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Color and sound interrelated

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**COLOR AND SOUND
INTERRELATED**

**A Project Report
Presented to
The faculty of the Department of Art and Design
San Jose State University**

**In Partial Fulfillment
of the Requirements for the Degree
Master of Arts**

**By
Louise A. Beattie
December 1998**

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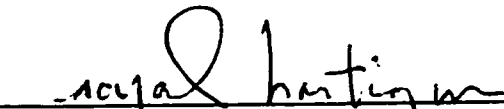
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ABSTRACT
COLOR AND SOUND
INTERRELATED

by Louise A. Beattie

This Creative Project Report is centered around those queries that deal with the interrelationship that is felt to exist between music and painting or, as viewed in the more encompassing aspect, the interrelationship between color and sound. Research reveals that the subject has been addressed by prominent philosophers, scientists, writers, composers, musicians, and painters over the past centuries.

Philosophical, theoretical, and scientific studies pertaining to color and sound similarities concerning wave lengths, frequencies, and vibrations have been presented in this report. The physiological as well as the intellectual perception of color hearing, the synesthesia concept, is addressed. Consideration and weight is given to the painter-composer pairing-off concept held by art critics and commentators. Finally, this Creative Project Report presents several interrelated color and sound performance projects that challenge and give supportive evidence to those theories that conceive of a strong interrelationship between music and painting – between color and sound.

TABLE OF CONTENTS

SECTION	PAGE
I PROJECT REPORT: <i>COLOR AND SOUND, INTERRELATED</i>	1
II CATALOG	22
Plate 1 <i>Ragas. The Music of India</i> Musical Score Paintings	24
Plate 2 <i>Ragas. Sound, Color and Sentiment Chart</i>	25
Plate 3 <i>Raga. Duration of Day and Night. 4:00 A.M. to 7 A.M.</i> Musical Score Paintings.....	26
Plate 4 <i>Raga. Duration of Day and Night. 7:00 A.M. to 12:00 Noon</i> Musical Score Paintings.....	27
Plate 5 <i>Raga. Duration of Day and Night. 12:00 Noon to 4:00 P.M</i> Musical Score Paintings.....	28
Plate 6 <i>Raga. Duration of Day and Night. 4:00 P.M. to 7:00 P.M</i> Musical Score Paintings.....	29
Plate 7 <i>Raga. Duration of Day and Night. 7:00 P.M. to Midnight</i> Musical Score Paintings.....	30
Plate 8 <i>Raga. Duration of Day and Night. Midnight to 4:00 A.M</i> Musical Score Paintings.....	31
Plate 9 <i>Combined Arts Improv Ensemble Concert</i> Time Line Chart	32
Plate 10-15 <i>Combined Arts Improve Ensemble Concert</i> Musical Phrase Guide.	33
Plate 16 <i>Tong Man. Photography 3"x5"</i> 1921 Silent Film.....	39
Plate 17 <i>Tong Man. Color Transparency 3"x5"</i>	40
Plate 18 <i>Father and Daughter. Conversation. Photography 3"x5"</i> 1921 Silent Film.....	41

TABLE OF CONTENTS

SECTION	PAGE
Plate 19	<i>Tong Parlor.</i> Color Transparency 3"x5" 42
Plate 20	<i>Poison Incense.</i> Color Transparency 3"x5" 43
Plate 21	<i>In The House.</i> <i>e a d g b e.</i> Color Transparency 3"x5" 44
Plate 22	<i>Fight.</i> <i>Walking bass.</i> Color Transparency 3"x5" 45
Plate 23	<i>Chase.</i> <i>Scat Swing Line.</i> Color Transparency 3"x5" 46
Plate 24	<i>The Spider's Web.</i> <i>Flamenco.</i> Color Transparency 3"x5" 47
Plate 25	<i>Getaway!</i> <i>Spiralling Sound Mass.</i> Color Transparency 3"x5" 48
Plate 26	<i>Gun Shot.</i> <i>Opposing Dynamics.</i> Color Transparency 3"x5" 49
Plate 27	<i>Slow Boat.</i> <i>Swing Arrangement.</i> Color Transparency 3"x5" 50
III.	BIBLIOGRAPHY 51

COLOR AND SOUND

INTERRELATED

Awareness of, and knowledge about the mutual relationship between color and sound reaches back into the earliest of times. Aristotle, in his writings between 384 and 322 BC, makes reference to an interrelationship between color and sound. "It is possible," he writes, "that colors may stand in relationship to each other in the same manner as concords in music, for the colors, which are in proportions corresponding with the musical concords, are those which appear to be the most agreeable." (Goethe, trans. 1967: 418)

Sir Issac Newton (1643-1727) in his work *Optics* "developed mathematical similarities between certain colour rings and the chord." Newton also makes reference to the color and sound correlation when in his *Queries* he states: "May not the harmony and discord of colours arise from the proportions of the vibrations propagated through the Fibers of the optic Nerves into the Brain, as the harmony and discord of Sounds arise from the proportions of the Vibrations of the Air? For some Colours, if they be viewed together, are agreeable to one another, as those of Gold and Indigo, and others disagree." (Nicolson, 1963: 86)

In the Seventeenth Century a Jesuit, Athanasius Kircher, student of Sir Issac Newton, writes, "If at the time of a fine concert we could see the air stirred by all the vibrations communicated to it by the voices and instruments, we should be surprised to see it filled with the liveliest and most finely blended colors." (Belmont, 1944: 220)

In the next century a Jesuit, Pere Louis Bertrand Castel, further developed this concept by creating a color-clavichord that interlinked color and sound. It was felt that by this means, the deaf could experience the 'beauty of music' in the same way as those who hear.

Johann Wolfgang Goethe (1749-1832), the German literary giant, explains his concept of the interrelationship of color and sound in terms that differ from the mathematical and scientific similarities as conceived by Newton and Newton's students and followers.

In his literary works Goethe recognizes that there is a certain relationship that exists between color and melody. He explains his understanding of this relationship in this manner:

Color and sound do not admit of being directly compared together in any way, but both are referable to a higher formula, both are derivable, although each for itself, from this higher law. They are like two rivers which have their source in one and the same mountain, but subsequently pursue their way under totally different conditions in two totally different regions, so that throughout the whole course of both no two points can be compared. Both are general, elementary effects acting according to the general law of separation and tendency to union, of undulation and oscillation, yet acting thus in wholly different provinces, in different modes, on different elementary mediums, for different senses. (Goethe, trans. 1967: 298-299)

In his book *Theory of Colors* Goethe gives a rich analysis of the aesthetic powers of colors as they relate to moods, attitudes, sentiments, or emotional states. Goethe's color analysis considerations indicate that:

Yellow excites a warm and agreeable impression. Hence in painting it belongs to the illumined and emphatic side It may be said that Blue brings a principle of darkness with it. As a hue it is powerful, but it is on the negative side. In its highest purity it is, as it were, a stimulating negation. Its appearance then is a kind of contradiction between excitement and repose Blue deepens very mildly into Red and thus acquires some what of an active character, although it is on the passive side This colour (Red) conveys an impression of gravity and dignity and at the same time of grace and attractiveness. The first in its deep dark state, the latter in its attenuated tint, and thus the dignity of age and the amiableness of youth may adorn itself with degrees of the same hue. (Goethe, trans. 1967: 307, 310-312, 314-315)

The early part of the twentieth century finds the Russian Composer, Alexander Skryabin (1872-1915), experimenting with the interlinking of color and sound. This musician, who was also viewed as a mystic:

Saw the structuring of his musical sounds as emotions and feelings that related to colour combinations. He was completely enveloped in the act of creativity, and to pursue the development of his musical sound expressions, he created a colour keyboard called the *Tastiera per luce*, or *light-keyboard*; the music is in two parts, one part giving notes (colours) that change very slowly, ten times in all, each one lasting about two minutes. The second part reflects the harmonic patterns of the music, the note (colour) corresponding to the harmonic tonic at any given moment, and so it changes constantly, sometimes very rapidly. The following chart, showing the interrelationship of colour to sound, was given by Saveneyev (who knew Skryabin well):

C	Red	F [#]	Bright Blue
G	Orange	D ^b	Violet
D	Yellow	A ^b	Purple
A	Green	E ^b	Steel
E	Pale Blue	B ^b	Steel
B	Pale Blue	F	Dark Red

The purpose lying behind the Skryabin keyboard is to envelope the listener in colour and light as the music proceeds. Skryabin's usage of abstract colour is of an exceedingly primitive kind, whereas the music is exceedingly sophisticated. Skryabin simply believed that the experience of colour would enhance the experience of sound. . . . He suggested that an audience will absorb the sense of experience if it is bathed in colour light corresponding throughout to the harmonic flow of the music. (Macdonald, 1978: 56-57)

In the latter half of the nineteenth century, and during the first half of the twentieth century, the Russian painter Wassily Kandinsky (1866-1944) is said to have

been *painting music* when he engaged in his creative works. In his writings Kandinsky speaks mainly of how the visualization of line, form, and color interrelates with audible musical rhythms and harmonies and can have the same spiritual or emotional effect on the listener and viewer recipient. Kandinsky perceives that:

Color can exercise enormous influences over the body as a physical organism. In the spiritual sphere, colors produce an inner vibrational effect on the viewer Color is a power that directly influences the soul. Color is the keyboard – the eyes are the hammers – the soul is the piano with many strings. The artist is the hand that plays – touching one string or another to cause vibrations in the viewer. (Kandinsky, trans. 1977: 24-25)

When speaking of the emotional or spiritual qualities of a color Kandinsky makes reference to musical instruments that awaken emotions that correlate to the same feelings or emotions being expressed by the colors:

Yellow if gazed steadily at in any geometrical form has a disturbing influence and reveals an insistent aggressive character Medium yellow and light warm red has a certain similarity to medium yellow, alike in texture and appeal, and gives a feeling of strength, vigor, determination, and triumph. In music it is like the song of trumpets – strong, harsh, and ringing An intermixture of Brown with Red is outwardly barely audible, but there rings out a powerful inner harmony. The vermilion rings like a great trumpet or thunders like a drum. The glow of red is within itself Orange is like a man convinced of his or her own power. Its note is like that of the Angeles, or of an old violin. Orange is red brought nearer to humanity by yellow Blue creates a feeling of rest – supernatural rest – and of distance In music a light blue is like a flute, a darker blue a cello; still darker a thunderous base; and the darkest blue of all an organ. As blue sinks toward black it echoes a grief that is hardly human A well balanced mixture of blue and yellow produces green. Green is the most restful colour that exists. In the hierarchy of colours, green is the bourgeoisie – the self-satisfied, the immovable, the narrow Green is the colour of summer, the period when nature is resting from the storms of winter and the productive energy of spring. Any preponderance in green of yellow or

blue introduces a corresponding activity and changes the inner appeal. The green keeps its characteristic equanimity and restfulness – the former increasing with the inclination to lightness, the latter with the inclination to depth. In music the absolute green is represented by the placid middle notes of the violin. . . .

All I have said of these simple colours is provisional and general, and so also are all those feelings that have been quoted as parallels of the colours. For these feelings are only the material expressions of the soul. . . . The art of the future lies among innumerable and varied combinations of the arts. . . . The actual expression of colour can be achieved simultaneously by several forms of art, each art playing its separate part and producing a whole which exceeds in richness and force any expression attainable by one art alone. The immense possibilities of depth and strength to be gained by combination or by discord between the various arts can be easily realized. (Kandinsky, trans. 1977: 37-38, 40, 41, 42)

Ira J. Belmont, a painter in early twentieth century America, feels he can lay claim to be the originator of the school of *color-music expressionism* in painting. Belmont began employing his natural gift of synaesthetic perception (the ability to see color when hearing sounds) after many successful years as a portrait painter.

