25 3 | .. 35 | 25 3 2 |

. 1 3 | 7 . 3. | .. 67 6. | .7 3 1 |

| 2 53 | 5 6 6 65 | 53 2 | 2 5 | 3 36 46 |

| 3. 76 76 | 7 7 7 | 76 3 .1 | . . .3 .6 | 4. . 36 46 |

(D)

| .4 .6 3 2 | 2 3 2 3 | 2 3 3 2 | 23 |

| .4 .6 3 1 | 3 3 3 3. 3 | 3 3 . 3 3 1 | 47 64 63 |

triplets

| 35 2 3 | 52 32 6 | 74 7 2 | 2 3 |

| 4 31 3 | 1 34 | 16 43 | 3 4.7 6.7 676 |

| 7.6 767 6.7 676 | 7.6 767 6.7 676 | 7.6 767 6.7 676 | 7.6 767 6.7 676 |

(E)

peking	$\overline{7676}$ 77 64 $\overline{3}$..3	2 $\overline{2}$ $\overline{3}$ 2	$\overline{25}$ $\overline{3}$ 2 $\overline{26}$
		1 3.. ..3 1	.. ..3 1 ..

(F)

peking	$\overline{4..4..4..4..}$	$\overline{4..4..4..4..}$	$\overline{4..1..4..6..}$	$\overline{4..6..1..3..}$
--------	---------------------------	---------------------------	---------------------------	---------------------------

peking	$\overline{4..6..1..4..}$	$\overline{4..3..6..1..}$	$\overline{4..4..3..6..}$	$\overline{4..1..3..6..}$
--------	---------------------------	---------------------------	---------------------------	---------------------------

All parts: Repeat and accelerando to beat = 120

Section III

Group clangs begin in unison. Initially the slentem player cues each clang, spacing them at at 3 to 4 second intervals. Over the course of several minutes the group very gradually diminuendos and at the same time scatters. Parts fall behind and ahead of the kempul; each players two notes begin to separate, until there is a constant sheet of small sounds just before the group reaches inaudibility.

Bonangs may place their notes in either or both octaves.

(G)

peking	$\overline{7}$ 2 p3	4 7 2	s3 7 2	s3 4 7	2 s3 7	2 s3 4
	1 4 6	6 1 p3	6 1 4	p3 6 1	4 p3 6	1 p3 6

repeat ad lib

WOODSTOCK - Saron

Section I: Opening Clangs

Group clangs are very loud. They are spaced and interrupted by solos. As they recur, they proceed from very scattered (1st time separate the two notes) to nearly unison (4th time play the two notes together).

1st clang 1st solo

23 - <i>f</i>	$\bar{2}3$ 5 <i>mp</i>	$\bar{2}3$ 5 $\bar{2}3$	$\bar{2}3$ 5 7 7 $\bar{5}3$ 2	$\bar{1}^2$ 3	$\bar{1}^2$ 3 5 $\bar{2}3$ $\bar{2}$ 1
---------------------	---------------------------	-------------------------	-------------------------------	---------------	---

2 5 3 $\bar{3}$	$\bar{1}^2$ 3	$\bar{1}^2$ 5 3 $\bar{3}$ $\bar{3}$ 2	1 3 3	$\bar{1}^2$ 5 3 $\bar{3}$ $\bar{3}$ $\bar{1}^2$
-----------------	---------------	---------------------------------------	-------	---

2nd clangs 2nd solo

1 3 3	$\bar{1}^3$ 5 5	$\bar{3}$ 5	75 - - 14	(demung solo - tacet)
-------	-----------------	-------------	--------------	-----------------------

3rd clangs

3rd solo

4th clangs

4th solo

57 - 23 - 61 -	(peking solo - tacet)	37 - 23 - - 61 - 43	(bonang solo - tacet)
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Cue for Section II:

kenong	. . . 7	6 4 3 3	$\overset{s}{3}$ $\overset{p}{3}$
--------	---------	---------	-----------------------------------

Section II

saron	2 . 1 . <i>f</i> <i>p</i>	3 . 3 .	5 . 6	7 . 1 .
-------	------------------------------	---------	-------	---------

saron	2 . 4 .	3 . 6 .	5 . 6	7 . 1 .
-------	---------	---------	-------	---------

(A)

saron	2 . 3 .	3 . 6 .	7 . 1	2 . 4 .
-------	---------	---------	-------	---------

(B)

peking
saron &
demung

| 2	53	2	3	| 5	25	3	| ..	35	67	6.	| .7	25	3	2	|	
| .		1	3	| 7		. 3.	| ..				| .7		3	1	|	
| 2	53			| 5	6	6	65	| 76	53	2	| 2	5			|	
| 3.	76		76	| 7	7	7		| 76		3 .1	| .		. 3 .6	| 4.	. 36 46	|
| .4	.6	3	2	| 2	32		3	| 2	3	32	3	|				|
| .4	.6	3	1	| 3		3.	3	| 3			3	|				|

(C)

saron

| 2	53	2	3	| 2	53	2	3	| 5	25	3	| ..	35	67	6.	|		
| .		1	3	| .		1	3	| 7		. 3.	| ..				|		
| .7	25	3	2	| 2	53			| 5	6	6	65	| 76	53	2	|		
| .7		3	1	| 3.	76		76	| 7	7	7		| 76		3 .1	| .	. 3 .6	|

(D)

| 4.	. 3	36	46	| .4	.6	3	2	| 2	<u>3</u>	<u>2</u>	3	| <u>2</u>	3	<u>3</u>	<u>3</u>	2	|	
| 4.				| .4	.6	3	1	| 3	3	3.	3	| 3	3		3	3	1	|
| 23				| 35	2		3	| 52	32	6		| 74	7	2		16	43	|
| 47	64	63		| 4	31	3		| 1	34			| 74	7	16	43			|

(triplets)

| <u>2</u>	<u>3</u>	<u>467</u>	<u>6.7</u>	<u>676</u>	| <u>767</u>	<u>676</u>	<u>1</u>	<u>3</u>	<u>46</u>	| <u>467</u>	<u>6.7</u>	<u>676</u>	<u>7.6</u>	| <u>767</u>	<u>6.7</u>	<u>676</u>	<u>7.6</u>	|
| 2	3	467	6.7	676	| 767	676	1	3	46	| 467	6.7	676	7.6	| 767	6.7	676	7.6	|

(E)

| <u>7676</u>	<u>77</u>	<u>64</u>	<u>..3</u>	| 2	<u>2</u>	<u>3</u>	2	| <u>25</u>	<u>3</u>	2	<u>26</u>	||
| 7676	77	64	..3	| 1	3..	..3	1	| ..	..3	1	..	||

(F)

| <u>4..4..4..4..</u>	| <u>4..4..4..4..</u>	|| <u>4..1..3..6..</u>	| <u>4..1..4..6..</u>	|
| <u>4..6..1..3..</u>	| <u>4..6..1..4..</u>	|| <u>4..3..6..1..</u>	| <u>4..4..3..6..</u>	||

Repeat and accelerando to beat = 120

Section III

Group clangs begin in unison. Initially the slentem player cues each clang, spacing them at at 3 to 4 second intervals. Over the course of several minutes the group very gradually diminuendos and at the same time scatters. Parts fall behind and ahead of the kempul; each players two notes begin to separate, until there is a constant sheet of small sounds just before the group reaches inaudibility.

Bonangs may place their notes in either or both octaves.

(G)

saron { 2 s3 4 | 7 2 p3 | 4 7 2 | s3 7 2 | s3 4 7 | 2 s3 7 }
1 p3 6 | 1 4 6 | 6 1 p3 | 6 1 4 | p3 6 1 | 4 p3 6 }

repeat ad lib

WOODSTOCK - Demung

Section I: Opening Clangs

Group clangs are very loud. They are spaced and interrupted by solos. As they recur, they proceed from very scattered (1st time separate the two notes) to nearly unison (4th time play the two notes together).

