

# **Steve Reich and Musicians**

Rebecca Armstrong	Shem Guibbory
Geordie Arnold	Russ Hartenberger
Bob Becker	Larry Karush
Virgil Blackwell	James Preiss
Steve Chambers	Steve Reich
Jay Clayton	Gary Schall
Richard Cohen	Nurit Tilles
Michael Finckel	David Van Tieghem
Pamela Fraley	Glen Velez

## **Four Concerts**

Monday May 16, 1977, 9 p.m.

Clapping Music (1972)

Pendulum Music (1968)

Violin Phase (1967)

Music for 18  
Musicians (1976)

Tuesday May 17, 1977, 9 p.m.

Four Organs (1970)

Phase Patterns (1970)

Six Pianos (1973)

Music for Mallet  
Instruments,  
Voices and Organ (1973)

Wednesday May 18, 1977, 9 p.m.

Music for Pieces  
of Wood (1973)

Pendulum Music (1968)

Violin Phase (1967)

Six Pianos (1973)

Drumming (1971)

Thursday May 19, 1977, 9 p.m.

Four Organs (1970)

Music for Mallet  
Instruments,  
Voices and Organ (1973)

Music for 18  
Musicians (1976)

## **The Kitchen**

484 Broome Street New York, N.Y. 10012

These concerts made possible through support from the New York State Council on  
the Arts and The National Endowment for the Arts

The Kitchen

presents

Steve Reich and Musicians

Monday May 16, 1977 9 P.M.

Clapping Music (1972)

Russ Hartenberger and Steve Reich

Pendulum Music (1968)

Steve Chambers, Jay Clayton, Russ Hartenberger, James Preiss, Steve Reich -  
microphones, amplifiers & loudspeakers

Violin Phase (1967)

Shem Guibbory - violin and pre-recorded tape

intermission

Music for 18 Musicians (1976)

Virgil Blackwell, Richard Cohen - clarinet/bass clarinet; Shem Guibbory - violin;  
Michael Finckel - cello; Jay Clayton, Pamela Fraley, Geordie Arnold, Rebecca  
Armstrong - voice; Steve Chambers, Nurit Tilles, Larry Karush, Steve Reich - piano/  
marimba/maracas; Russ Hartenberger, Bob Becker, Glen Velez - marimba/xylophone;  
David Van Tieghem - marimba/xylophone/piano; Gary Schall - marimba/maracas; James  
Preiss - metallophone/piano

Tuesday May 17, 1977 9 P.M.

Music for Pieces of Wood (1973)

Bob Becker, Russ Hartenberger, James Preiss, Steve Reich, Glen Velez - tuned claves

Phase Patterns (1970)

Steve Chambers, James Preiss, Steve Reich, David Van Tieghem - electric organs

Four Organs (1970)

Steve Chambers, James Preiss, Steve Reich, Nurit Tilles - electric organs  
Gary Schall - maracas

intermission

Six Pianos (1973)

Bob Becker, Steve Chambers, Russ Hartenberger, James Preiss, Steve Reich, Glen  
Velez - pianos

Music for Mallet Instruments, Voices and Organ (1973)

Bob Becker, Russ Hartenberger, Steve Reich, David Van Tieghem - marimbas  
Gary Schall, Glen Velez - glockenspiels; James Preiss - metallophone; Geordie  
Arnold, Pamela Fraley - voices (long tones with organs); Jay Clayton - voice  
melodic patterns with marimbas; Steve Chambers - electric organ

Wednesday May 18, 1977 9 P.M.

Pendulum Music (1968)

Steve Chambers, Jay Clayton, Russ Hartenberger, James Preiss, Steve Reich -  
microphones, amplifiers & loudspeakers

Violin Phase (1967)

Shem Guibbory - violin and pre-recorded tape

Six Pianos (1973)

Steve Chambers, Larry Karush, James Preiss, Steve Reich, Nurit Tilles, Glen Velez - pianos

intermission

Drumming (1971)

Bob-Becker, Steve Chambers, Russ Hartenberger, James Preiss, Steve Reich, Gary Schall, Nurit Tilles, David Van Tieghem, Glen Velez - tuned bongo drums/marimbas/glockenspiels/whistling; Jay Clayton, Pamela Fraley - voice; Richard Cohen - piccolo

Thursday May 19, 1977 9 P.M.