Belmont suggests that color-hearing can be activated through the recognition and understanding of the theory of vibration. Belmont's theoretical discussions consider the relationship of pitch to the musical scale and to colors:

In the musical scale each note differs from the other in the matter of pitch; and pitch, as we have seen, is the rate of vibration per second. . . . A band of colors – red, orange, yellow, green, blue, indigo, violet, appears when a light beam is intercepted by a prism. These colors also have different vibrational pitch levels Light – like sound – has a definite wavelength for each vibration period The vibration rate per second increases from red to violet. The wavelength of the slowest vibration – to wit – red, is the greatest – the same as in sound – and the shortest is that of the most rapid – violet

The spectrum, therefore, suggests the musical scale. It is quite reasonable to believe that if one wishes to paint music, he may follow

out this idea of the correspondence of the colors of the spectrum to the musical scale. (Belmont, 1944: 224-225)

Visual-auditory synesthesia studies (synesthesia – known also as chromesthesia or colored-hearing) were conducted in 1981 by Donald J. Polzella and David W. Biers of the University of Dayton. Research studies define color-hearing, or chromesthesia, as a phenomenon in which colored images are evoked by auditory stimuli:

Subjects reported the color of their mental images as they listened to a series of 12 preludes chosen from J.S. Bach's *Well-Tempered Clavier* The results of these experiments revealed that specific color responses tended to be elicited by preludes in specific keys and of certain tempos and meters Previous research has indicated that the link between chromesthetic responses and music are mediated by attributes common to both visual and auditory experience. (*Polzella and Biers, 1987: 439*)

The scientist J. C. Cole, in her writings, asserts that:

This mental echoing of color when hearing sound is the resonance, the sympathetic vibration, that is behind the very nature of matter, not to mention the sound of music, the color of autumn leaves, the rings of Saturn, the spectral lines that write the signatures of stars, and, according to one source, even the evolution of life. (Cole, 1987: 51)

The architect Gyorgy Doczi, in his 1981 writings, ventures into this area of likenesses between disciplines. Doczi puts forth the belief that his theoretical projections can be viewed as, "an interdisciplinary venture into the no-man's land between the borders of science, art, philosophy and religion. This area, that deals with proportions and looks to the rediscovery of new proportions, bears investigation, since the powers that shape our lives and our values have their source here." (Doczi, 1981: 51)

Doczi speaks of creating harmonious relationships out of differences. He

speaks of a particular kind of correspondence of color to the musical scale. Through diagram (Table 1), Doczi illustrates that, "Light, color, and sound share the same wave patterns, and the same vibration rates. Diagram A, indicates that the experience of harmonious rhythms is shared by the eye and the ear, even though one registers it as color and the other as sound." (Doczi, 1981: 51)

Doczi's diagram B (Table 1), illustrates the shared harmonies of colors and musical chords:

The double 3-4-5 triangles indicate the tonic chord A minor (A-C-E), corresponding to indigo-green-orange on the color wheel, which might be seen when an orange tree is in fruit and the leaves cast dark blue shadows. The tonic chord G major (G-B-D) corresponds to violet-blue-yellow, the color of an iris or violet under a sunny blue sky The essence of all vibration and rhythm is a sharing of diversities – weak and strong, in and out, up and down, back and forth, – at recurrent time intervals. This holds as true for the tides of the ocean, as for our heartbeats; for light, weight and sound as well as for plant growth. (Doczi, 1981: 51)

The writer Claude Samuel has this to say about the contemporary composer Olivier Messiaen (1908-1992); "Messiaen, we might say, is a musical monument, a glorious name whose works have entered the ranks of twentieth century classics His music is tender, violent, expressive, often magical, and always *colorful*." (Messiaen, 1994: 261)

Olivier Messiaen, in his conversations with the writer Claude Samuel, explains his convictions concerning natural resonance:

The phenomenon of natural resonance is analogous to that of complementary colors in the sense that one acts on our ear, the other on our eyes. When I hear music, I see in my mind complexes of colors corresponding to complexes of sounds, so it is understandable that color interests me as well as sound My chords are colors, engender *intellectual* colors, which evolve along with them

As an example I'll give you the colors of a chord of transposed inversions on the same bass note. If my bass note (low pitched note) is C[#], the fundamental will be on C[#] (or D^b enharmonically). With the fundamental on C[#], the upper range (in the chord of tones), is the color of rock crystal and citrine, the lower range of copper with gold highlights. In the first inversion on C[#], the colors move into a wide expanse of sapphire blue, rimmed with less intense blue (fluorine blue, light chartreuse blue) and with outer rims of violet. The second inversion on D^b is orange, with stripes of pale yellow, red, and gold. The third inversion on D^b, from high to low, moves through pale green, amethyst, and black

I see these colors inwardly, this is not imagination, nor is it a physical phenomenon. It is an inward reality I do indeed try to translate colors into music; for me certain sound complexes and sonorities are linked to complexes of colors I use them (the sounds), like colors, juxtapositioning them and putting them into relief one against the other, as a painter enhances one color with its complement. Without suffering from physiological synesthesia, when I hear a score, or read it, hearing it in my mind, I visualize corresponding colors which turn, shift, and combine just as the sounds turn, shift, and combine, simultaneously. (Messiaen, 1994: 62, 64-65, 40-41, 37)

Messiaen's discussions of how he relates to the works of those artists whose creativity is expressed through paintings makes its own kind of special contribution to the color and sound interrelationship concept:

I prefer one painter above all others, not only because he is the precursor of abstract painting, and consequently very close to what I see when I hear music, but mainly because he established connections between complementary colors in a very subtle, yet very violent manner, especially through the principle of simultaneous contrast, (that is to say, of complementary colors evoked by the eye of the observer): that painter is Robert Delaunay. (Messiaen, 1994: 43)

Messiaen comments on the following pairing-off combinations of painters and composers that have been suggested by art critics and commentators: Debussy-Cezanne; Picasso-Stravinsky; Klee-Webern; Kandinsky-Schoenberg.

Messiaen feels that every era has its own peculiar influence on the artist, that

is, on the musician, on the painter, on the photographer, on the writer, and even, on the scholar. Messiaen points out that strong ties between music and painting, between color and sound, began to develop with the advent of modernism, during the first half of the twentieth century.

When speaking of the Picasso-Stravinsky alliance, Messiaen views the transformation of reality as found in Pablo Picasso's work *Les demoiselles d'Avignon*, and Igor Stravinsky's music for *The Soldier's Tale*, as a reflection of the *spirit of the times*. Messiaen defines this kind of aesthetic distortion as the tie that holds these two artists together.

It has been pointed out that Picasso's treatment of space, line and textures involves a breakthrough to unexpected emotions and states of mind. The composer Stravinsky creates a breakthrough in his music by putting a form of collage – of new sound arrangements – in his music. In *The Soldier's Tale* the composer combines sounds from instruments that are not usually played together. Sounds from the trombone, the violin, clarinet, trumpet, and snare drum, played simultaneously, create a new and striking arrangement of musical sounds that express the upheaval of the times. Stravinsky is collaging different ideas and different musical instruments in combination, just as a painter combines and collages different forms and textures.

Messiaen is in agreement with the Klee-Webern combination, feeling that both created short works – very refined, while he feels that the team, Kandinsky-Schoenberg, does not seem to fit. He points out that Kandinsky's colors can be violent and jarring, while he sees the music of Schoenberg as being insidiously gray. He states further that the pairing-off of Monet-Debussy exists for him, but not a Cezanne-Debussy combination. Messiaen explains his own personal preferences as he makes this statement:

Closer to our time I love a painter like Monet. For me his *Water Lilies* represents the pictorial equivalent of Debussy's music. Is it

Impressionism? I don't know if the result is an impression, but what mainly sticks in my mind is the painting's extremely shimmering coloration In Cezanne there is a geometric aspect that doesn't exist in Debussy. Debussy's music is more fluid, more undulating, less precise. (Messiaen, 1994: 44, 46)

The above theories and analytical deductions become important core concepts to the visual artists who conceive of creating imagery that can serve to translate colors into musical sounds. This type of involvement with color-sound theories follows the current psychological thinking that puts the location of the perception of sight and hearing in the mind rather than in the visual and oral senses.

When the hearing of a sound is not concomitant with the sensation of a color, mental effort is needed to establish the connection or crossover of the two senses – the aural and the visual. Past scientific studies conceive of, and present scientific studies echo, the theory that the ability to express a musical sound in response to the viewing of a color, is a mental ability that lies dormant and unused in the individual. This kind of mental ability needs to be awakened consciously and needs to be encouraged and nurtured – consciously.

Interdisciplinary studies concerning the color and sound interrelationship can be given meaningful expression when in collaboration with an improvised music studies system. It is with this kind of interaction – when the visual artist begins to make contact with various musical groupings – that a sensitivity to the similarities between color and sound are alerted and put into action. The musical groups, or the individual musicians, are involved in the creating of music as vocalists, percussionists, pianists, violinists, guitarists, saxophonists, trombonists, and so on. The sounds that these musicians create, through the use of improvisational skills and techniques, are the sounds that a visual artist will find to be particularly challenging. The musicians,

through the use of improvisational skills, awaken, alert, and heighten the imaginative, intuitive, and spiritual instincts. The creative intuitive language of the musician is like a sympathetic vibrational echo of the creative, intuitive, language of the visual artist.

A group of musicians and visual artists gather to define, explore and develop the process of improvisation. Exploration begins when either the musician or the visual artist makes an aesthetic statement in his own particular field of artistic expression. The initial expression is challenged and extended by either discipline. Musical pulsations, phrasings, and melodic patterns grow out of the musical soundings. Colors, shapes, forms and textures find a place on the imagery page.

This is the time when visual and aural artists look inward and put their imagination to work. The integrated aural and visual group listens closely to one another and a color-sound unified aesthetic finds expression.

The thin, clear note phrasings improvised by the violinist can be given consideration by both aural and visual participants. A tremolo sound, or the pure rich sax and guitar tones may grab the attention of the performers. The participating artists become increasingly aware of the subtle musical and visual interactions that are developing. The senses are alerted to the pulsations of the underlying rhythms that are being created. The interacting performers become sharply alerted to the hush of the silences.

The Buddhist Zen philosophy regarding silence, embraces the idea that:

Sound enhances silence and silence enhances sound. This emphasis on silence conforms with Zen ideas concerning the importance of emptiness and space. The musician who is aware of space or interval (ma – the relationship between sound and silence), begins the notes with an instinctive care for the length and quality of the silences before and after. 'Good Ma' in music refers to the sounds and silences and their proportion to one another. (Titon, 1996: 382)

Mai Mai Sze, in her book *The Way of Chinese Paintings*, refers to the 'Good Ma' concept relative to painting. In painting, 'Good Ma' is thought of as a relationship between emptiness and activity, in the sense that:

The space between the spokes of a wheel make the wheel of use, the inner space and not the pottery of a pitcher is its essential part, and the space within four walls composes the usefulness of a room. . . .

The Tao of Chinese Painting has also been designated as the 'Great Void which contains everything.' Such words as *hsu* and *k'ying*, both meaning emptiness, assumed great importance in Taoist works. Space of any sort in painting was regarded as filled with meaning since it was filled with Tao, in fact was Tao, an idea that inevitably had a profound influence on painting. . . . Emptiness, in the Taoist sense, is the equivalent of *wu wei*; the cessation of all action and the suspension of thought in order to allow freedom of the inner activity of the spirit. (Mai-Mai Sze, 1959: 18)

The contemporary composer John Cage (1912-1992) addresses the importance of silences, not from the viewpoint of freeing the inner activity of the spirit, but from the viewpoint of the new indeterminate music:

In the new music nothing takes place but sounds; those that are noted and those that are not. Those that are not noted appear in the written music as silences opening the doors of the music to the sounds that happen to be in the environment Nothing was lost when everything was given away. In musical terms, any sound may occur in any combination and in any continuity. (Cage, 1961: 7-8)

A visual artist, interacting with the group, will have begun to acquire an understanding of the language of the musician. A visual artist will have begun to interpret the ways in which the musician finds expression for the essence or flavor of the inner spirit, as well as for the essence or flavor of the environment. The interacting artists begin to focus on the ways in which the language of the one interrelates and harmonizes or lies in discord with the language of the other.

How, in the language of the visual, does an artist represent a melodic interval as

compared to a harmonic interval? How does a visual artist indicate a major chord from a minor chord? What kind of markings will describe the environment, the silences or pauses between intervals, the accidental sounds that might be present in the silences?