<p>1st clang</p> <table border="1" style="border-collapse: collapse; width: 50px; height: 40px;"> <tr><td>23</td></tr> <tr><td>-</td></tr> </table>	23	-	<p>1st solo</p> <p>(saron solo, tacet)</p>	<p>2nd clangs</p> <table border="1" style="border-collapse: collapse; width: 100px; height: 40px;"> <tr><td>23 -</td></tr> <tr><td>- 13</td></tr> </table>	23 -	- 13																																																													
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23 -																																																																			
- 13																																																																			
<p>2nd solo</p> <table border="0" style="width: 100%;"> <tr> <td style="text-align: center; vertical-align: middle;"> <table border="1" style="border-collapse: collapse; width: 80px; height: 40px;"> <tr><td>65</td><td>7</td></tr> <tr><td>46</td><td>1</td></tr> </table> <p><i>mf</i></p> </td> <td style="text-align: center; vertical-align: middle;"> <table border="1" style="border-collapse: collapse; width: 120px; height: 40px;"> <tr><td>46</td><td>7</td><td>3</td></tr> <tr><td>1</td><td>3</td><td>x</td></tr> </table> <p><i>p</i></p> </td> <td style="text-align: center; vertical-align: middle;"> <table border="1" style="border-collapse: collapse; width: 120px; height: 40px;"> <tr><td>1</td><td>6</td><td>7</td><td>4</td><td>3</td></tr> <tr><td></td><td></td><td></td><td></td><td>3</td></tr> </table> <p><i>mf</i></p> </td> <td style="text-align: center; vertical-align: middle;"> <table border="1" style="border-collapse: collapse; width: 80px; height: 40px;"> <tr><td>3</td><td>1</td></tr> <tr><td></td><td></td></tr> </table> <p><i>mp</i></p> </td> </tr> <tr> <td style="text-align: center; vertical-align: middle;"> <table border="1" style="border-collapse: collapse; width: 80px; height: 40px;"> <tr><td>3</td><td>1</td><td>3</td></tr> <tr><td></td><td></td><td></td></tr> </table> </td> <td style="text-align: center; vertical-align: middle;"> <table border="1" style="border-collapse: collapse; width: 120px; height: 40px;"> <tr><td>1</td><td>2</td><td>5</td><td>3</td></tr> <tr><td></td><td>3</td><td>6</td><td></td></tr> </table> </td> <td style="text-align: center; vertical-align: middle;"> <table border="1" style="border-collapse: collapse; width: 120px; height: 40px;"> <tr><td>3</td><td>5</td><td>3</td><td>1</td></tr> <tr><td></td><td>6</td><td></td><td></td></tr> </table> </td> <td style="text-align: center; vertical-align: middle;"> <table border="1" style="border-collapse: collapse; width: 80px; height: 40px;"> <tr><td>5</td><td>6</td><td>7</td></tr> <tr><td></td><td></td><td></td></tr> </table> </td> <td style="text-align: center; vertical-align: middle;"> <table border="1" style="border-collapse: collapse; width: 120px; height: 40px;"> <tr><td>5</td><td>23</td></tr> <tr><td>6</td><td>7</td></tr> </table> <p><i>f</i></p> </td> </tr> </table>			<table border="1" style="border-collapse: collapse; width: 80px; height: 40px;"> <tr><td>65</td><td>7</td></tr> <tr><td>46</td><td>1</td></tr> </table> <p><i>mf</i></p>	65	7	46	1	<table border="1" style="border-collapse: collapse; width: 120px; height: 40px;"> <tr><td>46</td><td>7</td><td>3</td></tr> <tr><td>1</td><td>3</td><td>x</td></tr> </table> <p><i>p</i></p>	46	7	3	1	3	x	<table border="1" style="border-collapse: collapse; width: 120px; height: 40px;"> <tr><td>1</td><td>6</td><td>7</td><td>4</td><td>3</td></tr> <tr><td></td><td></td><td></td><td></td><td>3</td></tr> </table> <p><i>mf</i></p>	1	6	7	4	3					3	<table border="1" style="border-collapse: collapse; width: 80px; height: 40px;"> <tr><td>3</td><td>1</td></tr> <tr><td></td><td></td></tr> </table> <p><i>mp</i></p>	3	1			<table border="1" style="border-collapse: collapse; width: 80px; height: 40px;"> <tr><td>3</td><td>1</td><td>3</td></tr> <tr><td></td><td></td><td></td></tr> </table>	3	1	3				<table border="1" style="border-collapse: collapse; width: 120px; height: 40px;"> <tr><td>1</td><td>2</td><td>5</td><td>3</td></tr> <tr><td></td><td>3</td><td>6</td><td></td></tr> </table>	1	2	5	3		3	6		<table border="1" style="border-collapse: collapse; width: 120px; height: 40px;"> <tr><td>3</td><td>5</td><td>3</td><td>1</td></tr> <tr><td></td><td>6</td><td></td><td></td></tr> </table>	3	5	3	1		6			<table border="1" style="border-collapse: collapse; width: 80px; height: 40px;"> <tr><td>5</td><td>6</td><td>7</td></tr> <tr><td></td><td></td><td></td></tr> </table>	5	6	7				<table border="1" style="border-collapse: collapse; width: 120px; height: 40px;"> <tr><td>5</td><td>23</td></tr> <tr><td>6</td><td>7</td></tr> </table> <p><i>f</i></p>	5	23	6	7
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5	23																																																																		
6	7																																																																		
<p>3rd clangs</p> <table border="1" style="border-collapse: collapse; width: 150px; height: 40px;"> <tr><td>72 - 34</td></tr> <tr><td>- 14 -</td></tr> </table>	72 - 34	- 14 -	<p>3rd solo</p> <p>(peking solo - tacet)</p>	<p>4th clangs</p> <table border="1" style="border-collapse: collapse; width: 150px; height: 40px;"> <tr><td>57 - 23 -</td></tr> <tr><td>- 61 - 36</td></tr> </table>	57 - 23 -	- 61 - 36	<p>4th solo</p> <p>(bonang solo - tacet)</p>																																																												
72 - 34																																																																			
- 14 -																																																																			
57 - 23 -																																																																			
- 61 - 36																																																																			

Cue for Section II:

kenong	. . . 7	6 4	^s 3	^p 3
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Section II

demung	<table border="1" style="border-collapse: collapse; width: 100px; height: 40px;"> <tr><td>2</td></tr> <tr><td>. 4 .</td></tr> </table> <p><i>f</i> <i>p</i></p>	2	. 4 .	<table border="1" style="border-collapse: collapse; width: 100px; height: 40px;"> <tr><td>3</td></tr> <tr><td>. 3 .</td></tr> </table>	3	. 3 .	<table border="1" style="border-collapse: collapse; width: 100px; height: 40px;"> <tr><td>7</td></tr> <tr><td>. 6 .</td></tr> </table>	7	. 6 .	<table border="1" style="border-collapse: collapse; width: 100px; height: 40px;"> <tr><td>2</td></tr> <tr><td>. 1 .</td></tr> </table>	2	. 1 .
2												
. 4 .												
3												
. 3 .												
7												
. 6 .												
2												
. 1 .												

(A)

2	53	2	3	5	25	3	..	35	67	6.	.7	25	3	2
.	1	3	.	7	.	3.	.	.	.	.	.	3	1	.

(B)

peking saron & demung	2	53	2	3	5	25	3	..	35	67	6.	.7	25	3	2
.	.	1	3	.	7	.	3.	.	.	.	.	.	3	1	.

peking
saron &
demung

| 2 53 | 5 6 6 65 | 53 2 | 2 5 |
| 3. 76 76 | 7 7 7 | 76 3 .1 | . . .3 .6 |

| 4. 3 | 4. 6 3 2 | 2 32 3 | 2 3 32 3 |
| 36 46 | .4 .6 3 1 | 3 3. 3 | 3 . 3 |

(C)

demung

| 2 53 2 3 | 52 53 2 3 | 2 53 2 3 | 5 2 5 3 |
| . 1 3 | 1 3 | . 3 1 3 | 7 3 |

| .. 35 67 6. | .. 2 5 3 2 | 2 3 6 5 | 6 5 7 6 7 6 | 5 3 3 2 |
| .. 7 3 1 | 7 7 | 7 7 | 7 6 7 6 | 3 3 1 |

| 2 5 | 4. 53 2 | 44 44 436 53 | (D) 2 32 3 3 |
| . . .3 36 | 4. .. 3 13 | 44 44 436 53 3 | 3 3. 3 |

| 2 3 3..5 3 2 | 2 3 4.7 6.4 643 | 3 5 2 2 3 | 5 2 3 2 6 |
| 3 3 3 1 | 3 4.7 6.4 643 | . . 5 3 1 3. | . 3 .1 3.4 |

| 764 7. 1.6 4 3 | 2 3 467 6.7 676 | 764 7. 1.6 4 3 | 23 3 467 6.7 676 |

(E)

| 7676 77 64 ..3 | 2 2 3 2 | 25 3 2 26 |
| 1 3.. ..3 1 |3 1 .. |

(F)

| 4..4..4..4.. | 4..4..4..4.. | 4..4..3..6.. | 4..1..3..6.. |

| 4..1..4..3.. | 4..6..1..3.. | 4..6..1..4.. | 4..3..6..1.. |

Repeat and accelerando to beat = 120

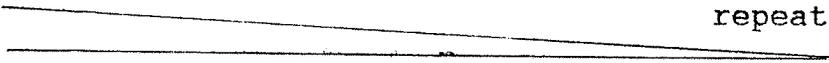
Section III

Group clangs begin in unison. Initially the slentem player cues each clang, spacing them at at 3 to 4 second intervals. Over the course of several minutes the group very gradually diminuendos and at the same time scatters. Parts fall behind and ahead of the kempul; each players two notes begin to separate, until there is a constant sheet of small sounds just before the group reaches inaudibility.

(G)

demung	2 s3 7	2 s3 4	7 2 p3	4 7 2	s3 7 2	s3 4 7
	4 p3 6	1 p3 6	1 4 6	6 1 p3	6 1 4	p3 6 1

repeat ad lib



WOODSTOCK - Bonang

Section I: Opening Clangs

Group clangs are very loud. They are spaced and interrupted by solos. As they recur, they proceed from very scattered (1st time separate the two notes) to nearly unison (4th time play the two notes together).

	1st clang	1st solo	2nd clangs	2nd solo
s bonang	32	(saron solo - -tacet)	52 -	(demung solo -tacet)
p bonang	74		- 34	

3rd clangs	3rd solo	4th clangs
35 - 23	(peking solo -tacet)	5 5 2 - 5 -
- 16 -		- 4 6 3 - 1

4th solo	3rd solo
	(tacet) -
p bonang	(p) 1 $\overset{\cdot}{\underset{\cdot}{3}}\overset{\cdot}{\underset{\cdot}{4}}$ $\overset{\cdot}{\underset{\cdot}{6}}$ $\overset{\cdot}{\underset{\cdot}{6}}$ $\overset{\cdot}{\underset{\cdot}{3}}\overset{\cdot}{\underset{\cdot}{4}}$ $\overset{\cdot}{\underset{\cdot}{3}}\overset{\cdot}{\underset{\cdot}{4}}$ $\overset{\cdot}{\underset{\cdot}{6}}$ $\overset{\cdot}{\underset{\cdot}{4}}$ $\overset{\cdot}{\underset{\cdot}{1}}\overset{\cdot}{\underset{\cdot}{4}}\overset{\cdot}{\underset{\cdot}{3}}\overset{\cdot}{\underset{\cdot}{6}}$

	BUKA: in rhythm		
s bonang	$\overset{\cdot}{\underset{\cdot}{1}}\overset{\cdot}{\underset{\cdot}{4}}\overset{\cdot}{\underset{\cdot}{3}}\overset{\cdot}{\underset{\cdot}{6}}$ $\overset{\cdot}{\underset{\cdot}{1}}\overset{\cdot}{\underset{\cdot}{4}}\overset{\cdot}{\underset{\cdot}{3}}\overset{\cdot}{\underset{\cdot}{6}}\overset{\cdot}{\underset{\cdot}{1}}$ 1 $\overset{\cdot}{\underset{\cdot}{3}}\overset{\cdot}{\underset{\cdot}{4}}$ $\overset{\cdot}{\underset{\cdot}{6}}$ $\overset{\cdot}{\underset{\cdot}{6}}$	2 $\overset{\cdot}{\underset{\cdot}{3}}\overset{\cdot}{\underset{\cdot}{5}}$ 5	5 . 5 .
p bonang	$\overset{\cdot}{\underset{\cdot}{1}}\overset{\cdot}{\underset{\cdot}{4}}\overset{\cdot}{\underset{\cdot}{3}}\overset{\cdot}{\underset{\cdot}{6}}$ $\overset{\cdot}{\underset{\cdot}{1}}\overset{\cdot}{\underset{\cdot}{4}}\overset{\cdot}{\underset{\cdot}{3}}\overset{\cdot}{\underset{\cdot}{6}}\overset{\cdot}{\underset{\cdot}{1}}$ 1 $\overset{\cdot}{\underset{\cdot}{3}}\overset{\cdot}{\underset{\cdot}{4}}$ $\overset{\cdot}{\underset{\cdot}{6}}$ $\overset{\cdot}{\underset{\cdot}{6}}$	-	. 1 6 3 | 4 4 | 6 6 4 . 4 . | 4 . 4 .