Four Organs (1970)

Steve Chambers, James Preiss, Steve Reich, Nurit Tilles - electric organs; Bob Becker - maracas

Music for Mallet Instruments, Voices and Organ (1973)

Bob Becker, Russ Hartenberger, Steve Reich, David Van Tieghem - marimbas; Gary Schall, Glen Velez - glockenspiels; James Preiss - metallophone; Geordie Arnold, Pamela Fraley - voices (long tones with organ); Jay Clayton - voice (melodic patterns with marimbas); Steve Chambers - electric organ

intermission

Music for 18 Musicians (1976)

Virgil Blackwell, Richard Cohen - clarinet/bass clarinet; Shem Guibbory - violin; Michael Finckel - cello; Jay Clayton, Pamela Fraley, Geordie Arnold, Rebecca Armstrong - voice; Steve Chambers, Nurit Tilles, Larry Karush, Steve Reich - piano/marimba/maracas; Russ Hartenberger, Bob Becker, Glen Velez - marimba/xylophone; David Van Tieghem - marimba/xylophone/piano; Gary Schall - marimba/maracas; James Preiss - metallophone/piano

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Drumming, Music for Mallet Instruments, Voices and Organ, and Six Pianos have been recorded by Steve Reich and Musicians on Deutsche Grammophon's 3 lp boxed set DG 2740-106

Four Organs has been recorded by Michael Tilson Thomas, Steve Reich and others on Angel Records S-36059

Music for 18 Musicians has been recorded by Steve Reich and Musicians for Polydor International for release on their new label in September 1977

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For concert and booking information outside of the United States please contact:  
Mr. Andrew Rosner, Allied Artists, 36 Beauchamp Place, London SW3 1NU

In the United States the activities of Steve Reich and Musicians are supported and administered by The Reich Music Foundation, Inc., and all contributions to the Foundation are tax-deductible.

The Reich Music Foundation, Inc., 16 Warren Street, New York, N.Y. 10007

## Notes on the Music

Clapping Music was composed in December of 1972. For some time I had wanted to do a piece for clapping so that no instruments would be necessary beyond the human body. At first I thought it would be a phase piece where both performers start in unison and then one gradually increases his tempo while the second stays put, but this turns out to be very hard to do while clapping and moreover, introduces a great difficulty in musical process (phasing) that is out of place with such an easy way of producing sound (clapping). The solution was to have one performer remain fixed, repeating the basic pattern throughout, while the second, after a number of repeats in unison, changes to the same pattern with its downbeat shifted over one beat. This abrupt change of downbeat position makes it difficult to hear that the second performer is in fact always playing the same original pattern as the first performer in each of the 12 different sections of the piece.

Pendulum Music first happened one afternoon in Boulder, Colorado in the summer of 1968 while I was working on a theatrical event with the artist William T. Wiley. It is an embodiment of my idea of music as a gradual process. That is, a musical process is set up which then runs by itself.

Violin Phase (1967) is one of a series of pieces all dealing with repeating figures gradually going in and out of phase with themselves. In Violin Phase the performer plays against one, then two, and finally three simultaneous tape tracks of himself. All the gradual shifts of phase are accomplished by the performer moving slowly ahead of the stationary tape. In two sections of the piece the performer gives a sort of auditory 'chalk talk' by simply playing one of the pre-existent resulting patterns in the tape a bit louder and then gradually fading out leaving the listener momentarily more aware of that particular pattern. The choice of these patterns (there are many of them) is largely up to the performer, and I want to thank Shem Guibbory for bringing out several very interesting ones.

Music for 18 Musicians is approximately 55 minutes long. The first sketches were made for it in May 1974 and it was completed in March 1976. Although its steady pulse and rhythmic energy relate to many of my earlier works, its instrumentation, harmony and structure are new.