From reflection on those theories and philosophies that have been explored over the past decades by psychologists, physiologists, scientists, painters, and composers the visual artist can begin to find ways to put into the language of the visual the melodic or harmonic interval note structure as well as the silences that are a part of a visual-aural event.

A color-sound chart is needed as a means of finding a way to begin intellectualizing about the interrelationship between color and sound. Theorist Johannes Itten's star-shaped version of the color sphere makes a contribution toward this need. (Van Hagen, trans., 1970: 31)

Johannes Itten is said to have been attentive to the philosophies of many cultures. His color concepts show appreciation and understanding of the wisdom of the ancient Chinese and Hindus. "Itten has a wide knowledge of art in all nations and among all peoples. He has a keen perception of the old masters and writes with rare enlightenment on their color expression. He has taken a vital part in modern art movements." (Van Hagen, trans., 1970: 4)

Johannes Itten makes reference to the correlation between color and sound when referring to Newton's use of a triangular prism to disperse and analyze white sunlight into the colors of the spectrum. In Itten's words:

Each hue can be accurately defined by specifying its wave length or frequency. . . . The light waves are not in themselves colored. Color arises in the human eye and brain. Light waves are a particular kind of electromagnetic energy. . . . The harmonic interval from red to violet is approximately the double, that is, an octave. . . . Itten's established chart indicating wave lengths and corresponding frequencies, in cycles per second, for each prismatic color is as follows:

<u>Color</u>	<u>Wave Length. mu</u>	<u>Frequency. cps</u>
Red	800 - 650	400 - 470 million million
Orange	640 - 590	470 - 520 million million
Yellow	580 - 550	520 - 590 million million
Green	530 - 490	590 - 650 million million
Blue	480 - 460	650 - 700 million million
Indigo	450 - 440	700 - 760 million million
Violet	430 - 390	760 - 800 million million

(Van Hagen, trans., 1970: 15-16)

The Itten color wave length and frequency chart is in correspondence to the sound and wave length chart as illustrated by the architect Gyorgy Doczi in his 1981 publication *The Power of Limits*.

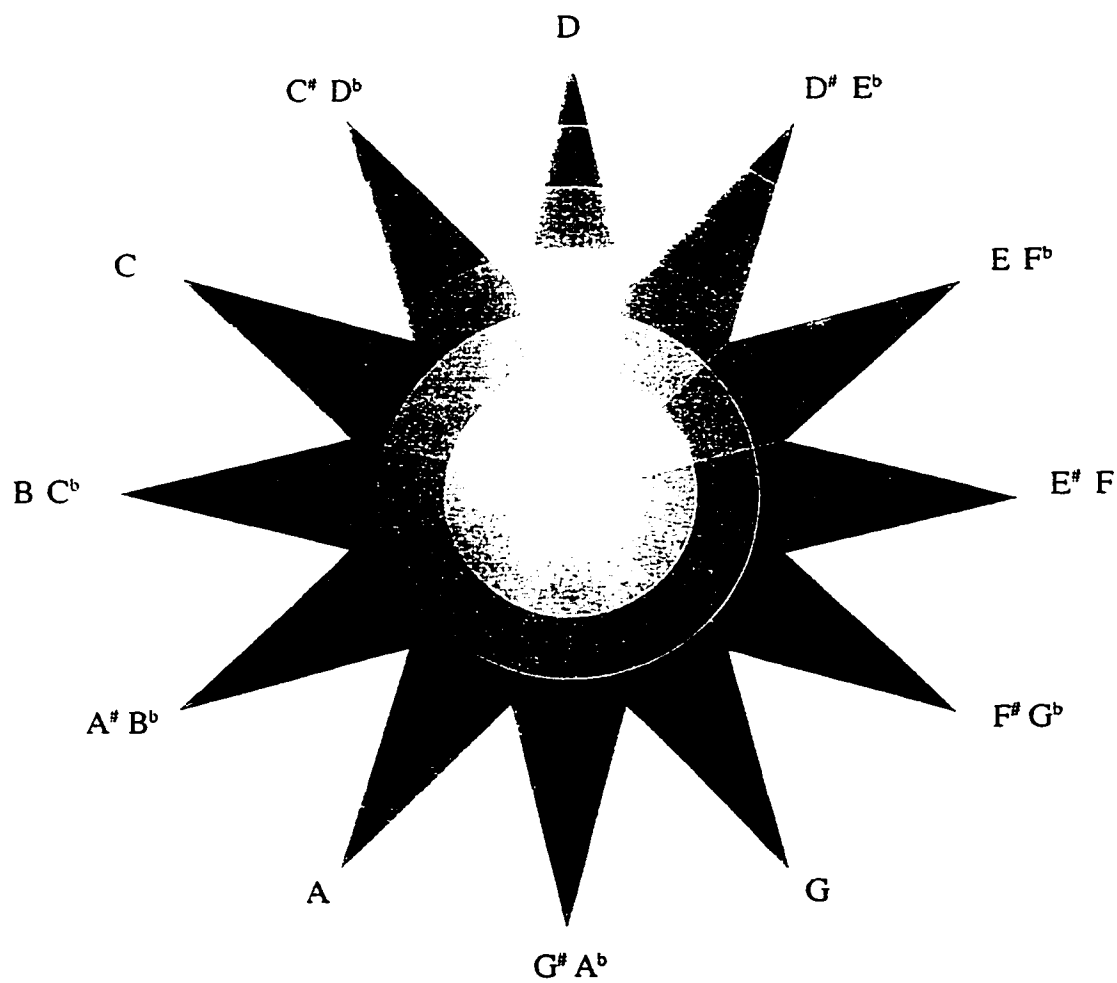
In reference to the wave length and frequency charts of both Johannes Itten and Gyorgy Doczi, the musical tone C-B# has been positioned on the color **Green**. There is said to exist a correspondence of wavelengths and frequencies between the color green and the C-B# musical tone. The same kind of correspondence holds true for the color and sound combinations as positioned around the entire star-shaped color-wheel concept. The color-wheel tonality combination becomes a guideline when creating color form musical scores. (Table 2)

* * * * *

Two multidisciplinary performance projects are a part of this work. In the first, a group of miniature abstract paintings have been created. These paintings are a reflection of the philosophical and aesthetic concepts of the arts of India. The arts of

Table 2

Color Wheel and Corresponding Sound Chart



Source: Van Hagen, trans. *The Elements of Color*. A treatise on the color system of Johannes Itten based on his book, *The Art of Color*.

India build on the ability of artists to tap into their inner sensibilities and to awaken, as well, an aesthetic response in the audience, who then become a part of the performance experience. All the arts of India fall into India's complex art system identified as the *Rasa* System.

"Rasa is a Sanskrit term for the sap or juice of plants; in the theory of Indian art, it refers to the aesthetic delight produced in the viewer's mind by emotions (*bhavas*), settings (*vibhavas*), and permanent emotional states (*sthayibhavas*), that a successful work of art can evoke in a sensitive viewer. The *Rasa* theory applies to the arts of the stage incorporating dance and music (Rasa) is immediately applicable to arts of all kinds, (with) much of its terminology specifically employing the concept of color. (Goswamy, 1986: 278, 19)

The miniature paintings were given sound expression by a group of musicians. The musicians had knowledge of the structure of the music of India and an understanding of how color, shape, texture and form can evoke or establish an emotional or aesthetic mood. The *Rasa*, or musical mood set up by the paintings, establishes an emotion or aesthetic that expresses the essence of moments within an established twenty-four hour time-period.

This is the time when the performance awakens in both the performer and viewer participant a kind of heightened experience that comes from the inner intuitive understanding or individual identification with what is being viewed or heard. The artists have energized their aesthetic experience and have transformed the experience to the viewing-listening audience.

In India a performance could continue for many hours as the performers expand and embellish upon the *Rasa* of each moment. The performance might focus on the entire twenty-four hour day span or perhaps on a single moment or incident

within that twenty-four hour period. The group of musicians who interpreted the miniature paintings set up a time limit for each painting. Prints of the miniature paintings, along with the established musical score, and other related information can be found in plates 1-9, in the catalog section of the report. The slides used in the color-sound performance event can be found at the end of this report.

A curious kind of appropriation, a curious kind of mixing and recycling of philosophical theories as well as a mixing and recycling of various cultural art forms has been put to use in an effort to illustrate the close interrelationship that is felt to exist between music and painting – between color and sound. Contemporary color sound performance expression has its own kind of "world culture" aesthetic. This visual art form makes its own kind of reference to the cultural diversity that can be found in the present period of time. The color and sound art form, in its own way, offers new space for the possibilities of creating cultural harmonies out of cultural differences.

A glance at an essay by Tony Kushner confirms the point that artists, in this last decade of the twentieth century, have been seeking new ways to more deeply comprehend the nature of art. Kushner sees and identifies the art in this last decade of the twentieth century as *The Art of the Difficult*. He is particularly concerned with art pertaining to theatrical performances and to the kind of involvement imposed upon the viewer-listener audience present at these kinds of events.

The concept that color can be translated into sound is, as Kushner indicates, creating for the viewer-listener a difficult kind of involvement, but it is also offering a kind of challenge. Kushner rationalizes that the challenge presented requires the viewer-listener participant to be imaginatively and intelligently involved with the presentation.

The same difficult qualities exist in a color sound performance that are spoken of as belonging to certain types of theatrical works. As each art form addresses pertinent cultural issues or theoretical, philosophical or scientific concepts, each, in

its own way "seeks to teach a posture, a *stance* to its audience. . . .The stance required (regardless of issues being presented) is thinking, pressing together, searching, interpenetrating and understanding. 'Difficult Art' does not come prepackaged by the artist Such art demands effort from its audiences."
(Kushner, 1997; 65-66)

There is a space in the social-cultural field of art for the understanding and acceptance of the color-sound close correspondence. This recognition will put into practice the concept that a visual image, an abstract image, composed of color, line, texture, and rhythmical movement, can function, as well as written notes on a staff, to serve as a musical score. As a result, the close color-sound interrelationship will begin to figure prominently in the creative processes of both the visual and aural art forms and will result in a new way of seeing and hearing. Color-Sound performances will give a new dimension to the long recognized mutual relationship that is felt to exist between music and painting. Bringing the music of a culture in tune with the visual concepts of a culture presents a powerful, energizing kind of communication.

The second multidisciplinary performance project was an interactive exhibition presented in partial fulfillment of the requirements for the MA Interdisciplinary Study in *Color and Sound Interrelated*. The exhibition performance offered, to the evening's audience, an even greater challenge than the *Art of India* performance. The Combined Arts Improv Ensemble, consisting of a visual artist, eight musicians, and two dancers, were engaged in interpreting the flavor, the bhava, and the essence of the last half of the fixed time-line of Sessue Hayakawa's 1919 silent classic *Tong Man*, filmed in San Francisco's Chinatown.

The visual contribution was composed of a selected group of color slide transparencies. The slides were presented at specific time intervals and reflected, through the use of color and through abstract imagery (form, line, texture, movement,

space), the flavor, the essence, and the sentiments of the action projected in the *Tong Man* black and white film.

The visual language of photography, like the mark-making of the painter, the written word of the poet, the movement of the dancer, and the soundings of the musician, is a process that extends and intensifies the sense of life. As photographic imagery is composed and as possible choices are made, the photographer finds expression for life's constant state of flux and flow. The photographer looks for and finds expression for the basic positive and negative energy forces. The photographer finds way to create the union of these dynamic forces.

The photographic imagery need not always follow the tradition of the realistic. The imagery of the selected slides for the *Tong Man* performance, follows the path of mystical exploration as they move from reality to fantasy. The slides speak of their own way of communication in the following statements:

I Am that Momentary Pause between breaths – that Frozen in Time pause when Motion and Stasis, when Innocence and Experience, are together.

I Am Multiplicity. My frozen in time markings – their shape, form, as well as their color, texture, and rhythmic flow – dotted with the silences that lie between – speak of the sympathetic vibrations of the Inner Spirit.

I Am Resonance. The sympathetic vibration that sings out in answer to those other Inner Spirit voices that surround me.

I Am Beauty. That frozen in time Aliveness that is the resonance that connects with that thing that sings.

I Am Quality. That frozen in time aspect that resonates to the truth around me.

I Am that Undiscovered Wholeness that lies beyond the Self. (L.B.)