5 . 5 .	. 2 6 3	5 . 5 3	2 . 6 3	5 3 2 5	. 3 . 6
3 . 3 .					
6 6					
4 . 4 .	. . . .	. . 4 6	7 1 3 .	4 7 . 7	4 6 3 .

slendro bonang	. . . .	3 . 2 .	2 . 3 .	2 . 2 .	$\overset{\cdot}{3}$ $\overset{\cdot}{2}$ 3 . 2 .
pelog bonang	1 . . 3	...3..1.	.3.....3	..1..4..	$\overset{\cdot}{3}$ $\overset{\cdot}{1}$...3..1.
			(kenong)	. . . 7	6 4 3 3

Section II

sl.bonang	$\overset{\cdot}{3}$ $\overset{\cdot}{2}$ $\overset{\cdot}{5}$ $\overset{\cdot}{6}$
pel.bonang	4 $\overset{\cdot}{7}$ $\overset{\cdot}{1}$ 6

mp

continue repeating through:
Intro - 8 measures
(A) - (demung melody) 4 meas.
(B) - (group melody) 12 meas.

(C)

s bonang	$\overset{\cdot}{2}$ $\overset{\cdot}{3}$ $\overset{\cdot}{6}$ $\overset{\cdot}{5}$
p bonang	$\overset{\cdot}{7}$ 4 6 $\overset{\cdot}{1}$
kempul	4 . . .

mf

continue repeating through
(C) - (canon) 12 meas.
(D) - (triplets) 9 meas.
(E) - (cadence) 3 meas.

(F)

s bonang	$\overset{\cdot}{3}$ $\overset{\cdot}{2}$ $\overset{\cdot}{3}$ | $\overset{\cdot}{2}$ $\overset{\cdot}{3}$ $\overset{\cdot}{2}$
p bonang	$\overset{\cdot}{7}$ $\overset{\cdot}{7}$ $\overset{\cdot}{7}$ | $\overset{\cdot}{7}$ $\overset{\cdot}{7}$ $\overset{\cdot}{7}$

(repeat and accel.
until kempul cue)

Section III Group clangs begin in unison. Initially the slentem player cues each clang, spacing them at at 3 to 4 second intervals. Over the course of several minutes the group very gradually diminuendos and at the same time scatters. Parts fall behind and ahead of the kempul; each players two notes begin to separate, until there is a constant sheet of small sounds just before the group reaches inaudibility. Bonangs may place their notes in either or both octaves.

(G)

s bo	5 6 2 | 3 6 2 | 3 5 6 | 2 3 6 | 2 3 5 | 6 2 3
p bo	7 | 7 | 7 | 7 | 7 | 7
	6 1 4 | 3 7 1 | 4 3 6 | 1 3 6 | 1 4 3 | 6 1 3

WOODSTOCK - Kenong/Kempul

The **kenong** mode pitches are: s2, p3, s3, p4 (or s5), p or s6, p7 and high p1. In this score only the 3's are distinguished by s or p marking.

Kempul notes are distinguished from kenong by being circled. Pitches used in Section I are: p4 (or s5), p or s6, p7 and high p1. In Section II only two pitches are used: p4 and a high octave 6 (p1 may substitute). Section III needs only p4.

Section I: Opening Clangs

Group clangs are very loud. They are spaced and interrupted by solos. As they recur, they proceed from very scattered to unison.

	1st clang	1st solo	2nd clangs	2nd solo
kenong	4		7 p 3	
kempul	4	(saron solo - -tacet)	4 6	(demung solo -tacet)

	3rd clangs	3rd solo	4th clangs	4th solo
s	3 6 4		2 p 3 4 6	
	4 6 7	(peking solo -tacet)	4 6 7 1	(bonang duet - tacet until-)

(end of Buka)

Section II

s bonang	3 . 2 .	2 . 3 .	2 . 2 .	3 2 3 . 2 .	3 2
p bonang	...3..1.	.3.....3	..1..4..	4 3 1 ...3..1.	7 4
kenong	. . . .	. . . .	. . . 7	s p 6 4 3 3	2
kempul	. . . .	. . . .	. . . .	. . . .	4

f
(first note of next page)

(F)

In section (F) kenong continuously plays pitch 4, first at previous tempo, then accelerating with ensemble (which is playing 4 beats against the kempul's measures of 3 beats).

Kempul is tacet after initial note (previous page) until ensemble has accelerated to beat = 120. Then give the cue for Section III.

Section III (G)

Group clangs begin in unison. Initially the slentem player cues each clang, spacing them at at 3 to 4 second intervals. Over the course of several minutes the group very gradually diminuendos and at the same time scatters. Parts fall behind and ahead of the kempul; each players two notes begin to separate, until there is a constant sheet of small sounds just before the group reaches inaudibility.

Kenong: select randomly from among pitches in the mode for each clang.

Kempul: play p4 for each clang.

IMBAL-IMBAL

For Javanese gamelan in mixed tuning: all balungan instruments, kempul (or key-gongs), gong agung and peking. Gender may substitute for or augment balungan parts. These two short pieces were written as sections of a collage work by four composers entitled Gamelan N.E.A. Outside of the context of that piece, they may be effectively performed on a program inbetween other works, and not too close to eachother.

The pieces are named for the Javanese term for interlocking parts, a technique whereby a second player, using the same keyboard or a different one, interpolates notes between the melody notes of another player to create an ornamental inner part at double speed. In this non-Javanese imbal-imbali the instruments in all four octaves play as interlocking pairs.

Each Imbal movement is in the dynamic shape of a large crescendo-decrescendo, the climax of which is the changing point, marked by a loud gong agung stroke and a harmonic modulation up a half step to a second mode. Tempo is constant throughout.

The modes in each movement are created by assigning three notes of slendro to one player of each pair and three notes of pelog to the other, thereby creating a 6 note mode. The pitches of the initial mode are: slendro 1, 2, 5 and pelog 3, 5, 7. At the midway point of each piece players switch pitches to create the second mode: pelog 1, 2, 5 and slendro 3, 6, 1.

In each Imbal there are four layers of activity. As in Javanese soft-style court music, no one layer of activity should predominate, even though one pair of players is providing melody and the others harmonic texture and punctuation. The four voices, differently assigned in each Imbal, are:

1. Colotomic pattern. These parts emphasize the pitch centers: 5 and 2 for Imbal I; 3 and 7 (or slendro 1) for Imbal II.
2. Ostinato pattern. A short repeated interlocking part which provides a static harmonic texture
3. Imbal pattern. This is a sequence of measures repeated a fixed number of times which fills in the colors of the mode. When the part repeats, the two players switch lines, which serves to modulate the imbal into the second mode.
4. Melody. This is a through composed melody which moves from the first mode into the heterophony of simultaneous modes and, after the change point, resolves again into the second mode.

In each Imbal movement the entrances are staggered, as indicated in the individual section instructions. Because the spacing of entrances between the four voices is ad lib, the melody voice must make use of vamp measures just before and after the gong that marks the midpoint of the movement.

The following Sample Scores for each **Imbal** show the rhythmic alignment of the four voices. However the actual melodic alignment will differ because of the ad lib spacing of entrances and the vamp measures. Individual part pages follow the sample score page.

Score and all individual parts are notated with downbeats, not end-beats.

IMBAL I - general instructions

Tempo: ♩ = 90; measure = 8 ⁹ Slentem plays ³ 4, putting 2's against the 3's in the other voices.

Rhythmic relationships:

peking pair:	ostinato
saron pair:	imbal
demung pair:	colotomic
slentem pair:	melody
key-gong:	colotomic



Dynamics:

Gradual crescendo from an initial *p* to *ff* at the midway gong. Then decrescendo to a final

Entrances:

Each successive part (pair) enters around 3 to 6 measures after the previous pair's entrance. Enter in this order: peking, demung, saron, slentem, key-gong.

Cueing the midpoint:

The change is cued by the gong, who takes his cue from the saron part. The saron pair may need to give a visual signal during the final repeat of their last measure.

Saron (imbal) repeats each measure of their part four times. After signaling the gong player that they have come to the end of their part, the imbal pair repeats their part from beginning to end, but switches lines as indicated in their individual part.

Slentem (melody) plays each measure only once, save for the repeated line. The gong will sound the midpoint somewhere during the repeats of that line. At that cue, finish the repeated line, play it through once more, then proceed to the second half.

All other parts simply switch to their second repeated measure.

Ending:

Without slowing down, each pair ends in a *p* dynamic. For the melody and imbal, this will be when their composed part runs out. After they have stopped, ostinato and then the colotomic parts end ad lib. - pairs should stay together.

IMBAL I
sample score

First part:

sl. peking	25.	52.	25.	52.	25.	52.	25.	52.	25.	52.
pel.peking	..5	..2	..3	..5	..2	..3	..5	..2	..3	..5
sl. saron	212	..5	2.5	212	..5	2.5	212	..5	2.5	212
pel.saron	...	35.	.5.	...	35.	.5.	...	35.	.5.	...
sl. demung	5	5		5	5		5	5		5
	2	2	2	2	2	2	2	2	2	2
pel.demung	5			5			5			5
	2	.	.	2	.	.	2	.	.	2
sl. slentem	2	5	.	.	.	.	5	2	.	.
pel.slentem	.	.	.	.	.	.5	.	.	.	.5
keygong (sl)	5	.	.	5	.	.	5	.	.	5
gong agung	(tacet)									

Second part:
change to

sl. peking	..6	..5	..2	..6	..5	..2	..6	..5	..2	..6
pel.peking	52.	25.	52.	25.	52.	25.	52.	25.	52.	25.
sl. saron	...	36.	.6.	...	36.	.6.	...	36.	.6.	...
pel.saron	212	..5	2.5	212	..5	2.5	212	..5	2.5	212
sl. demung	5			5			5			5
	2	.	.	2	.	.	2	.	.	2
pel.demung	5	5		5	5		5	5		5
	2	2	2	2	2	2	2	2	2	2
sl. slentem	5.2	3.5	512	5.6	512	356	5	5	.	1
pel.slentem	5.2	3.5	512	5.6	512	356	5	5	.	7
sl. keygong	5			5			5			5
pel.keygong	5	.	.	5	.	.	5	.	.	5
gong agung	G	.	.	(tacet after sound fades)						

IMBAL I
saron pair (imbal)

Enter after peking and demung parts are established.
Repeat each measure 4 times.