As to instrumentation, Music for 18 Musicians is new in the number and distribution of instruments; violin, cello, 2 clarinets doubling bass clarinet, 4 women's voices, 4 pianos, 3 marimbas, 2 xylophones and metallophone (vibraphone with no motor). All instruments are acoustical. The use of electronics is limited to microphones for the voices and some of the instruments.

There is more harmonic movement in the first 5 minutes of Music for 18 Musicians than in any other complete work of mine to date. Though the movement from chord to chord is often just a re-voicing, inversion, or relative minor or major of a previous chord, usually staying within the key signature of three sharps at all times, nevertheless, within these limits harmonic movement plays a more important role in this piece than in any other I have written.

Rhythmically, there are two basically different kinds of time occurring simultaneously in Music for 18 Musicians. The first is that of a regular rhythmic pulse in the pianos and mallet instruments that continues throughout the piece. The second is the rhythm of the human breath in the voices and wind instruments. The entire opening and closing sections plus part of all sections in between contain pulses by the voices and winds. They take a full breath and sing or play pulses of particular notes for as long as their breath will comfortably sustain them. The breath is the measure of the duration of their pulsing. This combination of one breath after another gradually washing up like waves against the constant rhythm of the pianos and mallet instruments is something I have not heard before and would like to investigate further.

The structure of Music for 18 Musicians is based on a cycle of eleven chords played at the very beginning of the piece and repeated at the end. All the instruments and voices play or sing pulsing notes within each chord. Instruments like the strings which do not have to breathe nevertheless follow the rise and fall of the breath by following the breath patterns of the bass clarinet. Each chord is held for the duration of two breaths, and the next chord is gradually introduced, and so on, until all eleven are played and the ensemble returns to the first chord. The first pulsing chord is then maintained by two pianos and two marimbas. While this pulsing chord is held for about five minutes a small piece is constructed on it. When this piece is completed there is a sudden change to the second chord, and a second small piece or section is constructed. This means that each chord that might have taken fifteen or twenty seconds to play in the opening section is then stretched out as the basic pulsing melody for a five minute piece very much as a single note in a cantus firmus, or chant melody of a 12th century Organum by Perotin might be stretched out for several minutes as the harmonic center for a section of the Organum. The opening eleven chord cycle of Music for 18 Musicians is a kind of pulsing cantus for the entire piece.

On each pulsing chord one or, on the third chord, two small pieces are built. These pieces or sections are basically either in the form of an arch (ABCDCBA), or in the form of a musical process, like that of substituting beats for rests, working itself out from beginning to end. Elements appearing in one section will appear in another but surrounded by different harmony and instrumentation. For instance the pulse in pianos and marimbas in sections 1 and 2 changes to marimbas and xylophones in section 3A, and to xylophones and maracas in sections 6 and 7. The low piano pulsing harmonies of section 3A reappear in section 6 supporting a different melody played by different instruments. The process of building up a canon, or phase relation, between two xylophones and two pianos which first occurs in section 2, occurs again in section 9 but building up to another overall pattern in a different harmonic context. The relationship between the different sections is thus best understood in terms of resemblances between members of a family. Certain characteristics will be shared, but others will be unique.

One of the basic means of change or development in many sections of this piece is to be found in the rhythmic relationship of harmony to melody. Specifically, a melodic pattern may be repeated over and over again, but by introducing a two or four chord cadence underneath it, first beginning on one beat of the pattern, and then beginning on a different beat, a sense of changing accent in the melody will be heard. This play of changing harmonic rhythm against constant melodic pattern is one of the basic techniques of this piece, and one I have never used before. Its effect, by change of accent, is to vary that which is in fact unchanging.

Changes from one section to the next, as well as changes within each section are cued by the metallophone (vibraphone with no motor) whose patterns are played once only to call for movements to the next bar, much as in a Balinese Gamelan a drummer will audibly call for changes of pattern, or as the master drummer will call for changes of pattern in West African music. This is in contrast to the visual nods of the head used in earlier pieces of mine to call for changes and in contrast also to the general Western practice of having a non performing conductor for large ensembles. Audible cues become part of the music and allow the musicians to keep listening.