The Combined Art Improv Ensemble dedicated many hours to the study and

analysis of the film in an effort to find those combinations and groupings of sounds, of visual imagery, of physical movement, that would blend with and express the flavor of the pre-Hollywood and pre-code silent film era.

There are plates at the end of this report that record the type of improvisational phrasings, patterns, and groupings that were discussed and considered as ways of interpreting the various parts of the *Tong Man* film. These kinds of interpretation were considered by musicians, dancers, and the visual artists, when selecting and preparing material that would correspond to the theme of the film.

Hafez Modirzadeh, the Director of the *Tong Man* performance, makes the following statement concerning the evening's presentation:

In all, the musical score alternates between interpreting either slides, movement, or the film itself, with a trio of coordinated musical duos. Dancers also have a score of their own set up for spontaneous change, while the slides enter at specific film intervals, their order to be played with. A second screen has been set up in front of the video monitor for film images to become involved with movement and slides simultaneously. And finally, the first half of the performance will take director clues, while the second half will leave all choices up to the collective. Thank you for your open minds and hearts. (H.M.)

Information pertaining to the Combined Arts Improv Ensemble Concert can be found in the catalog section of this report. Plate 9 served as the performers reference sheet for the number of minutes allotted to each section of the film's action. The next six plates contain suggested phrasings, melody lines, movements, themes, emotional moods, action attitudes, and essence concepts that could be applied to express specific action or events throughout the film's action. In addition, there is in the catalog section a number of prints of the musical score color slides used in this performance. A video tape recording of the May 11, 1998 Combined Arts Improv Ensemble Concert is also included in this report.

CATALOG

Plate

1	<i>Ragas. Music of India</i>		
2	<i>Ragas. Color, Sound, and Sentiment Chart</i>		
3	<i>Raga. Duration of Day and Night</i> 4:00 A.M. to 7:00 A.M.	Marbling	2" x 3 3/4"; 2" x 3 3/4"
4	<i>Raga. Duration of Day and Night</i> 7:00 A.M. to 12:00 Noon.	Marbling	2" x 3 3/4"; 2" x 3 3/4"
5	<i>Raga. Duration of Day and Night</i> 12:00 Noon to 4:00 P.M.	Marbling	2" x 3 3/4"; 2" x 3 3/4"
6	<i>Raga. Duration of Day and Night</i> 4:00 P.M. to 7:00 P.M.	Marbling	2" x 3 3/4"; 1 3/4" x 4 1/4"
7	<i>Raga. Duration of Day and Night</i> 7:00 P.M. to Midnight.	Marbling	1 1/4" x 4 1/8"; 2" x 3 3/4"
8	<i>Raga. Duration of Day and Night</i> Midnight to 4:00 A.M.	Marbling	2" x 3 3/4"; 2" x 3 3/4"
9	<i>Combined Arts Improv Ensemble Concert</i> Time Line Chart.		
10-15	<i>Combined Arts Improv Ensemble Concert</i> Musical Phrase Guide.		
16	<i>Tong Man.</i>	Photography 1921 Silent Film	3"x5"
17	<i>Tong Man.</i>	Color Transparency	3"x5"
18	<i>Father and Daughter. Conversation.</i>	Photography 1921 Silent Film	3"x5"
19	<i>Tong Parlor.</i>	Color Transparency	3"x5"

CATALOG

Plate			
20	<i>Poison Incense.</i>	Color Transparency	3"x5"
21	<i>In The House. e a d g b e.</i>	Color Transparency	3"x5"
22	<i>Fight. Walking bass.</i>	Color Transparency	3"x5"
23	<i>Chase. Scat Swing Line.</i>	Color Transparency	3"x5"
24	<i>The Spider's Web. Flamenco.</i>	Color Transparency	3"x5"
25	<i>Getaway! Spiralling Sound Mass.</i>	Color Transparency	3"x5"
26	<i>Gun Shot. Opposing Dynamics.</i>	Color Transparency	3"x5"
27	<i>Slow Boat. Swing Arrangement.</i>	Color Transparency	3"x5"
28	<i>Combined Arts Improv Ensemble Concert. Video Tape Recording.</i>		

A Raga is a musical mode upon which a musician improvises variations. The Ragas are evocative of various moods, and each is suited to a particular season or time of day. The miniature paintings have been created to be used as a musical score for the India version of the division of the twenty-four hour day. Raga themes are made up of specific Sentiments. Rasa is the sentiment, the aesthetic delight, that is produced in the viewer's mind by emotions.

The *Shringara Rasa* referred to as the King of the Sentiments expresses the Sentiment of Love. This Rasa refers to "...whatever is sacred, pure, placid and worth seeing..." There are eight more Rasa sentiments that find expression within the twenty-four hour day division.

These Rasas are: *Hasya Rasa* – The Comic Sentiment; *Karuna Rasa* – The Pathetic Sentiment; *Raudra Rasa* – The Furious Sentiment; *Vira Rasa* – The Heroic Sentiment; *Bhayanka Rasa* – The Terrible Sentiment; *Bibhatsa Rasa* – The Odious Sentiment; *Adbhuta Rasa* – The Marvelous Sentiment; *Shanta Rasa* – The Quiescent Sentiment.

Guidelines

<u>Sound</u>	<u>Color</u>	<u>Sentiment</u>
C	Green	Power, Authority
D	Yellow	Wonder, Excitement
E	Orange	Insecurity, Disgust
F	Red	Affection, Playfulness
G	Blue	Agitation, Fear
A	Violet	Serenity, Peace
B	Tints	Hope, Trust
Silence	White	Heightened Awareness

Shringara Rasa – The Love Sentiment. Using the miniature paintings as a musical score, the vocalist or instrumentalist begins the introductory passage of the composition. Pure tones of one or more notes are sounded in the lower register. As the notes move chromatically into higher tones, their rendering is at a sustained, drawn out, unhurried pace. These delicate, hushed tones are embellished with sliding, gliding patterns that move slightly up or down the established scale. This introductory section is rhythm free. During the silences found in this section, only the soft, subtle and continuous drone of the *Tambura* is heard in the sound background.

Ascending Scale

Descending Scale

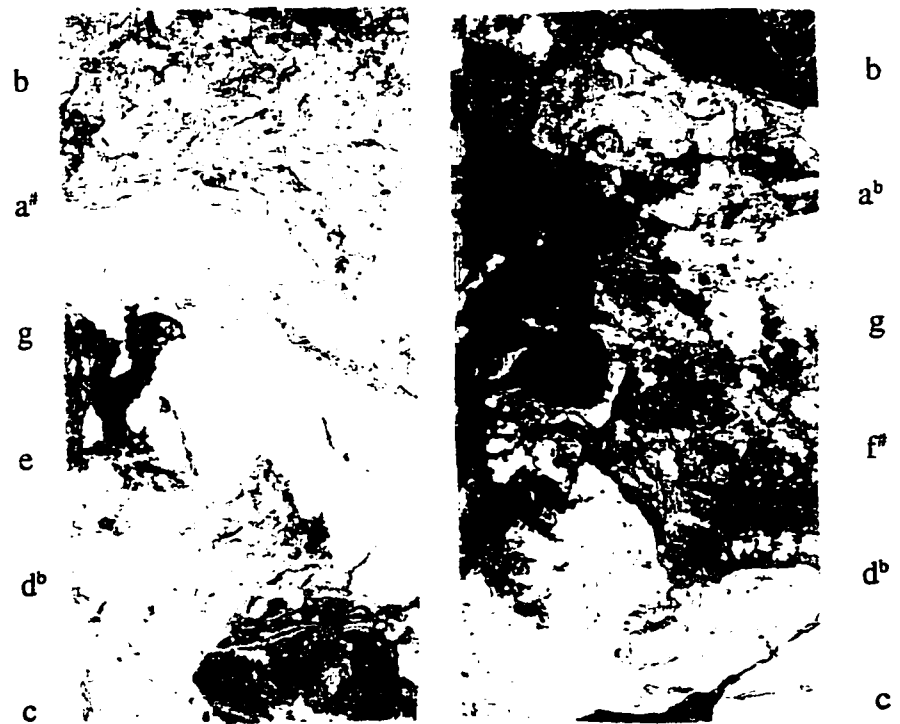


Plate 3

Raga. Duration of Day and Night
4:00 A.M. to 7:00 A.M.

Marbling

2" x 3 3/4"; 2" x 3 3/4"

Hasya Rasa – The Comic Sentiment. Musical improvisations begin with a playful mood that gradually move toward moods of mimicry, jesting, or mockery. The drummer senses the beginning of rhythmical explorations and gives his support to these new musical elements. As the day moves on anxieties begin to mount. Now the *Sentiments* of the *Pathetic* are experienced and the *Karuna Rasa* holds sway. The mood changes to one of indifference and insecurity.

Ascending Scale

Descending Scale

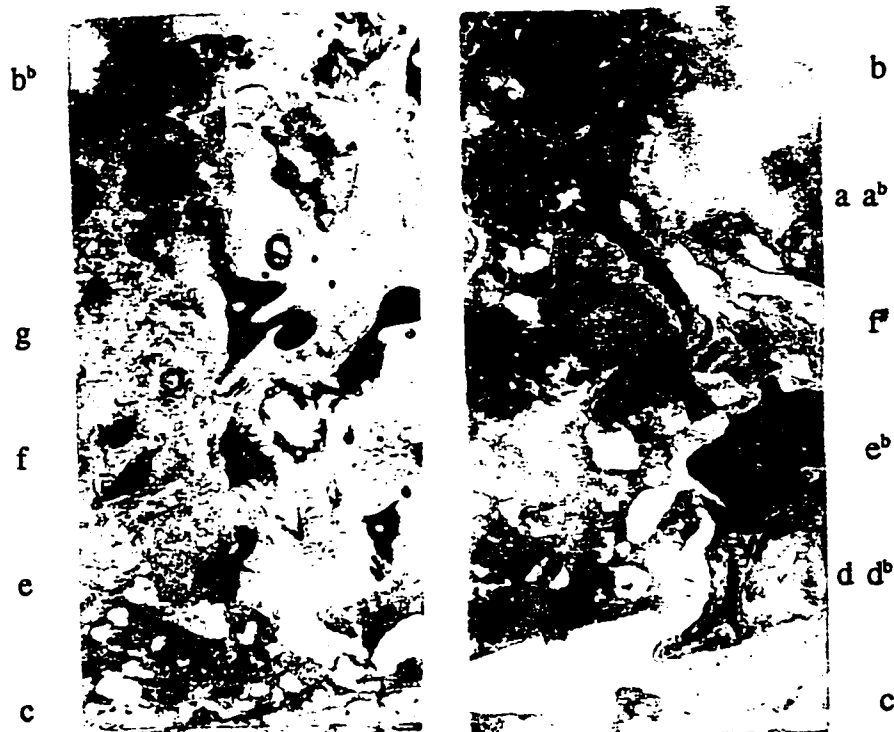


Plate 4

Raga. Duration of Day and Night
7:00 A.M. to 12 Noon

Marbling

2" x 3 3/4"; 2" x 3 3/4"

Raudra Rasa – The Furious Sentiment. The musical expression moves into a state of agitation. The day's tensions begin to reflect the sentiments of jealousy and revenge. These sentiments find musical and rhythmical expression. At times the rhythm of the drum takes the lead, moving the vocalist or instrumentalist into and through unexplored passages. The complex rhythms and melodies move faster and faster.