Dynamic shape: first part crescendo from *p* to *ff*
second part decrescendo from *ff* to *p*

Give visual cue to gong player at the end of the first part, and
continue without break through the second part.

Note: the gong sounds only once.

First part:

slendro	212 ..5 2.5	..2 ..5 2.5	..2 15. 2.5	..2 15. .52
pelog	... 35. .5.	73. 35. .5.	73. ..5 .5.	73. ..5 7..
slendro	.5. 15. .52	.5. 2.5 .52	.5. 2.5 ..5	2.1 2.5 ..5
pelog	3.7 ..5 7..	3.7 .3. 7..	3.7 .3. 57.	.3. .3. 57.
slendro	2.1 ..5 ..5	2.1 ..5 2.5		
pelog	.3. 35. 57.	.3. 35. .5.		

Second part:

slendro	... 36. .6.	1̇3. 36. .6.	1̇3. ..6 .6.	1̇3. ..6 1̇..
pelog	212 ..5 2.5	..2 ..5 2.5	..2 15. 2.5	..2 15. .52
gong	G			
slendro	3.1̇ ..6 1̇..	3.1̇ .3. 1̇..	3.1̇ .3. 61̇.	.3. .3. 61̇.
pelog	.5. 15. .52	.5. 2.5 .52	.5. 2.5 ..5	2.1 2.5 ..5
slendro	.3. 36. 61̇.	.3. 36. .6.		
pelog	2.1 ..5 ..5	2.1 ..5 2.5		

IMBAL I
slentem pair (melody)

Enter after peking, demung and imbal parts are established.
Rhythmic division: Peking and saron are playing triplets for every slentem beat. Slentem divisions:

$$\overline{56} = \text{♪} \quad \overline{5.6} = \text{♪♪} \quad \overline{565} = \text{♪♪♪}$$

At end of section repeat indicated line as a vamp. At some point the gong will sound. Read through to the end of the line and continue into the second part.

Dynamic shape: first part crescendo *p* to *ff*
second part decrescendo *ff* to *p*

First part:

slendro	2 5 .	. . .	5 2 .	. . .⁵	2 5 .	5 . .
pelog	. . .	. . .⁵	. . .	. . .	. . .⁵	. . .
slendro	. 5 5	2 . .	. . .²⁵	. . . ⁵	. ⁵ . .	. ⁶⁵³
pelog	7 .5.3	. . .	. . .	3 . 3	5 3 .	. ⁵⁵³
slendro	5 . .	. . .	. . .¹¹	3 ^{53.2}	1 . .	. ⁵⁶⁵
pelog	5 . .	. 7 7	3 . ⁷⁷	3 ^{53.2}	1 . .	. ⁵⁵⁵
slendro	1 . ²⁵	⁶¹³ .	⁶¹² 3	⁶⁵³²¹	2 . ^{3.6}	5 . ^{3.6}
pelog	1 . ²⁵	573 .	⁵⁷² 3	⁵⁵³²¹	2 . ^{3.5}	5 . ^{3.5}

vamp until after gong:

slendro	5.6 5.2 3.5	512 5.6 5.2	3.5 512 5.6	5.2 3.5 512
pelog	5.5 5.2 3.5	512 5.5 5.2	3.5 512 5.5	5.2 3.5 512

Second part:

slendro	5.6 512 356	5 5 .	1 ⁵⁶⁵³	2 ³¹²⁵	3 . .	. . .³⁵
pelog	5.5 512 355	5 5 .	7 ⁵⁵⁵³	2 ³¹²⁵	3 . .	. . .³⁵
slendro	⁶⁵ 3 5	. 1 1	3 . .	. 1 1	3 . 6	. 1 1
pelog	⁵⁵ 3 5	. 7 7	3 . .	. . .	. 5 .	. . .
slendro	3 . ³	. . .	. ⁵⁶⁵	1 . .	. . .²⁵	⁶¹ 3 .
pelog	. 5 . ²	1 . .	. ⁵⁵⁵	1 . .	. . .²⁵	. . .
slendro	⁶¹ . 3	⁶ 3 .	. 3 .	. . .	. . .	. . .
pelog	. 2 .	. ^{5.2} 1	. ^{5.2} 1	. 5 1	2 . .	2 . .

IMBAL I
peking pair (ostinato)
demung pair (colotomic)
key-gongs (colotomic)

Entrance order: peking pair first, demung pair second.
 Key-gong enters later, after saron and slentem.

Dynamic shape: first part crescendo from *p* to *ff*
 second part decrescendo from *ff* to *p*

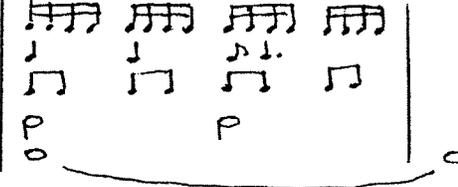
A single gong cues transition from first to second parts.
 Peking should endeavor to switch directly at the gong without losing a beat. On the gong note, key-gong plays s5 and p5 in unison, switching thereafter to p5.

	<u>First part</u>	<u>Second part</u>
sl. peking	{ 25. 52. }	{ ..6 ..5 ..2 }
pel.peking	{ ..5 ..2 ..3 }	{ 52. 25. }
sl. demung	{ 5 5 2.. 2.. 2.. }	{ 5 2.. ... }
pel.demung	{ 5 2.. ... }	{ 5 5 2.. 2.. 2.. }
key-gongs	{ s 5.. ... }	{ p 5.. ... }

IMBAL II - general instructions

Tempo: ♩ = 110; measure = 4

Rhythmic relationships:

peking pair:	ostinato	|
saron pair:	melody	
demung pair:	imbal	
slentem pair:	colotomic	
key-gong:	colotomic	

Dynamics:

Gradual crescendo from an initial *p* to *f* at the midway gong. Then decrescendo to a final *p*

Entrances:

Each successive part (pair) enters around 3 to 6 measures after the previous pair's entrance. Enter in this order: peking, slentem, demung, saron, key-gong.

Cueing the midpoint:

The change is cued by the gong, who takes his cue from the demung part, which now plays the imbal.

Demung (imbal) repeats each measure of their part three times.

Saron (melody) plays each measure only once, save for the repeated line. The gong will sound the midpoint somewhere during the repeats of that line. At that cue, finish the repeated line, play it through once more, then proceed to the second part.

All other parts simply switch to their second repeated measure.

Ending:

Without slowing down, each pair ends in a *p* dynamic. For the melody and imbal, this will be when their composed part runs out. After they have stopped, ostinato and then the colotomic parts end ad lib. - pairs should stay together.

IMBAL II

sample score

First part:

sl. peking	.3 $\dot{1}$..3 $\dot{1}$..3 $\dot{1}$..3 $\dot{1}$..	.3 $\dot{1}$..3 $\dot{1}$..3 $\dot{1}$..3 $\dot{1}$..	.3 $\dot{1}$..3 $\dot{1}$..3 $\dot{1}$..3 $\dot{1}$..
pel.peking	3..73..73..73..7	3..73..73..73..7	3..73..73..73..7
sl. saron	5 . . . 2 . . .	. . . . . 5	2
pel.saron	. . 3 . . 3 . .	. . . . 3 . . .	. . . . .
sl. demung	. . . 2 . . 2 5	. . . 2 . . 2 5	. . . 2 . . 2 5
pel.demung	3 7 5 . 3 5 . .	3 7 5 . 3 5 . .	3 7 5 . 3 5 . .
sl. slentem	1 3 . . .	1 3 . . .	1 3 . . .
pel.slentem	7 . . 7 . .	7 . . 7 . .	7 . . 7 . .
keygong (sl)	3 . . .	3 . . .	3 . . .
gong agung	(tacet)		

Second part:
change to

sl. peking	3 $\dot{1}$..3 $\dot{1}$..3 $\dot{1}$..3 $\dot{1}$..	3 $\dot{1}$..3 $\dot{1}$..3 $\dot{1}$..3 $\dot{1}$..	3 $\dot{1}$..3 $\dot{1}$..3 $\dot{1}$..3 $\dot{1}$..
pel.peking	..73..73..73..73	..73..73..73..73	..73..73..73..7
sl. saron	$\overline{23}$. . $\dot{1}$ 3 2 $\dot{1}$.	$\overline{32}$. . 5 $\overline{23}$. . $\dot{1}$	3 2 $\dot{1}$. 5 2 5 3
pel.saron	$\overline{23}$. . 7 3 2 . 7	$\overline{32}$. . 5 $\overline{23}$. . 7	3 2 . 7 5 2 5 3
sl. demung	3 $\dot{1}$ 6 . 3 6 . .	3 $\dot{1}$ 6 . 3 6 . .	3 $\dot{1}$ 6 . 3 6 . .
pel.demung	. . . 2 . . 2 5	. . . 2 . . 2 5	. . . 2 . . 2 5
sl. slentem	$\dot{1}$ 3 . . 3 . .	$\dot{1}$ 3 . . 3 . .	$\dot{1}$ 3 . . 3 . .
pel.slentem	7	7	7
keygong (pel)	3 . . .	3 . . .	3 . . .
gong agung	G . . .	(tacet after sound fades)	

IMBAL II
demung pair (imbal)

Enter after peking and slentem parts are established.
Repeat each measure 3 times.

Dynamic shape: first part crescendo from p to ff
second part decrescendo from ff to p

Give visual cue to gong player at the end of the first part, and continue without break through the second part.

Note: the gong sounds only once.