Music for Pieces of Wood (1973) grows out of the same roots as Clapping Music (1972); a desire to make music with the simplest possible instruments. The claves, or cylindrical pieces of hard wood used here were selected for their particular pitches (A, B, C#, D# and D# an octave above) and for their resonant timbre. This piece is one of the loudest I have ever composed, but uses no amplification whatsoever.

The rhythmic structure is based entirely on the process of rhythmic "build-ups", or the substitution of beats for rests and is in three sections of decreasing pattern length: 6/4, 4/4, 3/4.

Phase Patterns was composed in February of 1970. It consists of one rudimentary drum stroke, the paradiddle, played simultaneously on four identical organs. Each hand strikes certain notes and remains with them throughout, simply alternating, L-R-L-L-R-L-R-R. The keyboard is thus treated as a set of tuned drums.

The first two performers start playing the identical pattern in unison, and then one gradually increases his tempo ever so slightly so as to slowly move one eighth note ahead and out of phase with the second. The other two performers then double several of the many resulting patterns produced by this two-keyboard relationship. By gradually bringing these patterns up to the surface of the music, and then gradually down again, the listener is enabled to hear them, and many others, actually sounding within the overall pattern.

Four Organs was composed in January of 1970. It begins with a short, pulsing chord which gradually gets longer and longer in duration. As the chord stretches out, slowly resolving and unresolving, a sort of slow motion music heard. The maracas lay down a steady time grid of even eighth notes throughout, enabling the organists to play together while mentally counting up to as much as 200 beats and more on a given cycle of sustained tones.

Six Pianos (1973) grows out of the idea I had for several years to do a piece for all the pianos in a piano store. The Baldwin Piano and Organ Company, through their artist's representative, Mr. Jack Romann, made it possible for me to try and realize this idea during many evening rehearsals the fall and winter of 1972-73 in their store in New York. The piece which actually resulted is a bit more modest in scope since too many pianos (especially if they are large grands) can begin to sound thick and unmanageable. Using six small pianos made it possible to play the fast, rhythmically intricate kind of music I am attracted to while at the same time allowing the players to be physically close together so as to hear each other clearly.

The piece begins with three pianists all playing the same eight-beat rhythmic pattern, but with different notes for each pianist. Two of the other pianists then begin in unison to gradually build up the exact pattern of one of the pianists already playing by putting the notes of his fifth beat on the seventh beat of their measure, then his first beat on their third beat, and so on until they have constructed the same pattern with the same notes, but two beats out of phase. When this relationship has been

fully constructed, two other pianists then double some of the many melodic patterns resulting from this four piano relationship, and by gradually increasing their volume bring them up to the surface of the music and then, by lowering their volume, slowly down again, enabling the listener to actually hear them, and hopefully many other patterns, pre-existing in the on-going four piano relationship. The decisions as to which resulting patterns were most musical and what their order should be were made by Steve Chambers, James Preiss and myself during the course of rehearsals. This process of rhythmic construction followed by doubling the resulting patterns is then continued in three sections of the piece that are marked off by changes in mode, key and gradually higher position on the keyboard, the first being in D major, the second in E dorian, and the third in B natural minor.