Ascending Scale

Descending Scale

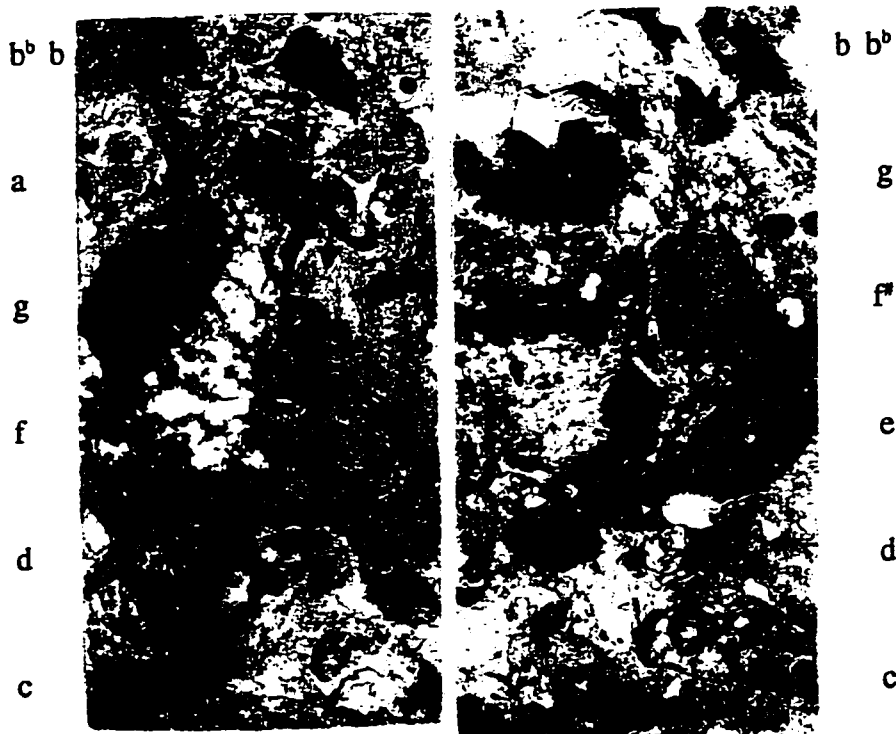


Plate 5
Raga. Duration of Day and Night
 12:00 Noon to 4:00 P.M.

Marbling

2" x 3 3/4"; 2" x 3 3/4"

Bhayanaka Rasa – The Terrible Sentiment and *Bibhatsa Rasa – The Odious Sentiment* bring the energies to a climax. The sentiments of panic and fear are first experienced. Disgust and aversion, sentiments of the *Bibhatsa Rasa* follow. Then a subtle change takes place. The sense of horror lessens and the *Vira Rasa – The Heroic Sentiment* becomes dominant. Sentiments of the *Heroic* express firmness, steadiness, charity and carry with these attitudes an air of power and authority.

Ascending Scale

Descending Scale

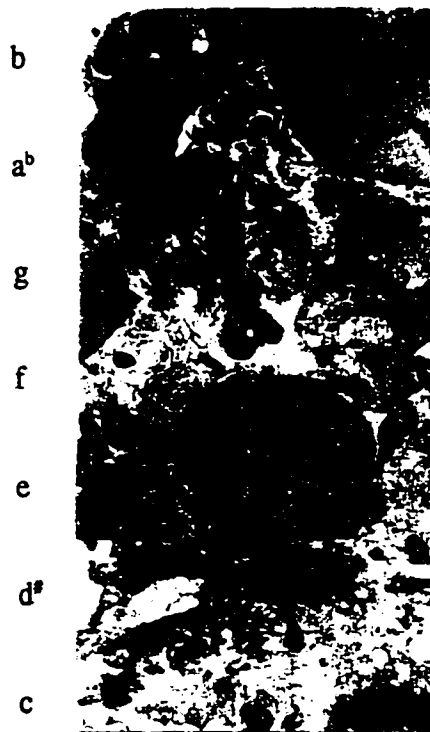


Plate 6
Raga. Duration of Day and Night
 4:00 P.M. to 7:00 P.M.

Marbling

2" x 3 3/4"; 1 3/4" x 4 1/4"

Vira Rasa – The Heroic Sentiment. Improvised expressions move into insistent strong phrasings that carry an association with power, majesty, and authority. Favorite melodies develop and are explored and fully enjoyed. As the period of time moves toward midnight, *Adbhuta – the Marvelous Sentiment* is heard and felt as being at the heart of the performers' intent. Extraordinary, masterful, and magical improvisational skills flow freely. A sense of wonder is expressed and experienced.

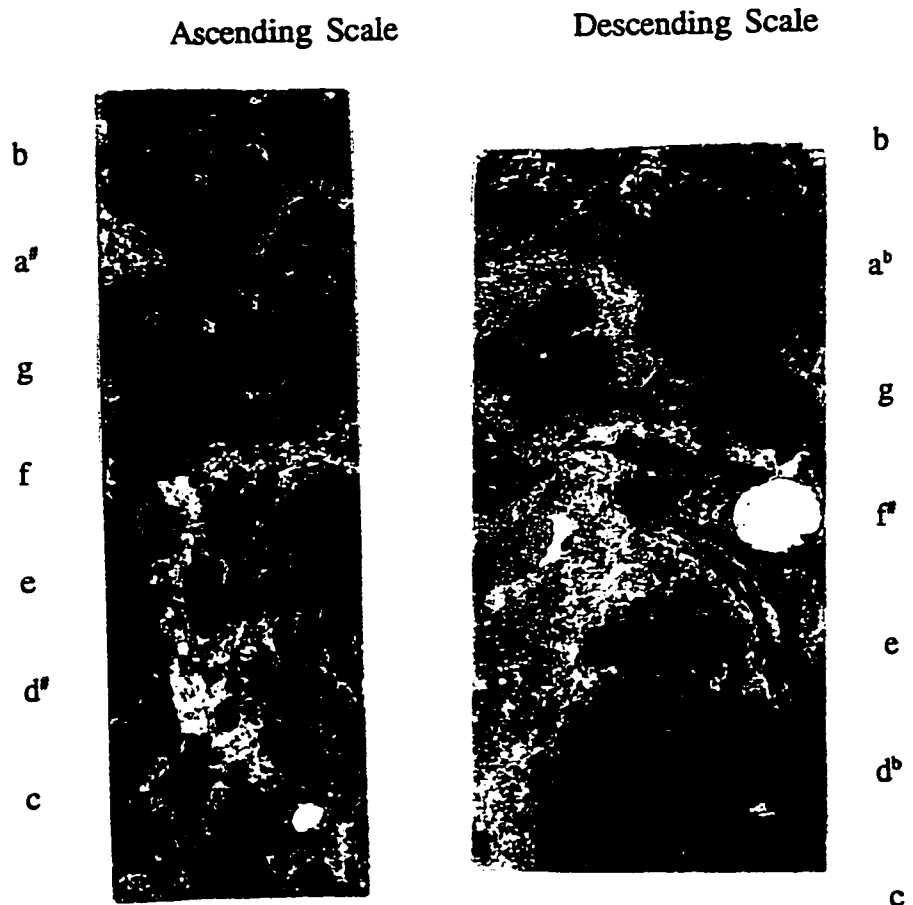


Plate 7
Raga. *Duration of Day and Night*
7:00 P.M. to Midnight

Marbling

1 1/4" x 4 1/8"; 2" x 3 3/4"

Adbhuta Rasa – The Marvelous Sentiment continues to communicate the mood of wonder. The melodies and rhythms reflect the innermost core of life – the spiritual center from which everything flows in all directions. A slowing down process gradually takes place. *Shanta – The Quiescent Sentiment* begins to express the moods of serenity and tranquility. In these final moments of the composition the drum rhythms fade away. Again only the quiet, hushed tones of the vocalist or instrumentalist can be heard. The background drone continues softly. A sensitivity to new beginnings hangs in the air.

Ascending Scale

Descending Scale

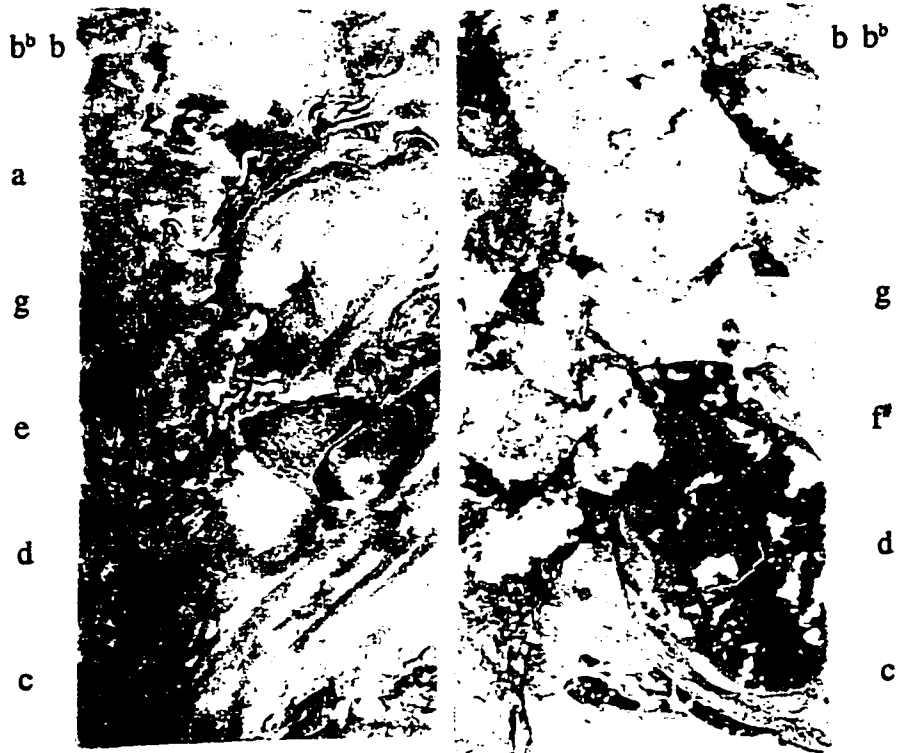


Plate 8

Raga. Duration of Day and Night
Midnight. to 4:00 A.M.

Marbling

2" x 3 3/4"; 2" x 3 3/4"

Overture: A) Dance
B) Music/Slides

ACT ONE (film): Director's Choice

27:52 — Dance/Music (6 min)
34:00 "the poison incense"
Slides (2 min)
36:05 "Luk Chan is a traitor..."
Dance/Music (3.5 min)
39:40 "my daughter - - - I will see Ming Tai..."
Slides (1 min)
40:40 —Gun Shot—
Dance/Music (2 min)
42:36 "come for me tomorrow..." (2 min)
Slides (1 min)
43:20 "while Ming Tai plays..." to end of scene
—entr'act: Music (dance?)

ACT TWO (film): Collective Choice:

43:52 "daylight gives Louie Toy courage..."
Music/Dance (3.5 min)
47:25 "The Sprider's Web"
Slides (2 min)
49:27 "Louie Toy has been murdered"
Music/Dance (+slides?) (4 min)
53:20 —Dragon Head Hiding
Slides (1 min)
54:10 "Ming Tai Prays to his Joss..."
SILENCE (1 min)
55:15 —Gun Shot to...
Slides/Music (1 min)
56:28 THE END


Plate 9

Combined Arts Improv Ensemble Concert
Time Line Chart

TONG MAN

1998
IMS 158

27:52
The
Tong
Parlor

① bass: d d
hrns: 
guit: parallel 4ths

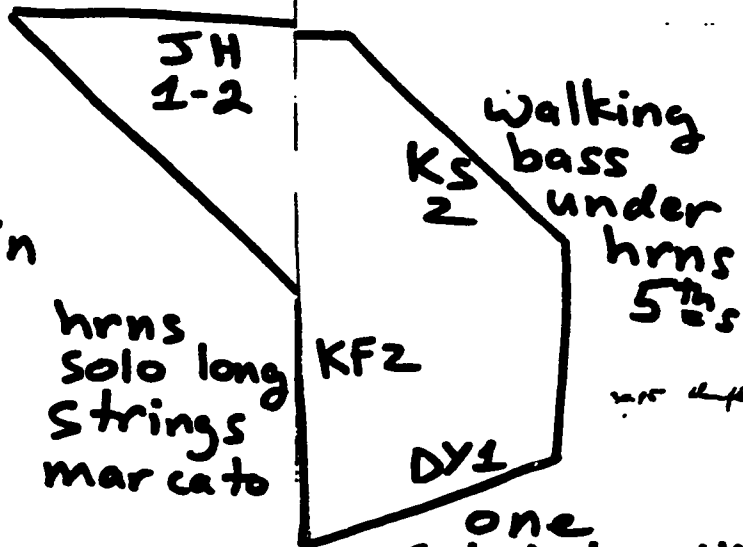
low. big man +
2nd in clarinet?
2002

long Pader
don't let it
fall away from
the way they
play it
2002

② unison band swings
bass walks, guit. comps

29:08 The
Bargain

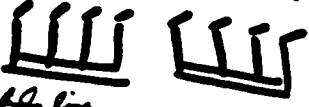
As Sing the
bass (Zolt)