First part:

slendro	|	...2	..25	|	125.	..25	|	125.	..2.	|	5..2	..2.	|
pelog	|	375.	35..	|	...5	35..	|	...5	75.3	|	.53.	75.3	|
slendro	|	5..2	12..	|	.25.	12..	|	.25.	21.2	|	.5..	21.2	|
pelog	|	.53.	..37	|	5..3	..37	|	5..3	..7.	|	3.57	..7.	|
slendro	|	.5..	12..	|	.5.2	12..	|	.5.2	52.5	|	125.	52.5	|
pelog	|	3.57	..37	|	5.3.	..37	|	5.3.	..3.	|	...5	..3.	|
slendro	|	125.	..2.	|	52.1	..2.	|	52.1	..2.	|	...2	..2.	|
pelog	|	...5	73.5	|	..3.	73.5	|	..3.	57.7	|	375.	57.7	|

Second part:

slendro	|	316.	36..	|	...6	36..	|	...6	16.3	|	.63.	16.3	|
pelog	|	...2	..25	|	125.	..25	|	125.	..2.	|	5..2	..2.	|
gong	|	G		|			|			|			|
slendro	|	.63.	..31	|	6..3	..31	|	6..3	..1.	|	3.61	..1.	|
pelog	|	5..2	12..	|	.25.	12..	|	.25.	21.2	|	.5..	21.2	|
slendro	|	3.61	..31	|	6.3.	..31	|	6.3.	..3.	|	...6	..3.	|
pelog	|	.5..	12..	|	.5.2	12..	|	.5.2	52.5	|	125.	52.5	|
slendro	|	...6	13.6	|	..3.	13.6	|	..3.	61.1	|	316.	61.1	|
pelog	|	125.	..2.	|	52.1	..2.	|	52.1	..2.	|	...2	..2.	|

IMBAL II
saron pair (melody)

Enter after peking, slentem and imbal parts are established.

Rhythmic division: same tempo as demung imbal.

At end of section repeat indicated line as a vamp. At some point the gong will sound. Read through to the end of the line and continue into the second part.

Dynamic shape: first part crescendo *p* to *ff*
second part decrescendo *ff* to *p*

First part:

slendro	| 5... 2... | .... 5 | 2... | .... | .... |
pelog	| ..3. .3.. | .... 3... | .... | .... | .... |

slendro	| ..5. .... | .... | .... 5.3. | 25.. | .... |
pelog	| 5... .... | .... 3... | 5... | .... | ..3. |

slendro	| .... | .... 25. $\overline{2}$ | 1... 25.. | 1... | .... |
pelog	| .... | .... .3. | .... | .... | .... |

slendro	| ..5. 1... | .... 1.2. | ..5. .5.. | 6532 .123 |
pelog	| .... | .... | 3..5 .3. | 5532 .123 |

slendro	| 1.1. .... | .... | .... 3... | .... |
pelog	| 7.7. .... | .... | 573. | .... .57 |

slendro	| 2... | ...2 313. $\overline{2}$ | 1.5. | ..1. 5... |
pelog	| ..3. ..57 | .53. 373. $\overline{2}$ | 1.5. | .... .55 |

slendro	| 2... 2... | 261. 2.26 | 5... 3.5. | ..5. |
pelog	| .... 2... | 251. 2.25 | 5... 3.5. | .... 5753 |

slendro	| 1... ..1. | .1.3 .121 | 3253 23.1 | 325. .11. |
pelog	| ..7. 3... | .7.3 .127 | 3253 23.7 | 325. .71. |

vamp until after gong:

slendro	| $\overline{23}..1$ 321. | $\overline{32}..5$ $\overline{23}..1$ | 321. 5253 |
pelog	| $\overline{23}..7$ 32.7 | $\overline{32}..5$ $\overline{23}..7$ | 32.7 5253 |

Second part:

slendro	| 2532 5321 | 3211 .5.3 | $\overline{23}...$..3. $\overline{5}$ | 2... 2.2. |
pelog	| 2532 5327 | 3217 .5.3 | $\overline{23}...$..3. $\overline{5}$ | 2... 2.2. |

(saron - melody, continued)

slendro	| ..3.	6...	| .36.	.3. <u>5</u>.	| 3.3. <u>2</u>	....	| ..1.	25..	|
pelog	| ....	..5.	| ...5	.. <u>25</u>.	| ...<u>2</u>	1...	| ..1.	25..	|

slendro	| 1...	....	| ....	3...	| ..3.	....	| 3. <u>6</u> .	3..3	|
pelog	| 1...	....	| 1..2	..5.	| 2...	5.2.	| ..5	<u>5</u>	| .21.

slendro	| 1.1.	....	| 1.1.	613.	| ..61	.63.	| 313. <u>2</u>	....	|
pelog	| ....	....	| ....	573.	| ..57	...2	| ...<u>2</u>	1.5.	|

slendro	| ....	....	| ..6.	....	| ...6	....	| ..6.	...6	|
pelog	| 5...	....	| ....	5...	| ....	2...	| 2...	..2.	|

slendro	| ...6	....	| ....	....	| 3.3.	1.1.	| ..1.	1.3.	|
pelog	| .12.	5...	| ....	....	| 3.3.	7.1.	| ..7.	1.3.	|

slendro	| ....	....	| ...3	....	| 3...	....	| ..1.	3...	|
pelog	| ....	....	| 5...	21..	| ....	....	| ....	....	|

IMBAL II
 peking pair (ostinato)
 demung pair (colotomic)
 key-gongs (colotomic)

Entrance order: peking pair first, slentem pair second.
 Key-gong enters later, after demung and saron.

Dynamic shape: first part crescendo from to
 second part decrescendo from to

A single gong cues transition from first to second parts.
 Peking should endeavor to switch directly at the gong without
 losing a beat. On the gong note, key-gong plays p3 and s3 in
 unison, switching thereafter to s3.

Rhythmic relationship: Read four peking notes for every count in
 slentem & key-gong lines:

	<u>First part</u>	<u>Second part</u>
sl. peking	$\left(\begin{array}{cccc} \cdot & \cdot & \cdot & \cdot \\ .3\dot{1}. & .3\dot{1}. & .3\dot{1}. & .3\dot{1}. \end{array} \right)$	$\left(\begin{array}{cccc} \cdot & \cdot & \cdot & \cdot \\ 3\dot{1}.. & 3\dot{1}.. & 3\dot{1}.. & 3\dot{1}.. \end{array} \right)$
pel.peking	$\left(\begin{array}{cccc} 3..7 & 3..7 & 3..7 & 3..7 \end{array} \right)$	$\left(\begin{array}{cccc} ..73 & ..73 & ..73 & ..73 \end{array} \right)$
sl. slentem	$\left(\begin{array}{cccc} \cdot & & & \\ 1 & & & \\ 3 & . & . & . \end{array} \right)$	$\left(\begin{array}{cccc} \cdot & & \cdot & \\ 1 & & 1 & \\ 3 & . & 3 & . \end{array} \right)$
pel.slentem	$\left(\begin{array}{cccc} 7 & & 7 & \\ 3 & . & 3 & . \end{array} \right)$	$\left(\begin{array}{cccc} 7 & & & \\ 3 & . & . & . \end{array} \right)$
key-gongs	$\left(\begin{array}{ccccccc} p & & & | & & & \\ 3 & . & . & . & . & . & . \end{array} \right)$	$\left(\begin{array}{ccccccc} s & & & | & & & \\ 3 & . & . & . & . & . & . \end{array} \right)$

SAMBAL

For slendro and pelog instruments and twelve players. It can be done with fewer by consolidating imbal parts into single player, double keyboard parts, but it is preferable not to do so.

Sambal began as an "out-take" from **Gamelan NEA**, as described in the introduction to **Imbal-Imbal**, and shares the same harmonic structure and binary form. When I revived it as a stand-alone piece in 1992, I renamed it **Sambal**, which is something like imbal, only spicier.

Some additions and differences: Dynamics are generally terraced rather than changing gradually. A double tempo section is added in the middle. Instrumentation is expanded: cheng-cheng and/or kendang for percussive backup, keprak for signalling (kempyang can substitute) and free-rhythm bonang for coloration.

General Instructions

6 4

Tempo: beat = 76; measure = 8 in peking & demung against 8 in saron.

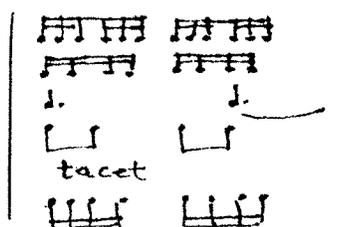
Rhythmic relationships:

peking pair:	ostinato/imbal
saron pair:	ostinato
demung pair:	melody
slentem pair:	colotomic
key-gong:	colotomic
bonang:	melody-echo

A, E



B, C



Entrances: Section A

All entrances are precise; no fade-ins. The pairs of imbal parts are added in initially from highest to lowest, each about 20 to 30 seconds after the pair before, in this order: pekings, sarons, slentems, key-gong. *mp*

Peking pair begins with and ostinato or vamp measure, then at the cue of the key-gong entrance, plays through the imbal repeating each measure three times. Return to the vamp measure after the A imbal and continue until cue for B.

The demung pair (melody) and enters ad lib after the key-gong entrance. The demung melody is played using hard sticks in deliberate contrast to the other soft, quiet players. Although the part can be played as an imbal, it may also be played by the two players independently alternating phrases, each using a slendro/pelog pair of demung as a two-octave keyboard. The final notes of each phrase are sustained (rolled) and the phrases spaced ad lib. They should be played through once in order, and thereafter in any order.

The bonang pair begins after the demung, alternating phrases. Bonang phrases are sustained (rolled with two sticks), spaced from each other and performed in free rhythm.

Section B

Section B is abruptly f . It is cued by keprak or other knocking sound soon after the peking players have completed their variations and returned to the vamp. Kendang and cheng-cheng enter and play strongly during B and C. Keygong drops out after an initial note.

Saron and slentem double their speed. Bonang changes to a metric pattern at the same tempo as the saron.

Demung players play "clangs" of three note chords in contrasting rhythms, as notated.

Section B should be only 20 to 30 seconds long.

Section C

Keprak and a single loud gong agung cue the modulation to C. All parts continue in the same tempo for section C, only with changed notes. Pairs of imbal players essentially exchange parts without changing instruments.

The end of C is also signalled by the keprak cue, after no more than 30 seconds.

Section D

All parts stop on the downbeat of D except the peking pair and cheng-cheng. After about 10 seconds the peking players begin a long decrescendo and decelerando until they are approximately at the original A tempo and dynamic.