Music for Mallet Instruments, Voices and Organ (1973) deals with two simultaneous, interrelated rhythmic processes. The first is that of gradually constructing, beat by beat, a duplicate of a pre-existing repeating musical pattern with the second being one or more beats out of phase with the first. This then triggers the second process of augmentation of another simultaneous but different repeating musical pattern. The first process of rhythmic construction is performed by marimbas against marimbas, and glockenspiels against glockenspiels. These rhythmic constructions, which have the effect of creating more fast-moving activity in the mallet instruments, then trigger the two women's voices and electric organ into doubling, quadrupling, and further elongating the durations of the notes they sing and play. When the marimbas and glockenspiels have built up to maximum activity, causing the voices and organ to have elongated to maximum length and slowness, then a third woman's voice doubles some of the short melodic patterns resulting from a combination of the four marimba players, using her voice to precisely imitate the sound of these instruments (exactly as in Part Two of Drumming). When the voices and organ get longer, so do the tones of the metallophone (vibraphone without vibrato). However, a bar of steel over an aluminum resonator tube rings for just so long and then decays into inaudibility, so that when the voices and organ have reached their maximum length the metallophone then begins playing rippling continuous sixteenth notes, moving as fast or faster than all the other mallet instruments in combination. After these sections where the voices and organ have reached their maximum length (based on the length of continuous tone a single breath can sustain), the marimbas and glockenspiels begin, one at a time, to abruptly move into unison with each other, thus allowing the voices, organ, and metallophone to begin reducing the length of their sustained tones. This paired process of rhythmic construction-augmentation followed by rhythmic reduction-diminution occurs four times in sections marked off by changes in key and meter. The first section is in F dorian 3/4, the second in A-flat dorian 2/4, the third in B-flat natural minor 3/4, and the fourth an A-flat dominant 11th chord 3/4.

Drumming (1971) took more than a year to compose and rehearse. It lasts continuously for about one and a half hours, and is divided into four sections which are played together without pause. The first section is for eight small tuned drums and male voices, the second for three marimbas and female voices, the third for three glockenspiels, whistling and piccolo, and the last section for all these instruments and voices combined.

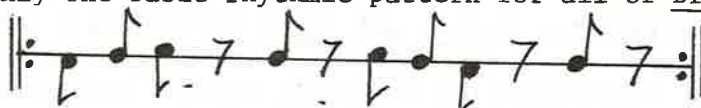
The basic assumption about the voices in Drumming was that they would not sing words, but would precisely imitate the sound of the instruments. The vocalists sing melodic patterns resulting from the combination of two or more sets of drums, marimbas, or glockenspiels playing the identical pattern one or more quarter notes out of phase with each other. By exactly imitating the sound of the instruments, and by gradually fading in the patterns the singers cause them to gradually rise to the surface of the music and then by fading out, to slowly subside allowing the listener to hear these patterns along with many others, actually sounding in the instruments. In the case of the drums this has necessitated using the male voice singing syllables like "tuk," "tok," "duk," and so on. For the marimbas, the female voice was needed using consonants like a soft "b" or "d" with a more or less constant "u" as in "you" vowel sound. In the case of the glockenspiels the extremely high range of the instrument precluded any use of the voice as such and necessitated whistling. Even this form of vocal production proved impossible when the instrument was played in its higher ranges, and this created the need for a more sophisticated form of whistle; in this case the piccolo. In the last section of the piece these vocal techniques are combined simultaneously with each imitating its particular instrument.

These sections are joined together by the new instruments doubling the exact pattern of the instruments already playing. Thus, at the end of the drum section there are three drummers playing the same pattern 2 quarter notes out of phase with each other. The marimbas enter softly with the exact same pattern played by three players also 2 quarter notes out of phase with each other. The drummers gradually fade out so that the same rhythm and pitches are continued with a gradual change in timbre. At the end of the marimba section three glockenspiels played in their lowest range exactly double three marimbas played in their highest range so that the process of maintaining rhythm and pitch while gradually changing timbre is repeated.



The transition from the glockenspiels to the last section of the piece for all the instruments and voices combined is made through a new musical process I have called construction and reduction. The very beginning of the piece begins with two drummers constructing the basic rhythmic pattern of the entire piece from a single drum beat, played in a cycle of twelve beats with rests on all the other beats. Gradually additional drum beats are substituted for the rests, one at a time, until the pattern is completed. The reduction process is simply the reverse where rests are gradually substituted for beats, one at a time, until only a single beat remains. The reduction at the end of the glockenspiel section leads to a reconstruction for the glockenspiels, marimbas, and drums simultaneously.

There is, then, only one basic rhythmic pattern for all of Drumming:



This pattern undergoes changes of phase position, pitch, and timbre, but all the performers play this pattern, or some part of it, throughout the entire piece.