In the
House

30:36

single with
Hatched in line for end
in three line

one soloist with
hrns/bass in
parallel 3rds p p
guit: 

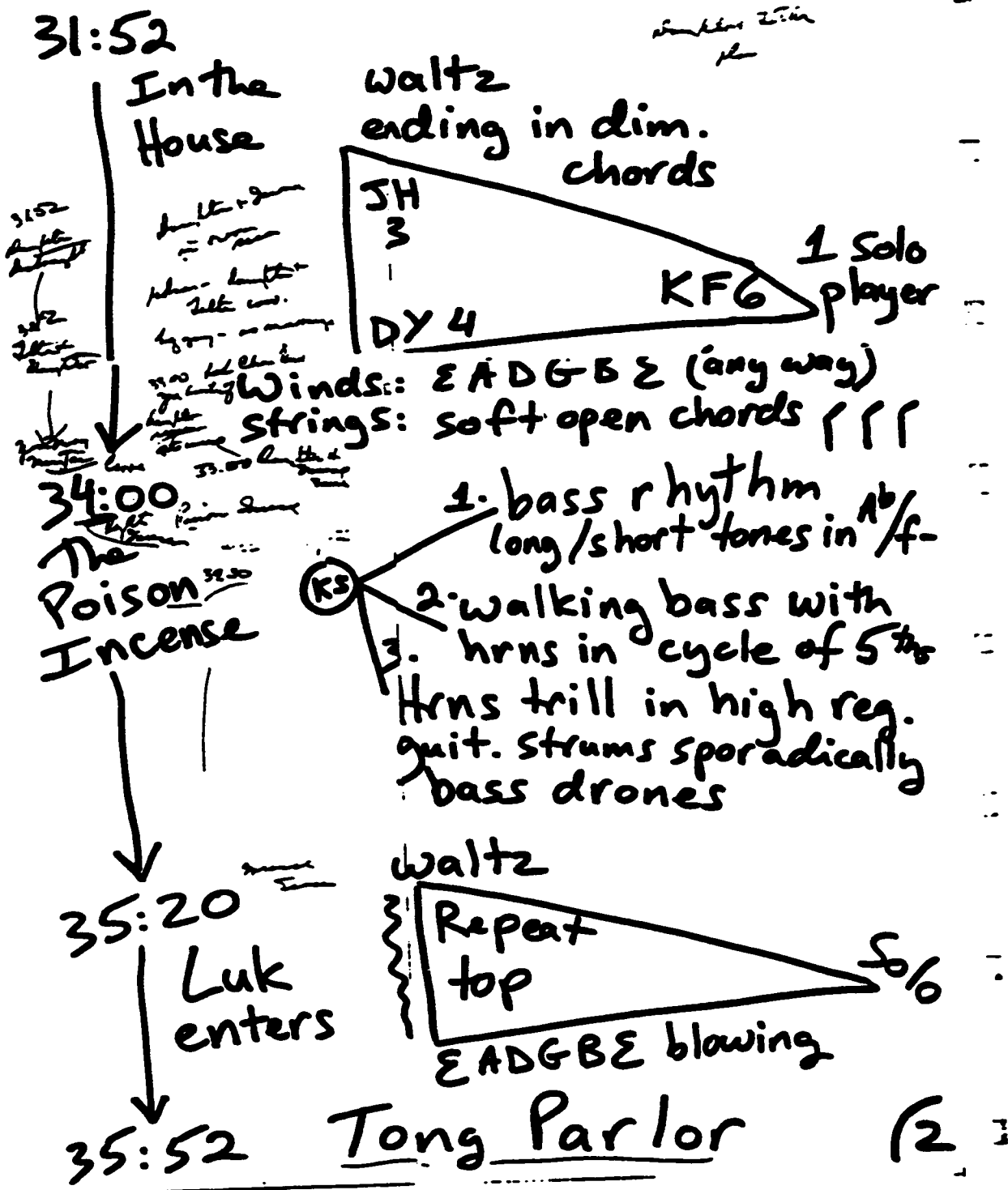


Plate 11
 Combined Arts Improv Ensemble Concert
 Musical Phrase Guide (2)

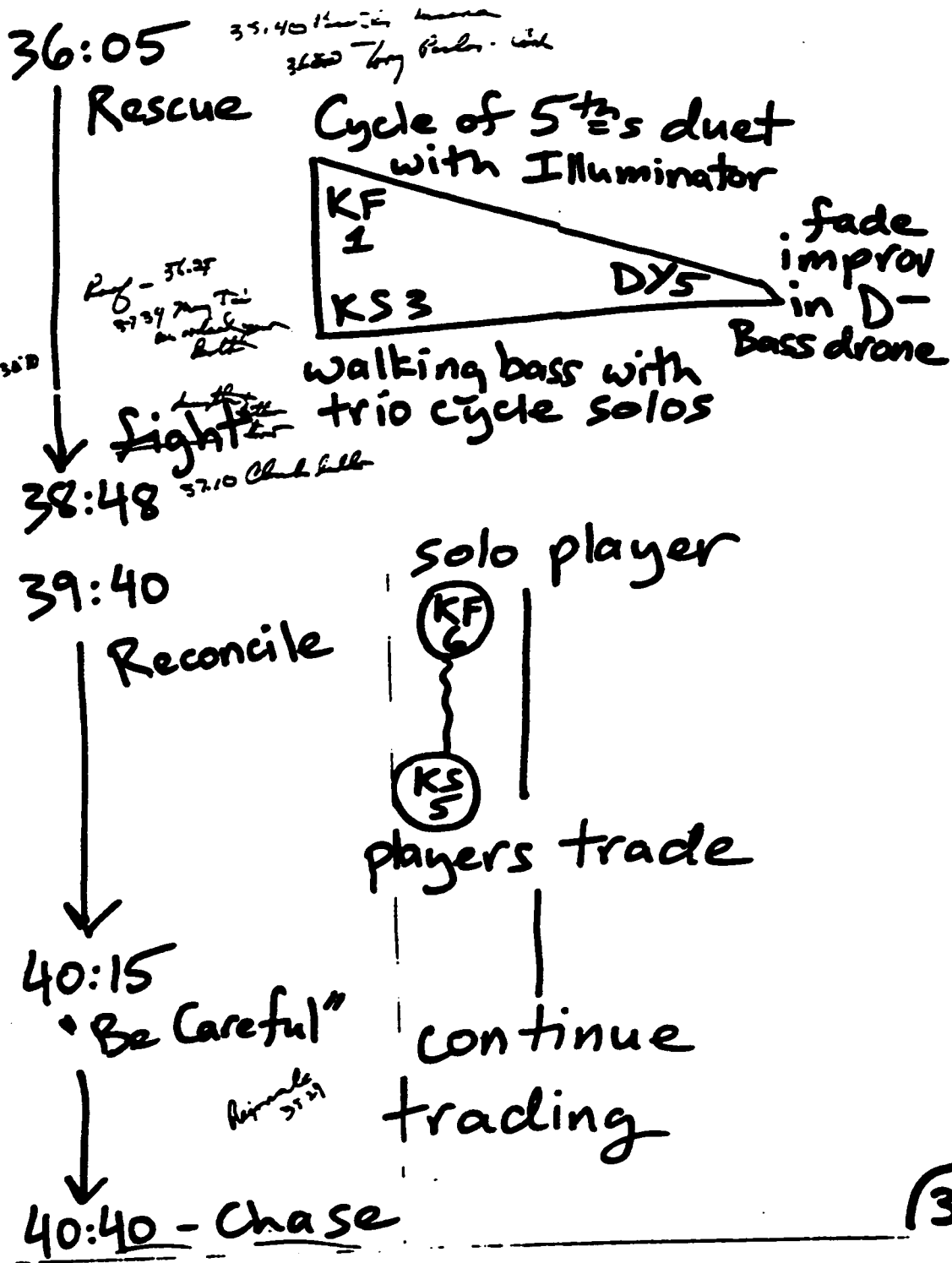


Plate 12

Combined Arts Improv Ensemble Concert
Musical Phrase Guide (3)

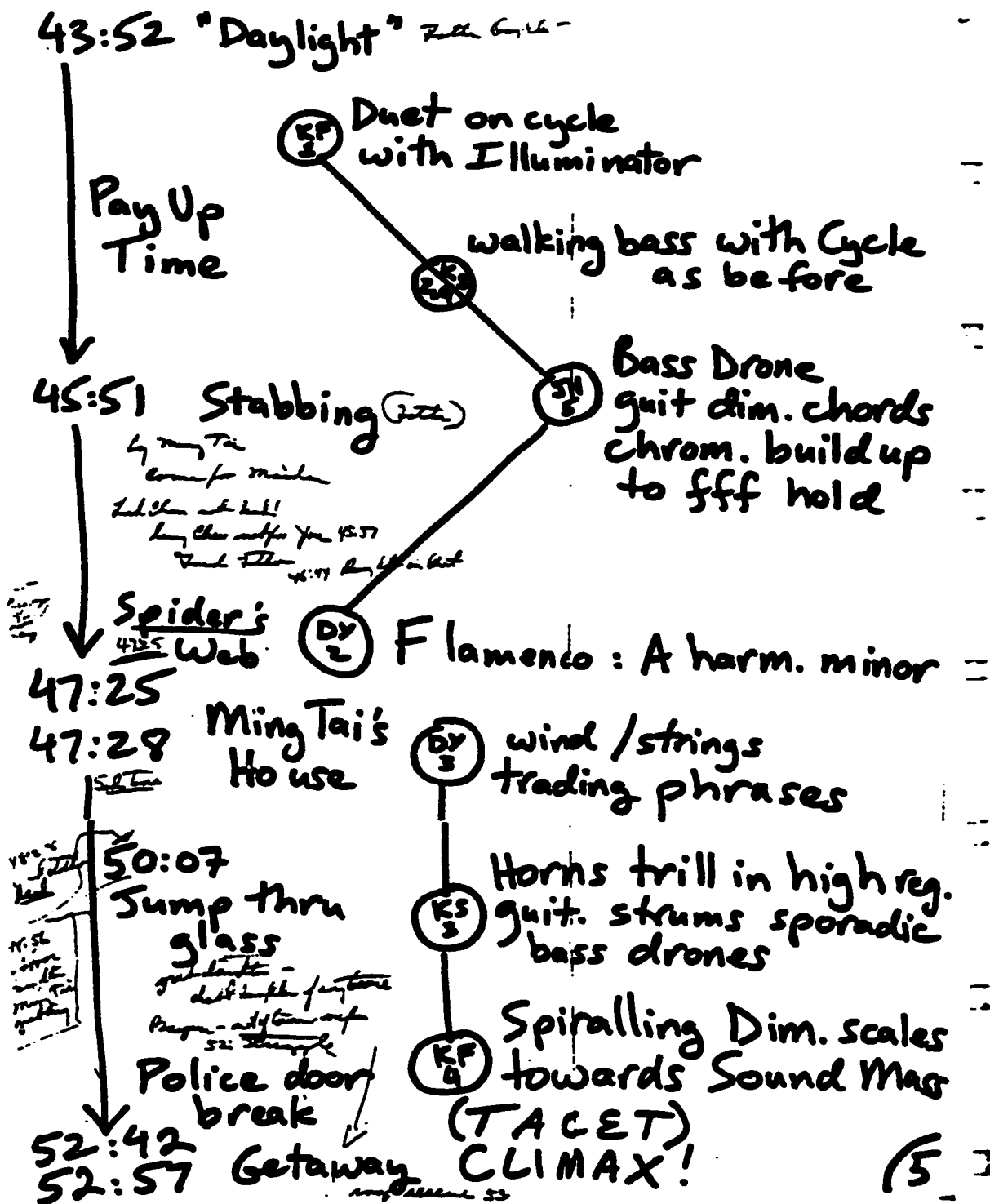


Plate 14
 Combined Arts Improv Ensemble Concert
 Musical Phrase Guide (5)