As they slow down, cheng-cheng thins out its part. Bonangs enter quietly playing their section E material in spaced phrases. As pekings approach the original tempo, key-gong enters in rhythm with them. First it sounds every fourth measure, then every third, then every second, and finally every measure.

Section E

After the key-gong is playing on each measure, the remaining parts enter in order: slentem, saron, and last demung part. At the demung entrance, cheng-cheng drop out and peking begins its imbal.

To end: Pekings complete the imbal and return to ostinato. Demungs end when their composed material ends. Thereafter other pairs drop out (on downbeats) in entrance order: peking, saron, slentem, key-gong. Bonangs are left playing last.

.....

The following abbreviated score shows the rhythmic relationship in each section. Because of staggered entrances and ad-lib elements, melodies will not align exactly as shown in sections A and D.

Sample Score

A

slendro peking	152	..5	152	..5	152	..5	152	..5	
pelog peking	...	35.	...	35.	...	35.	...	35.	
slendro saron	1 .	. 5	1 .	. 5	1 .	. 5	1 .	. 5	
pelog saron	. 3	5 .	. 3	5 .	. 3	5 .	. 3	5 .	
slendro demung	...	...	...	1.2	5..	...	5..	1..
pelog demung	...	...	...	...	..3	7.5	...	...
slendro bonang	1	2	5	~~~~~					
pelog bonang					3	7	5	4	~~~~~
slendro slentem	5	5	5	5	5	5	5	5	
	1								
pelog slentem	5	.	7	.	5	.	7	.	
key-gong	s5	.	.	.	s5	.	.	.	

B

s. peking	152..5	152..5	152..5	152..5	152..5	152..5
p. peking	...35.	...35.	...35.	...35.	...35.	...35.
s. saron	1. .5	1. .5	1. .5	1. .5	1. .5	1. .5
p. saron	.3 5.	.3 5.	.3 5.	.3 5.	.3 5.	.3 5.
s. demung	5		5		5	5
	2		2		2	2
	1 .	. .	1 .	. .	1 .	1 .
p. demung	7	7		7	7	
	5	5		5	5	
	3 .	. 3	. .	3 .	. 3	. .
s. bonang	11 22	11 22	11 22	11 22	11 22	11 22
p. bonang	(tacet)					
s. slentem	5 5	5 5	5 5	5 5	5 5	5 5
	1		1		1	
p. slentem	5	7	5	7	5	7
key-gong	s5 (once, then tacet)					
cheng-cheng	~~~~~					
kendang	~~~~~					

C

s. peking	...36.	...36.	...36.	...36.	...36.	...36.
p. peking	152..5	152..5	152..5	152..5	152..5	152..5
s. saron	.3 6.	.3 6.	.3 6.	.3 6.	.3 6.	.3 6.
p. saron	1. .5	1. .5	1. .5	1. .5	1. .5	1. .5
	1	1	1	1	1	1
	6	6	6	6	6	6
s. demung	3 .	. 3	. .	3 .	. 3	. .
	5		5		5	5
	2		2		2	2
p. demung	1 .	. .	1 .	. .	1 .	1 .
s. bonang	(tacet)					
p. bonang	11 22	11 22	11 22	11 22	11 22	11 22
s. slentem	6	1	6	1	6	1
		1		1		1
p. slentem *	5 5	5 5	5 5	5 5	5 5	5 5
	1		1		1	
Gong agung	G (once, then tacet)					
cheng-cheng	~~~~~					
kendang	~~~~~					

* note: pelog slentem may have to borrow the high 1 from a gender.

D

s. peking	...36.	...36.	slow to	... 36.	... 36.
p. peking	152..5	152..5		152 ..5	152 ..5
cheng-cheng	~~~~~ decrease activity...				
all others:	tacet				

E

s. peking	...	36.	...	36.	...	36.	...	36.
p. peking	152	..5	152	..5	152	..5	152	..5
s. saron	. 3	6 .	. 3	6 .	. 3	6 .	. 3	6 .
p. saron	1 .	. 5	1 .	. 5	1 .	. 5	1 .	. 5
p. demung	...	...	...	...	..3	1.6	...	...
p. demung	...	...	...	1.2	5..	...	5..	1..
s. bonang				3	.	1	6	5
p. bonang	1	2	5					
s. slentem	6	.	.	1	.	6	.	1
p. slentem	5	5	5	5	5	5	5	5
key-gong	p5	.	.	.	p5	.	.	.

SAMBAL
peking pair (imbal)

A: Enter first. At the cue of the key-gong entrance proceed through the measures repeating each three times. Return to the first measure and continue vamp until cue for B.

B: At keprak cue double the speed of the notes of the vamp measure.

C: At keprak/gong cue switch to new ostinato pattern.

D: Continue when other parts drop out. After a while begin a long slow down and decrescendo until you reach the original tempo of A.

E: Other parts re-enter. At the last entrance (demung) peking players read through the measures repeating each three times. Return to the first measure ostinato at the end. Drop out together, on a downbeat.

Section A

slendro pelog	$\left(\begin{array}{c} \text{vamp} \\ 152 \dots 35. \end{array} \right)$	$\left. \begin{array}{c} .12 \dots 35. \\ 7.. \dots 35. \end{array} \right\} \left| \begin{array}{c} .12 \dots 52. \\ 7.. \dots 3. \end{array} \right| \left| \begin{array}{c} 21. \dots 52. \\ ..3 \dots 3. \end{array} \right| \left| \begin{array}{c} 21. \dots 5. \\ ..3 \dots 57. \end{array} \right|$
slendro pelog	$\left| \begin{array}{c} .51 \dots 5. \\ 3.. \dots 57. \end{array} \right| \left| \begin{array}{c} .51 \dots 51. \\ 3.. \dots 5.. \end{array} \right| \left| \begin{array}{c} 51. \dots 51. \\ ..3 \dots 5.. \end{array} \right| \left| \begin{array}{c} 51. \dots 51. \\ ..3 \dots 5. \end{array} \right| \left| \begin{array}{c} ..2 \dots 51. \\ 73. \dots 5. \end{array} \right| \left| \begin{array}{c} ..2 \dots 1.5 \\ 73. \dots 5. \end{array} \right|$	
slendro pelog	$\left| \begin{array}{c} 2.5 \dots 1.5 \\ .3. \dots 5. \end{array} \right| \left| \begin{array}{c} 2.5 \dots .15 \\ .3. \dots 7.. \end{array} \right| \left| \begin{array}{c} .21 \dots .15 \\ 3.. \dots 7.. \end{array} \right| \left| \begin{array}{c} .21 \dots ..5 \\ 3.. \dots 57. \end{array} \right| \left| \begin{array}{c} 152 \dots ..5 \\ .. \dots 57. \end{array} \right|$	

Section B

Section C and D

slendro pelog	$\left(\begin{array}{c} 152 \dots 36. \\ \dots 35. \dots 35. \end{array} \right)$	$\left(\begin{array}{c} \dots 36. \dots 36. \\ 152 \dots 5. 152 \dots 5. \end{array} \right)$
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Section E

slendro pelog	$\left(\begin{array}{c} \dots 36. \\ 152 \dots 5. \end{array} \right)$	$\left. \begin{array}{c} \dot{1}.. \dots 36. \\ .12 \dots ..5 \end{array} \right\} \left \begin{array}{c} \dot{1}.. \dots ..3 \\ .12 \dots 52. \end{array} \right \left \begin{array}{c} ..3 \dots ..3 \\ 21. \dots 52. \end{array} \right \left \begin{array}{c} ..3 \dots \dot{6}1. \\ 21. \dots ..5 \end{array} \right $
slendro pelog	$\left| \begin{array}{c} 3.. \dots \dot{6}1. \\ .51 \dots ..5 \end{array} \right| \left| \begin{array}{c} 3.. \dots 6.. \\ .51 \dots 51. \end{array} \right| \left| \begin{array}{c} ..3 \dots 6.. \\ 51. \dots 51. \end{array} \right| \left| \begin{array}{c} ..3 \dots ..6 \\ 51. \dots 51. \end{array} \right| \left| \begin{array}{c} \dot{1}3. \dots ..6 \\ ..2 \dots 51. \end{array} \right| \left| \begin{array}{c} \dot{1}3. \dots .6. \\ ..2 \dots 1.5 \end{array} \right|$	
slendro pelog	$\left| \begin{array}{c} .3. \dots .6. \\ 2.5 \dots 1.5 \end{array} \right| \left| \begin{array}{c} .3. \dots \dot{1}.. \\ 2.5 \dots .15 \end{array} \right| \left| \begin{array}{c} 3.. \dots \dot{1}.. \\ .21 \dots .15 \end{array} \right| \left| \begin{array}{c} 3.. \dots \dot{6}1. \\ .21 \dots ..5 \end{array} \right| \left| \begin{array}{c} \dots \dot{6}1. \\ 152 \dots ..5 \end{array} \right|$	

SAMBAL
demung pair (melody)

A: Enter ad lib after all other parts have entered (Key-gong is last).

Phrases are spaced ad lib: the space between double bars can be anywhere from 0 to 8 beats. Each whole beat = one slentem beat. An arc over or under a group of notes = triplets (peking speed). Straight line over or under a group = duple (saron speed). Final notes of each phrase are rolled. Play through the phrases first in the order written, then repeat in any order until keprak cue for B.

B: Ostinato of clangs, played with three mallets on each keyboard.

C: At keprak/gong cue switch to new ostinato of clangs.

D: At keprak cue drop out. Pekings alone continue, gradually slowing to the original tempo of A.

E: As in A, enter after key-gong and play phrases in order. This time do not repeat any; stop at the end of the composed material.