--- Steve Reich

#### Steve Reich and Musicians

STEVE REICH was born October 3, 1936, in New York and raised in California and in New York. He graduated with honors in Philosophy from Cornell University in 1957, studied composition with Hall Overton from 1957-58 and at the Julliard School of Music from 1958 through 1961, and then received his M.A. in music in 1963 from Mills College in California where he studied with Darius Milhaud and Luciano Berio.

In 1966 he began his own ensemble with three musicians. Since that time he has performed his music with this group, Steve Reich and Musicians, now grown to eighteen throughout the United States, Canada and western Europe. In 1971 the premiere performances of Drumming were presented at The Museum of Modern Art, Brooklyn Academy of Music, and Town Hall. Also in 1971 Phase Patterns was performed in Pierre Boulez's first series of Prospective Encounter concerts, and Four Organs was performed with Michael Tilson Thomas, Steve Reich, and members of the Boston Symphony Orchestra at Symphony Hall in Boston. This latter performance was repeated in New York at Carnegie Hall in 1973.

He has published scores and/or articles in the New York Times, John Cage's Notations, the Anti-Illusion catalog of the Whitney Museum of American Art, Source Magazine, Aspen Magazine, the German quarterly Interfunktionen, and the French quarterlies VH-101 and Attitudes. His book of collected essays, Writings about Music was published by New York University Press in 1974.

His recordings include Come Out released by CBS Odyssey records in 1967, It's Gonna Rain and Violin Phase released by Columbia records in 1969, Phase Patterns and Four Organs released by the small French label Shandar in 1971, a limited edition recording of Drumming with complete score produced by the art publisher Multiples in New York in 1972, another recording of Four Organs released by Angel-EMI records in 1973, and a three record set including Drumming, Six Pianos and Music for Mallet Instruments, Voices and Organ released by Deutsche Grammophon in January 1975. Music for 18 Musicians will be released on a new Polydor International label in September 1977.

During the summer of 1970 with the help of a travel grant from the Institute of International Education he studied drumming with a master drummer of the Ewe tribe at the Institute for African Studies in Ghana. During the summer of 1973 he studied Balinese Gamelaan Semar Pegulingan with a Balinese teacher at the American Society for Eastern Arts Summer Program at the University of Washington. In 1974 he was awarded grants from the National Endowment for the Arts, the New York State Council on the Arts, and was an artist in residence in Berlin at the invitation of the D.A.A.D. He is presently studying the traditional forms of cantillation (chanting) of the Hebrew scriptures.

RUSSELL HARTENBERGER was born on July 21, 1944 in Watonga, Oklahoma. He received a M.M. in percussion from Curtis Institute under Fred D. Hinger; an M.M. in percussion from Catholic University under Alan Abel, and a Ph.D. in Ethnomusicology from Wesleyan University while studying African drumming with Abraham Adzenyah, Javanese gamelan with Prawotosaputro, mridangam with Ramnad D. Raghoven and tabla with Sharda Sahai. During the summer of 1971 he studied African drumming in Ghana. He has performed with the orchestras of Oklahoma City, Puerto Rico, New Haven, the Philadelphia Lyric Opera, and the Marlboro Music Festival. He is presently a member of the percussion ensemble Nexus, and teaches percussion at the University of Toronto in Canada.

STEVE CHAMBERS was born July 21, 1941 in Dallas, Texas, and raised in Louisiana. He studied piano with Edgar Davis at the University of Southwestern Louisiana, and with Mildred Dasset at the Manhattan School of Music. He has been playing with Steve Reich and Musicians since 1969. At present he is an architecture student at the Cooper Union in New York City, and will enter Yale School of Architecture in the fall of 1977.

JAMES LEE PREISS was born October 17, 1941, in Shakopee, Minnesota. He attended the Eastman School of Music, where he received his Bachelor of Music degree in 1963. From 1963 to 1967 he performed with the U.S. Marine Band as timpanist and marimba soloist. He was appointed to the faculty of the High School of Music and Art in New York in 1969, and to the faculty of the Manhattan School of Music in 1970. He has performed as percussionist with the Eastman Wind Ensemble, Eastman Philharmonia, American Wind Symphony, Philadelphia Composer's Forum, the American Percussion Ensemble, and the Manhattan Percussion Ensemble. At present he performs on a free-lance basis in the New York City area.