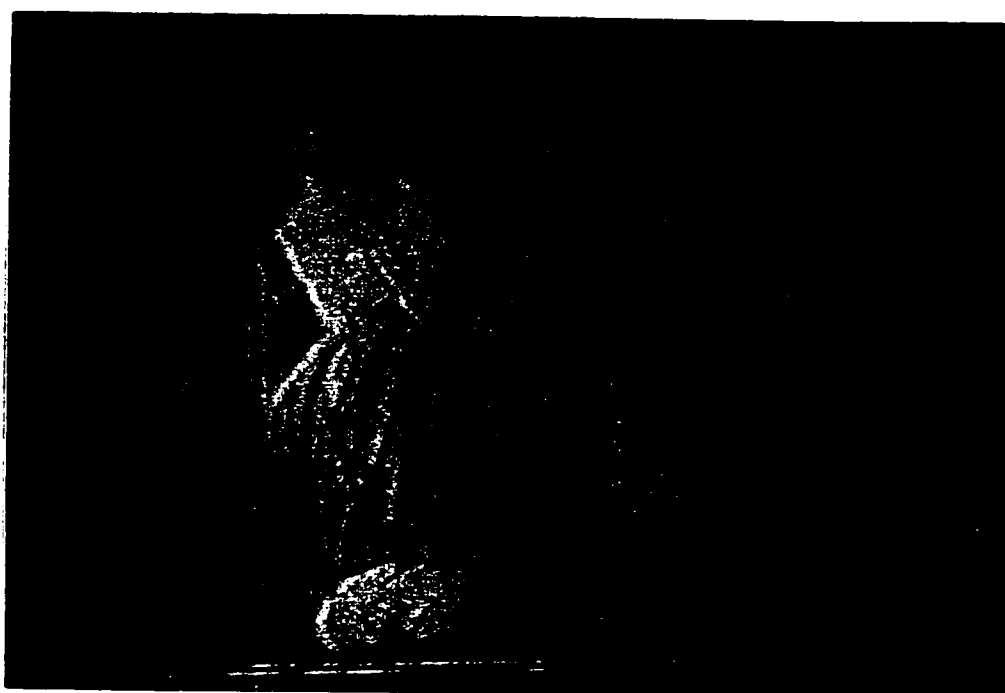


Plate 16. *Tong Man*

Photography
1921 Silent Film

3" x 5"



Plate 17. *Tong Man*

Color Transparency

3" x 5"

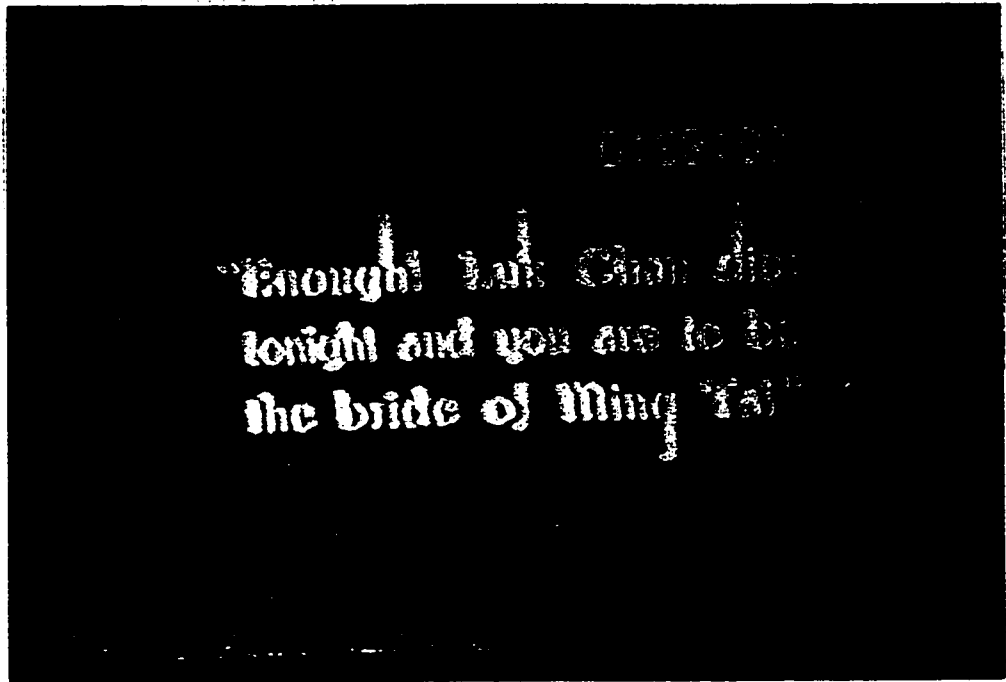
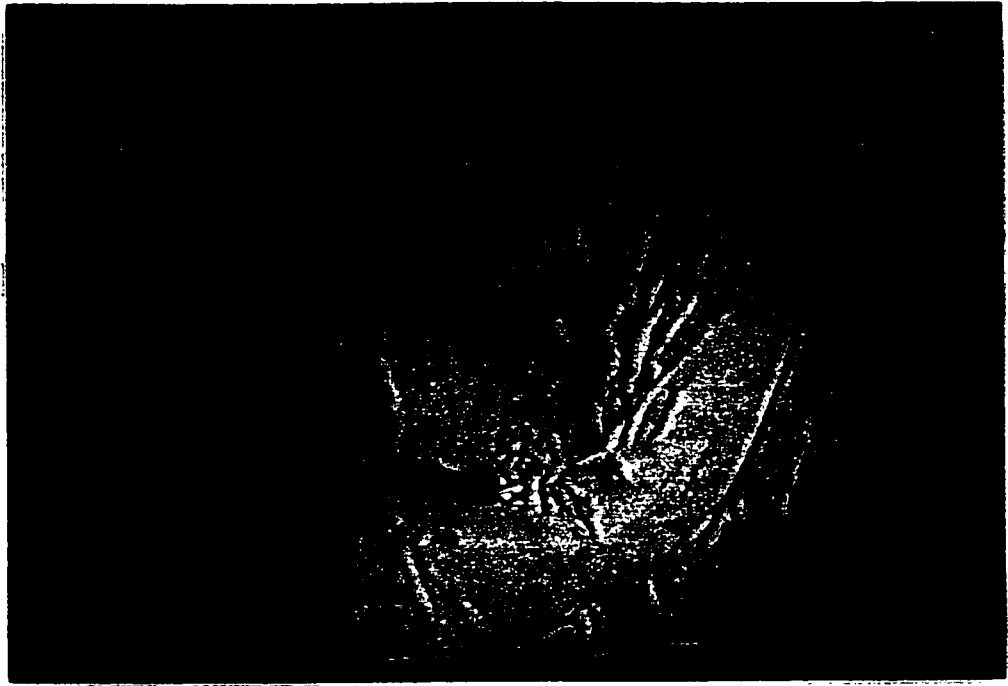


Plate 18. *Father-Daughter
Conversation*

Photography - 1921 Silent Film
Photography - 1921 Silent Film

3" x 5"
3" x 5"

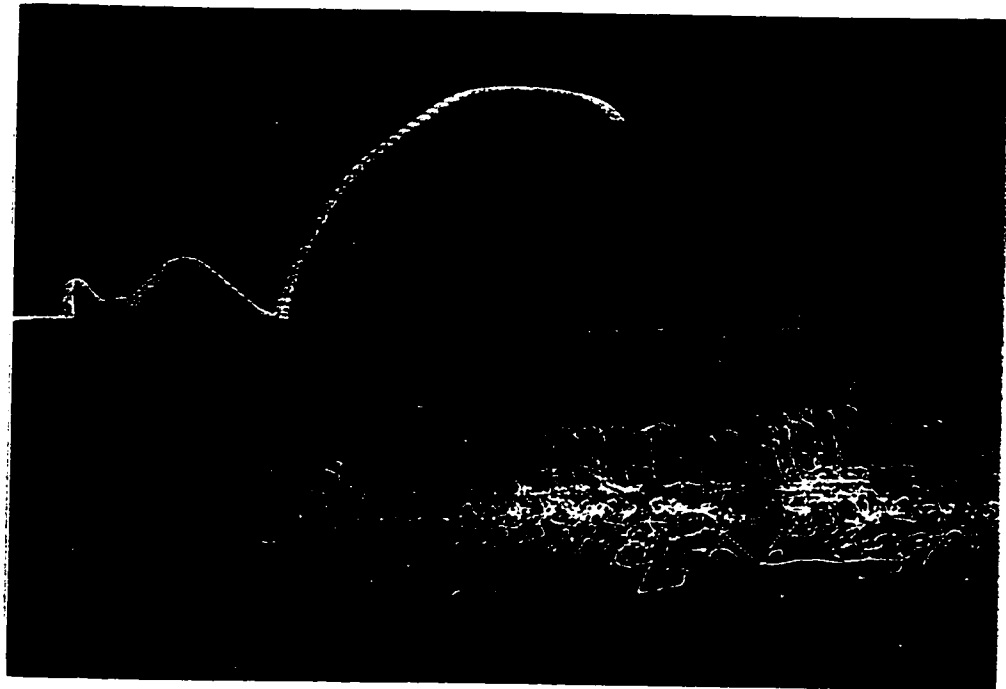


Plate 19. *Tong Parlor*

Color Transparency

3" x 5"



Plate 20. *Poison Incense*

Color Transparency

3" x 5"

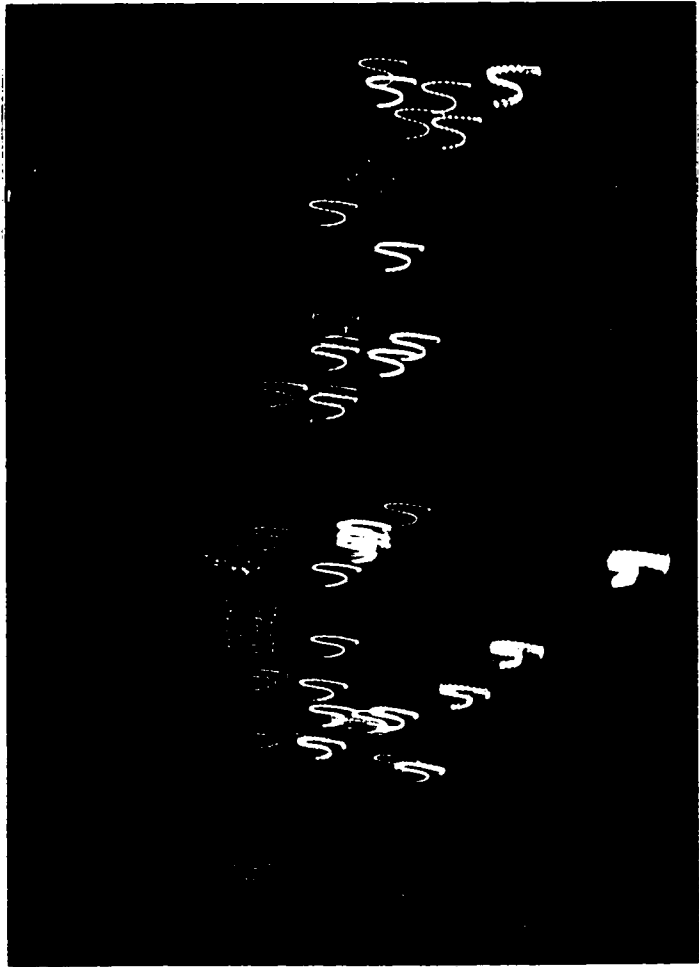


Plate 21. *In the House*
e a d g b e

Color Transparency

3" x 5"