Section A:

slendro || . . . 1.2 | 5 . . . || || . . . 1.2 | 5 . . . | 5 . . . ||
pelog || | || || | . 3 7 5 | ||

slendro || . . . 1.2 | 5 . . 5 1 | . 5 . . || || | . 3 . . . ||
pelog || | . 3 7.5 . . | 5 . . . || || . . . 7 | 3 . . . ||

slendro || . . . 1 52 | . . . 5 | 12 . . . ||
pelog || | 3 7 5 . | ||

slendro || . . . 51 2 . . | 51 . 1 . | ||
pelog || . . . 53 | . 7 3 53 | . 35 7 35 | 7 ||

slendro || . . . 5.1 | 2 . . . || || | . 51 2 . 2 | 5 1 . . ||
pelog || | || || . . . 35 | 75 . 5 3 | ||

slendro || . 52 1 . || || . . . 52 | . . 1 . | 1 . . . ||
pelog || . 5 . . || || . . . 5 | 3 7 . 3.7 | ||

repeat if necessary

Sambal demung p. 2

Section B

s. demung:	5 2 1 . . .	5 2 1 . . .	5 2 1 . 1 .
p. demung:	7 5 3 . . 3	7 5 . . 3 .	7 5 . 3 . .
slentem cue:	5 5 5 5	5 5 5 5	5 5 5 5

Section C

s. demung:	. 1 6 3 . . 3	. 1 6 . . 3 .	. 1 6 . 3 . .
p. demung:	5 2 1 . . .	5 2 1 . . .	5 2 1 . 1 .
slentem cue:	5 5 5 5	5 5 5 5	5 5 5 5

Section C

s. demung:	. 1 6 3 . . . (tacet)
p. demung:	5 2 1 . . . (tacet)
slentem	5 . . .

Sambal demung p. 3

Section E

slendro || : : : $\dot{1}$. $\dot{2}$ | $\dot{5}$: : : || || : : : $\dot{1}$. $\dot{2}$ | $\dot{5}$ $\overset{\cdot}{3}$ $\overset{\cdot}{1}$ $\overset{\cdot}{6}$ | $\dot{5}$: : : ||
pelog || : : : $\dot{1}$. $\dot{2}$ | $\dot{5}$: : : || || : : : $\dot{1}$. $\dot{2}$ | $\dot{5}$. . . | $\dot{5}$: : : ||

slendro || : : : . | $\overset{\cdot}{3}$ $\overset{\cdot}{1}$ $\overset{\cdot}{6}$. . | $\overset{\cdot}{6}$. . . || || : : : $\overset{\cdot}{1}$ | $\overset{\cdot}{3}$. . . ||
pelog || : : : $\dot{1}$. $\dot{2}$ | $\dot{5}$ $\overset{\cdot}{3}$ $\overset{\cdot}{1}$ $\overset{\cdot}{6}$. . | $\dot{5}$ $\dot{1}$ | . $\overset{\cdot}{6}$. . . || || : : : $\dot{1}$ | $\dot{3}$. . . ||

slendro || : : : . | $\overset{\cdot}{3}$ $\overset{\cdot}{1}$ $\overset{\cdot}{6}$. . | $\dot{1}$ $\dot{2}$: : : ||
pelog || : : : $\dot{1}$ $\dot{2}$ | . . . $\dot{5}$ | $\dot{1}$ $\dot{2}$: : : ||

slendro || : : : $\overline{63}$ | . $\overset{\cdot}{1}$ $\overset{\cdot}{3}$ $\overline{63}$ | . $\overline{36}$ $\overset{\cdot}{1}$ $\overline{36}$ | $\overset{\cdot}{1}$. . . ||
pelog || : : : . | $\underline{51}$ $\overset{\cdot}{2}$. . | $\underline{51}$. $\underline{1}$. | ||

slendro || : : : . | $\dot{2}$: : : || || : : : $\overline{36}$ | $\overset{\cdot}{1}$ $\overset{\cdot}{6}$. $\overline{6}$ $\overset{\cdot}{3}$ | $\dot{5}$ $\dot{1}$: : : ||
pelog || : : : $\dot{5}$. $\dot{1}$ | $\dot{2}$: : : || || : : : . | . $\underline{51}$ $\overset{\cdot}{2}$ $\underline{2}$ | $\dot{5}$ $\dot{1}$: : : ||

slendro || $\overline{6}$. . . || || : : : $\overline{6}$. | $\overset{\cdot}{3}$ $\overset{\cdot}{1}$. $\overset{\cdot}{3}$. $\overset{\cdot}{1}$ | || (end)
pelog || . $\underline{52}$ $\dot{1}$: : || || : : : $\underline{52}$ | . . $\dot{1}$. | $\dot{1}$: : : || (end)

SAMBAL
bonang pair (obbligato)

Begin after all other instruments have entered (key-gong and demung are last). The bonang part is a quiet, free-rhythm "echo" of the demung melody.

Section A, D and E: phrases are slow; each note is a tremolo and each phrase a crescendo-decrescendo. Space the phrases. Repeat them in any order, but alternating slendro and pelog.

Section B and C are ostinati at the tempo of the saron. B is cued by keprak, C by gong agung, D by keprak.

End last, after all other parts have dropped out.

Section A

(s) 1 2 5	(p) 3 7 5 4	(s) 5 1 2	(p) 4 5 7 3
(s) 2 5 1	(p) 7 3 5 4	(s) 1 2	

Section B

(s) $\left\| \begin{array}{l} \dot{1} \ 1 \ \dot{2} \ 2 \\ \dot{1} \ 1 \ \dot{2} \ 2 \end{array} \right\|$

Section C

(p) $\left\| \begin{array}{l} 1 \ \dot{1} \ 2 \ \dot{2} \\ 1 \ \dot{1} \ 2 \ \dot{2} \end{array} \right\|$

Section D and E

(p) 1 2 6	(s) 3 $\dot{1}$ 6 3	(p) 5 1 2	(s) 6 $\dot{1}$ 6 3
(p) 2 5 1	(s) $\dot{1}$ 3 6	(p) 6 5 2 1	

SAMBAL
saron pair (ostinato)
slentem pair (colotomic)
key-gongs (colotomic)

Entrances: Peking is the first instrument heard. Saron pair enters next, then slentem pair and key-gong, at about 20 to 30 second intervals.

Sections B and C are loud, and double the tempo of A. Keprak cues transitions to B, C (with gong), and D. At D drop out, letting the one note ring.

E is a recapitulation of A, with different pitches. Enter in the same way. End after demung pair has ended, dropping out in entrance order.

	A	B	C
s. saron	1 . . 5 1 . . 5	1. .5 1. .5	.3 6. .3 6.
p. saron	. 3 5 . . 3 5 .	.3 5. .3 5.	1. .5 1. .5
s. slentem	5 5 5 5 1	5 5 5 5 1	6 1
p. slentem	5 . 7 .	5 7	5 5 *1 5 5 1
key-gong	s5 . . .	s5 (once only)	G (once only)

	D	E
s. saron	.. (tacet)	. 3 6 . . 3 6 .
p. saron	1.	1 . . 5 1 . . 5
s. slentem	6 (tacet)	6 . 1 .
p. slentem	5 (tacet) 1	5 5 *1 5 5 1
key-gong	tacet	p5 . . .

 * note: pelog slentem may have to borrow the high 1 from a gender.

HELLS BELLS

This piece is inspired by the English tradition of change ringing on church or hand bells, though the pattern used herein is not strictly a traditional one.

Instrumentation

The piece requires an equal number of saron demung, saron barung and saron peking in both slendro and pelog; a kenong set in both tunings; kempul pitches 6, s1 and p1; a gong agung. Total number of players: minimum 4, maximum 12.

The modal sequence assumes a set of instruments with tumbuk (common tone) 6, and pitches 1, 2, 3, 5 audibly different in pelog and slendro. Pelog and slendro balungan instruments should be arranged on opposite sides of the gongs and kempul.

The processes

Hells Bells is structured on three processes. The primary process is the playing of a change cycle based on the permutation of numbers 1, 2 and 3. The fourth number (pitch 5) is inserted systematically into the sequence and shifts places every six lines. The fifth number (pitch 6) is stationary, beginning each line of the column. The first column of the score consists of six repeats of the permutation (36 lines), after which what began as a descending scale is now an ascending one.

The second process is one of changing emphasis. The ascending scale becomes an ostinato, during which emphasis on the stationary pitch 6 is replaced by emphasis on pitch 1. In the second column of the score, pitches 3, 5 and 6 are subject to permutation, pitch 2 is inserted in shifting positions, and 1 is stationary. At the end of this column the now descending scale becomes an ostinato and emphasis shifts again from 1 back to 6, so that the first column may be repeated.

The third process is a substitution of pitches. At the beginning of each column after the shift in emphasis, there is a modal modulation at the cue of the gong. Pelog, in which the piece begins, "loses" a pitch and slendro "gains" one. One pitch at a time the entire tuning shifts from pelog to complete slendro, and back again, a process which takes eight columns or four repeats of the score. Eight pentatonic scales are heard, each with the common tone of 6. The Sequence of Modulation chart on the following page shows which notes of slendro and pelog are being played in each column and each repeat.

The score and parts

All balungan instruments read from the score in two columns. First and final lines of each column are repeated until the cue of the gong. At the gong cue, read down the column without repeats until the end. The last line of one column = the first line of the other, with different emphasis.

During most of the piece slendro and pelog balungan instruments will be playing interlocking parts.

Kenong and kempul-gong parts are notated diagrammatically on separate pages.

Beginning and ending

Begin and end the piece with the repeated pelog descending scale, fading in in the intro (first repeated line), out at the coda (last repeated line). Dynamic level for the columns is a moderate tempo and volume. Subtle group dynamic shifts do occur during the ostinato between columns: crescendo and accelerando as kenong and kempul add pitches, decrescendo and decelerando as they subtract them.

Hells Bells
Sequence of Modulation - all parts

		<u>Left Column</u>		<u>Right Column</u>
1st mode	p	6 5 3 2 1	2nd mode	p 1 2 3 - -
	s	- - - - -		s - - - 5 6
3rd mode	p	- - - 1 2	4th mode	p 1 - - - -
	s	6 5 3 - -		s - 2 3 5 6
5th mode	p	- - - - -	6th mode	p - - - 5 6
	s	1 2 3 5 6		s 1 2 3 - -
7th mode	p	6 5 3 - -	8th mode	p - 2 3 5 6
	s	- - - 2 1		s 1 - - - -
coda (no changes)	p	6 5 3 2 1		
	s	- - - - -		

HELLS BELLS
balungan

✦	65321	12356	✦
	65312	12365	
	65231	12536	
	65213	12563	
	65132	12635	
	65123	12653	
	63521	13256	
	63512	13265	
	62531	15236	
	62513	15263	
	61532	16235	
	61523	16253	
	63251	13526	
	63152	13625	
	62351	15326	
	62153	15623	
	61352	16325	
	61253	16523	
	63215	13562	
	63125	13652	
	62315	15362	
	62135	15632	
	61325	16352	
✦	61235	16532	✦

kenong	65	_____	12	kenong
kempul	6	_____	1	kempul

HELLS BELLS
kenong

Intro: Pelog balungan fades in, descending scale.
Kenong joins and repeats until gong cue.