JAY CLAYTON was born October 28, 1941 in Youngstown, Ohio. She studied music at Miami University of Ohio and graduated in 1963. Shortly after this she came to New York City where she has been singing Jazz and New Music with various groups and composers. In 1974 she founded the Voice Group, an innovative improvisational vocal ensemble which performs her compositions as well as works by other composers who write for the voice in new ways. In addition to performing with Steve Reich, she is currently performing with composer-pianist Kirk Nurock and with a contemporary Jazz group called the Jankry Ensemble.

BOB BECKER was born on June 22, 1947 in Allentown, Pennsylvania. He received his Bachelor's and Master's degrees from the Eastman School of Music, and is presently completing a Ph.D. in World Music at Wesleyan University. He has been a student of Javanese gamelan with Prawotsaputro and Sumarsam, and studied Ghanian drumming with Abraham Adzenyah, tabla with Sharda Sahai, and mridangam with Ramnad Raghavan. He has been percussionist and timpanist at the Marlboro Music Festival and presently performs with the percussion ensemble Nexus. He teaches percussion at York University in Toronto.

GLEN VELEZ was born October 5, 1949 in Dallas, Texas, and began studying mallet instruments at the age of 15. He graduated from the Manhattan School of Music, having studied with Fred Hinger. During 1968 through 1971 he was a member of the U.S. Army Band stationed at Worms, West Germany. From 1971 to '72, he was with the ETC Theatre Company of LaMama, and toured Europe with them during the summer of 1972 performing in Vienna, Amsterdam and Spoleto. He is presently performing on a free-lance basis in the New York City area.

PAMELA WOOD FRALEY was born March 9, 1944 in San Francisco and spent her early years in Richmond, Virginia. She began studying piano with her mother at the age of 3. She graduated summa cum laude from the Howard University School of Music. She has studied voice in Boston with Donna Roll and David Blair McClosky since 1969. Since 1970 she has been Director of the Department of Music Theory and Education at the Elma Lewis School of Music at the National Center of Afro-American Artists in Boston. In 1972 she was runner-up in the New England Regional Auditions of the Metropolitan Opera Company. Besides appearing in several network television broadcasts, she sang in the American Revolution Bicentennial Commission film, "We Hold These Truths", distributed in 1976. She appeared as soloist in Bach's Cantata No. 51 with the North Shore Philharmonic in Lynn, Massachusetts in 1975. She performed in Steve Reich's Music for Mallet Instruments, Voices and Organ with the Boston Symphony, conducted by Michael Tilson Thomas in January 1974, and joined the present ensemble later that year.

DAVID VAN TIEGHEM was born on April 21, 1955 in Washington, D.C. He studied percussion privately with Justin DiCiocci from 1971 to 1973, having been self-taught for 4 years previously. He was a student of Paul Price at the Manhattan School of Music from 1973 to 1975, where he performed in the Manhattan Percussion Ensemble. During the summer of 1972 he toured Europe as a percussionist with the American Youth Symphony of Winds. He is presently performing with the Flying Hearts, the Judith Scott Dance Theater, and on a free-lance basis in the New York City area.

GARY SCHALL was born March 1, 1955 in Brooklyn, N.Y. He has attended the Manhattan School of Music and studies percussion presently with James Preiss. He has also studied and performed with the Brooklyn College Percussion Ensemble under the direction of Morris Lang. In the summer of 1973 he performed with this ensemble on a State Department tour of Roumania. He has also played with the Manhattan Percussion Ensemble under the direction of Paul Price.

SHEM GIBBORY began his study of the violin at the age of 4 under the direction of his older brother, Yenoin. He left High School at the age of 14 to accept a full scholarship from the California Institute of the Arts, and graduated in 1974. Concertmaster of the orchestra, he also performed throughout the Los Angeles area with I Solioisti di Valencia, Tones Roads West (a contemporary chamber ensemble) and with the Los Angeles Festival Chamber Orchestra. Twice a scholarship participant at the Norfolk Music Festival, he has also performed under the direction of Alexander Schneider at Carnegie Hall, the Kennedy Center, and at the 1976 Casals Festival in Puerto Rico. His teachers



have included John Masters, Marjorie Hogg, Romualdo Tecco and Yoko Matsuda (also studying briefly with Erick Friedman, Joachim Chassman and Ivan Galamian). While continuing his studies with the Broadus Erle of Yale, and playing with the New Haven Symphony and Yale Philharmonic Orchestra, he performs regularly with the New Haven Chamber Ensemble.

NURIT TILLES, pianist, studied at the Juilliard School with Rosetta Goodkind, at Oberlin Conservatory (B. Mus. 1973) with Freeman Koberstein, and at S.U.N.Y. Stonybrook (M. Mus. 1976) with Gilbert Kalish. She began performing with Steve Reich in 1974 while studying tabla with Anand Bodas and Sundanese Gamelan with Nugraha Sudiredja at the Center for World Music in Berkeley. Since 1969 she has been an active performer of traditional and new chamber music, ragtime, and works for prepared piano. She was a member of The Oberlin Trio in 1972-74 and now performs with the Ars Nova Trio and does free-lance work in New York. Recently she appeared in chamber recitals at the Albany Institute of History and Art and in the "Artists Series" at Connecticut College.

GEORDIE ARNOLD was born July 17, 1950 in San Francisco. She is currently performing music from the classical and new music repertoire in the New Haven area. She studies voice privately with Mrs. Marga Mueller, and has also been a classical voice pupil of Mr. Richard W. Donohue, Miss Vera Osborne and Nining Sekarningsih (Sundanese chamber music). She has also studied composition with Edmund Haines, Ivan Tcherepnin, Robert Moran and Alvin Lucier.

REBECCA ARMSTRONG was born October 19, 1950 in South Bend, Indiana. She began studying voice with Helen Merritt of New York at the age of 16, and continued with Howard Hatton of the Oberlin Conservatory. While at Oberlin she worked with the Collegium Musicum and with the Javanese Gamelan (as an instrumentalist), and served apprenticeships in musical instrument construction and repair, graduating with a B.A. in music in 1973. She has performed with the Pro Arte Chorale, the New York Handel Opera Society, Lincoln Center's Mostly Mozart Festivals, and was a madrigalist for one season with the American Shakespeare Festival in Stratford, Connecticut. Presently she is performing on a free lance basis in the New York City area and is an architecture student at the Cooper Union.

LARRY KARUSH was born in Chicago, October 6, 1946. He began studying music seriously in the San Francisco Bay Area in 1968.

VIRGIL BLACKWELL was born in 1942 in Texas. He is a graduate of the Juilliard School of Music and clarinetist with Speculum Musicae, C.C.E., Group for Contemporary Music and many other contemporary chamber groups in New York City. He has premiered works with E. Carter, L. Berio, P. Boulez, C. Wourinen, D. Martino. His recordings have been with RCA, Desto, Nonesuch, CRI and Phillips.

RICHARD COHEN was born in 1946 in St. Louis. His musical training included study at the Mannes School of Music in New York City. He has worked extensively with the LaMama Experimental Theatre Co. including two European tours. He also worked with Peter Brook in the International Center for Theater Research. He presently performs on a free lance basis in the New York City area.

MICHAEL FINCKEL was born in Bennington, Vermont in 1945. He studied cello with his father, George Finckel and with Franz Lorenz, Pietro Grossi, John Frazer and George Neikrug. He attended the Oberlin Conservatory 1964-65. Mr. Finckel has studied composition with Henry Brant and Louis Calabro, and has taught cello at Bennington College and Cornell University. He has recently performed with the Philadelphia Composer's Forum, Ysaye String Quartet and Finckel Cello Quartet.

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