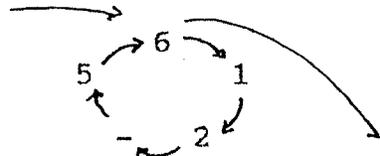
6 - - - -

First Column: Repeat each line six times.

6 5 - - -
6 - 5 - -
6 - - 5 -
6 - - - 5

Change of columns: Repeat each line several times. Repeat circle until kempul has added and subtracted its notes
Slight accelerando & crescendo as notes are added.
Slight decel. and decresc. as they are subtracted.

6 - - - 5
6 1 - - 5
6 1 2 - 5



1 2 - 5 6
1 2 - - 6
1 2 - - -

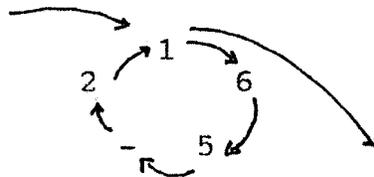
repeat last
line until
gong.

Second Column: Repeat each line six times.

1 2 - - -
1 - 2 - -
1 - - 2 -
1 - - - 2

Change of columns: As above.

1 - - - 2
1 6 - - 2
1 6 5 - 2



6 5 - 2 1
6 5 - - 1
6 5 - - -

repeat last
line until
gong.

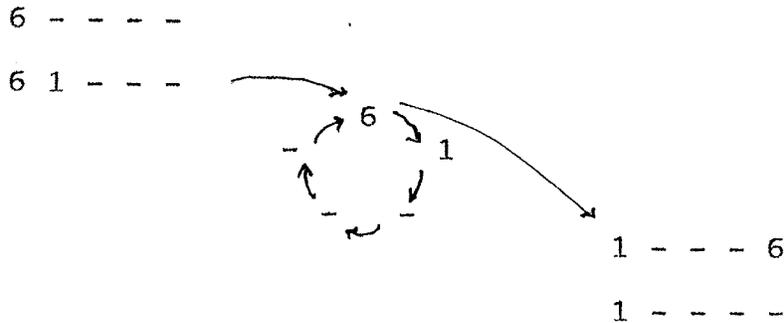
Coda: 6 - - - - Repeat and fade

HELLS BELLS
kempul - gong

Intro: After balungan and kenong have faded in, gong signals beginning of first column.

First Column: 6 - - - - (24 times)

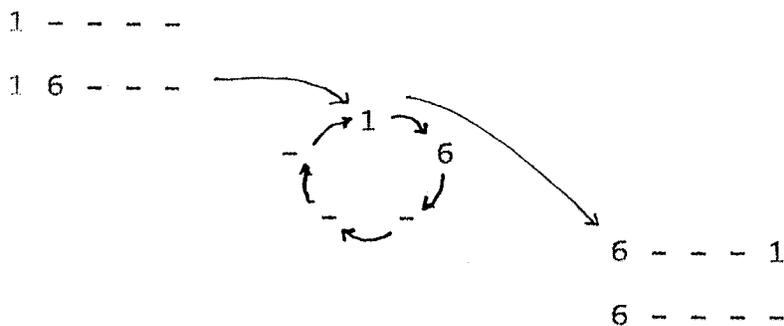
Change: Kenong adds notes until it is playing 4 pitches. Kempul then adds and subtracts notes, playing each line and the circle several times.



Kenong then subtracts notes. When it is back to 2 pitches, Gong sounds the beginning of the second column. There is a slight crescendo - accelerando and decrescendo - decelerando during the changes.

Second Column: 1 - - - - (24 times)

Change: As above.



Coda: Gong once, then tacet.

YUDISHTHIRA'S QUARTET

A double quartet for computer and gamelan in which various musical parameters are determined by random decisions.

The gamelan consists of gong plus slendro-pellog pairs of balungan instruments in four octaves: slentem, demung, saron and peking. Each pair is played by a single person. The middle octave parts, saron and demung, may be doubled. All players have dice.

The computer must be able to play back four voices, using MIDI if necessary. It must also be able to reproduce pitches that match the gamelan instruments. Programming guidelines are included in this score. Gamelan Son of Lion first performed **Yudishthira's Quartet** with an Amiga computer programmed by Nick Didkovsky in HMSL language. Copies of that program are available on request from the composer or the publisher of this volume.

The numbers being randomized in this piece are 1-4 and 1-10. Four was chosen because it is a quartet in the sense that four melodic octaves may be played in either of the "bands" - gamelan or computer. Ten was chosen because the combined scales of Gamelan Son of Lion's pelog and slendro yield ten different pitches.

Yudishthira is an epic hero from the Indian-Indonesian Mahabharata. He was a king who compulsively gambled away his kingdom, family and finally himself into slavery. There are no computers in the epic, but insofar as the machine represents perfect randomness, the interplay may be seen as the imperfect randomness of man in juxtaposition to the ideal.

The Form:

The piece consists of ten sound sections alternating with sections of rest, all of variable duration. The computer follows the same form, but produces its decisions independently.

The gamelan begins and ends each sound section with the gong. Whenever playing, the instruments hold to the following rhythmic relationships:

slentem: 2 seconds
demung: 1 second
saron: $\frac{1}{2}$ second
peking: $\frac{1}{4}$ second

Using four given pitches in each sound section, players individually improvise a random melody which continues until the gong cutoff. As in mechanically generated random number charts, there should be a good deal of irregularly occurring doublings of notes, but few if any repeated sequences of notes (i.e., avoid repetitive patterns.)

Generating the Score:

The randomized parameters include: choice of the four pitches, choice of four dynamic levels, choice of number of voices playing, length of each section of music or silence, and (for the computer only) choice of timbres. The computer makes these decisions as it performs. For the sake of ensemble, the humans need to perform with certain of the decisions made beforehand. Thus a score must be generated, using the dice, to define pitch and dynamic. Voicing and timing will be determined by throwing dice during performance.

The following score is tailored to Gamelan Son of Lion's tuning where the common (tumbuk) tones are s6 = p6 and s5 = p4. There are ten separate pitches available from the combined scales. The score is generated in this way:

Pitches:

Throw both dice, preferably using dice of two different colors. One indicates pelog pitches 1 through 6. The other indicates slendro 1 2 3 5 & 6 with the number 4 being read as pelog 7. Since the four pitches in any sound section must be audibly different, no doubles are allowed. If in a given sound section you throw a number twice, ignore it the second time; likewise if you throw common tones - say a pelog 4 and a slendro 5. A different score may be generated for another gamelan with other common tones following this process, so long as there are ten separate pitches.

Dynamics:

Using one die, throw for the group dynamic level of each sound section. Numbers 1 through 4 indicate the four sound levels: p, mp, mf, f. Ignore throws of 5 and 6.

Yudishthira's Quartet Gamelan Players' Score

section #	pitches	dynamic level
1	p2 p3 s3 p7	mf
2	s1 s5 p5 p6	mf
3	s2 p3 p4 p6	f
4	s1 p1 p2 s3	p
5	s1 p1 p6 p7	mf
6	s2 p3 p4 p5	mp
7	s3 s5 p5 p6	mf
8	s1 s3 p6 p7	mf
9	p2 s3 s5 p6	mp
10	s1 p2 p4 p6	p

The Play:

Balungan players throw their dice prior to each new sound section to determine whether they play in it or are tacet. Odd = play, even = tacet. The first throw is made immediately upon hearing the computer begin the piece. Subsequent throws are made immediately upon ending a sound section so as to be prepared for the next.

The gong player throws to determine the length of each sound section and each rest section. Lengths are counted in seconds, or the speed of the demung. Sound section duration = number thrown x 10. Rest duration = number thrown x 4. Since the numbers being randomized are 1 to 10, read a throw of 11 as 1 and 12 as 2.

The counting of seconds and of sections should be continuous, and so it is advisable for the gong player to make the next throw toward the end of each section as it is being counted. Should all balungan players happen to throw even (tacet) in a given sound section, it must be counted through nevertheless; the gong itself is never tacet.

Interaction with the Computer:

In performance the computer's speakers should be on the opposite side of the space from the gamelan so that the two "bands" are balanced from midroom listening point, give or take volume differences between sections.

The computer is programmed according to the following Guidelines. It performs independently but simultaneously with the gamelan, making similar musical decisions as it goes. However, it also gets to choose different timbres, and its performance speed is twice that of the gamelan (fastest part = 1/8 second), machines being indubitably speedier than people.

Humans also rarely calculate the length of a second as well as does a machine. Thus rhythmic coincidence between gamelan and computer may be regarded as another random element. There is a human tendency for the gamelan to drift into rhythmic coordination with the computer when it becomes audible. This is allowable but not obligatory.

Yudishthira's Quartet Computer Programming Guidelines

Prepare ten pitches tuned to those of the gamelan combined pelog and slendro scale.

Prepare ten preset timbres. These should sound distinctly different from each other and should sound "electronic" rather than in imitation of the gamelan or any other acoustic instrument. Because of multiple voices it is advised to avoid the most buzzy timbres.

The program cycles ten times, making the following choices each time around:

1. A random selection of 4 different notes from the combined scale.
2. A randomly selected timbre from among the 10 presets. All voices use the same timbre for the given section.
3. A randomly selected number of voices, between 1 and 4. These voices represent the four octave range of the gamelan instruments. Also select which of the voices, i.e., if there is only one voice, it need not be voice #1

Voice #1 plays continuous 1 second notes, octave 1 (slentem)
Voice #2 plays continuous $\frac{1}{2}$ second notes, octave 2 (demung)
Voice #3 plays continuous $\frac{1}{4}$ second notes, octave 3 (saron)
Voice #4 plays continuous $\frac{1}{8}$ second notes, octave 4 (peking)

4. Random melody: every note a voice sounds is randomly chosen from among the 4 notes that characterize the sound section.
5. A randomly selected volume level out of four possibilities.
6. A randomly selected duration of the sound section chosen from multiples of 10 (10 to 100) seconds.
7. A silence of randomly selected duration in multiples of 4 (4 to 32 seconds) after each sound section.



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