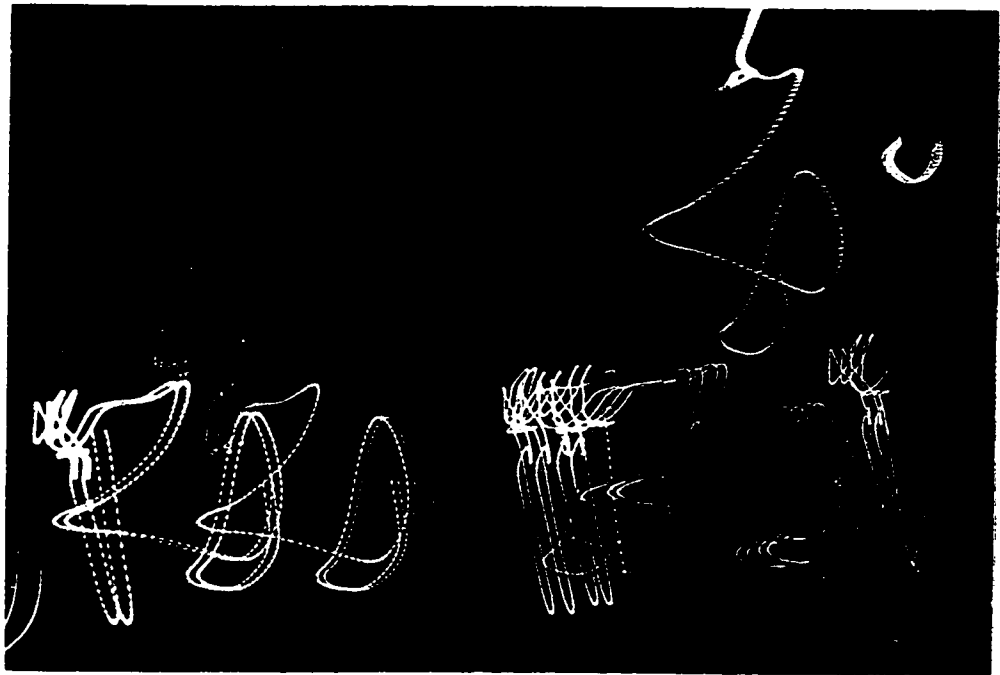


Plate 22. *Fight*
Walking bass

Color Transparency

3" x 5"

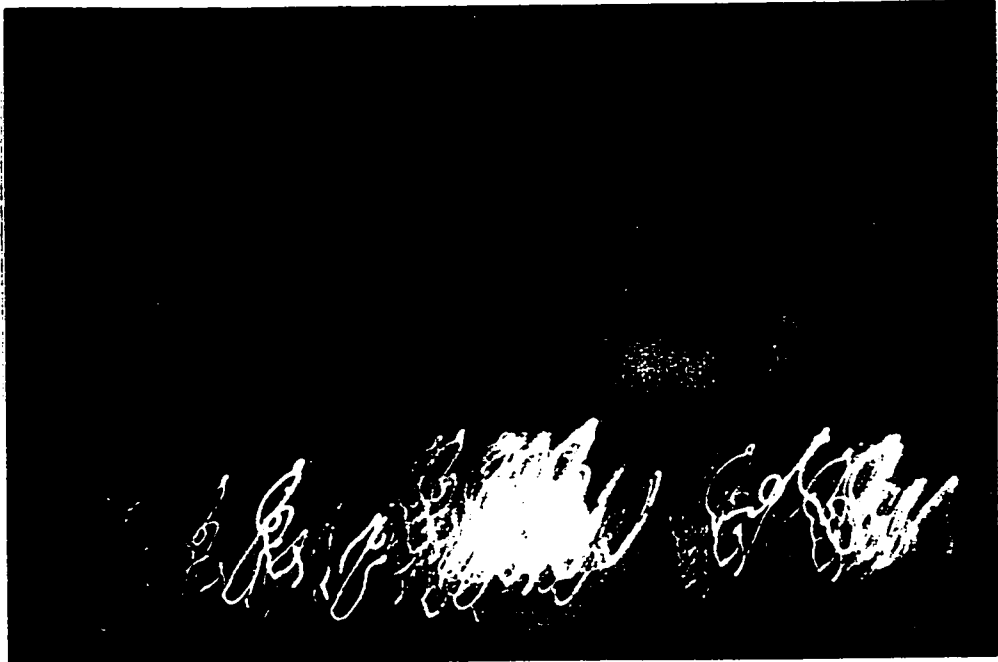


Plate 23. *Chase*
Scat Swing Line

Color Transparency

3" x 5"



Plate 24. *Spider's Web*
Flamenco

Color Transparency

3" x 5"

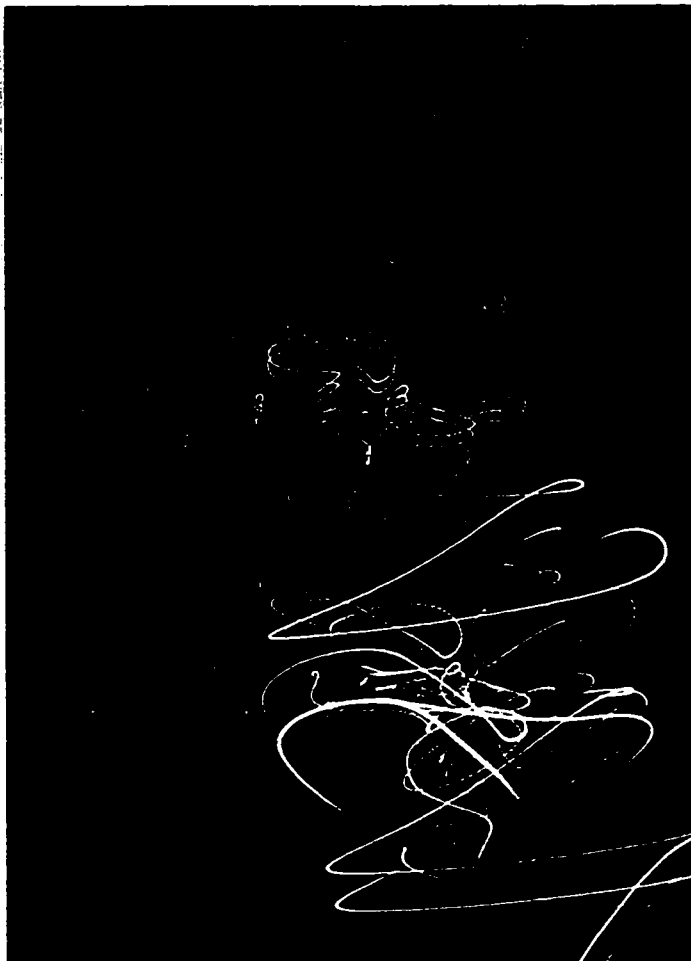


Plate 25. *Getaway!*

Spiralling Sound Mass! Color Transparency

3" x 5"

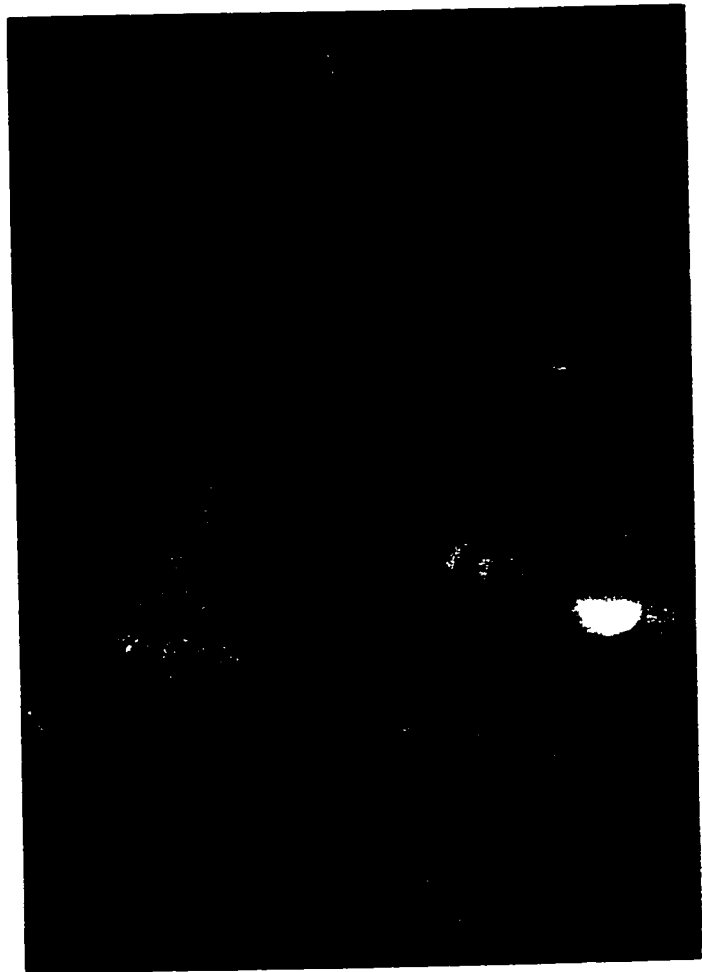


Plate 26. *Gun Shot*
Opposing Dynamics

Color Transparency

3" x 5"



Plate 27. *Slow Boat*

Swing Arrangement

Color Transparency

3" x 5"

ANNOTATED LIST
of
WORKS CONSULTED

COLOR

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- Hope, Augustine and Walch, Margaret. The Color Compendium. New York: Van Nostrand Reinhold, 1990. 360p.
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- Jones, Tom Douglas. The Art of Light and Color: Featuring Mobile Color Expression, Lumia, Kinetic Light – with Instructions for the Creation of Dramatic Color and Light Instruments. New York: Van Nostrand Reinhold Company, 1972. 119p. Colotron, Sculptachrome, Chromaton, and Celeston Instruments described wherein visual music can be composed and played. Magic of light and color distinct from color and dye.
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- Van Hagen, Ernst, trans. The Elements of Color. A treatise on the Color System of Johannes Itten. Based on his book, The Art of Color, Ed. Faber Birren. New York: Van Nostrand Reinhold, 1970. 95p. ". . . The word and its sound, form and its color, are vessels of a transcendental essence that we dimly surmise. As sound lends sparkling color to the spoken word, so color lends psychically resolved tone to form. . . The primeval essence of color is a phantasmagorical resonance, light become music. . ." (Faber Birren, Ed., Foreword 8).

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Macdonald, Hugh. Skryabin. Oxford Studies of Composers (15). London: Oxford University Press, 1978. 71p. Discussion of his music, his personality, his character, his interest in Synaesthesia. He associated color with musical pitch. Examples of the musical color wheel he created – p 56-57.

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GENERAL

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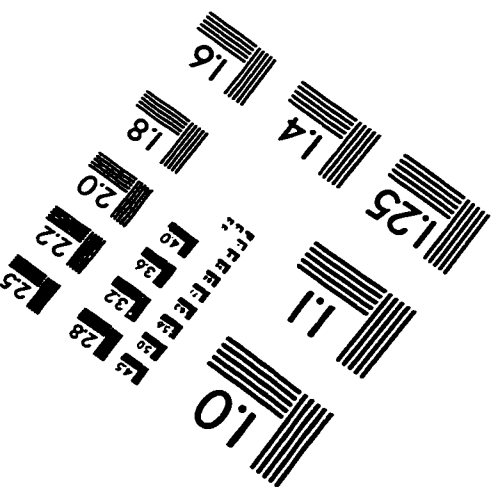
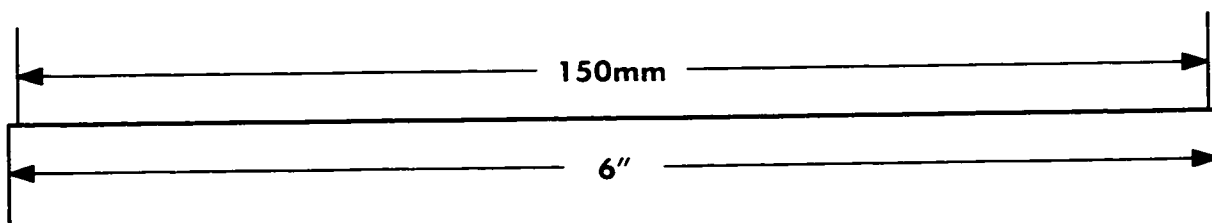
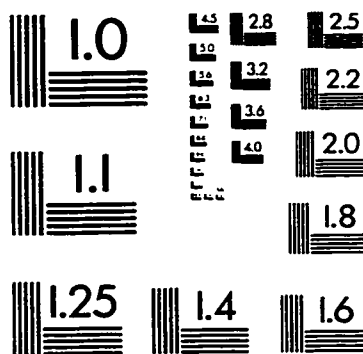
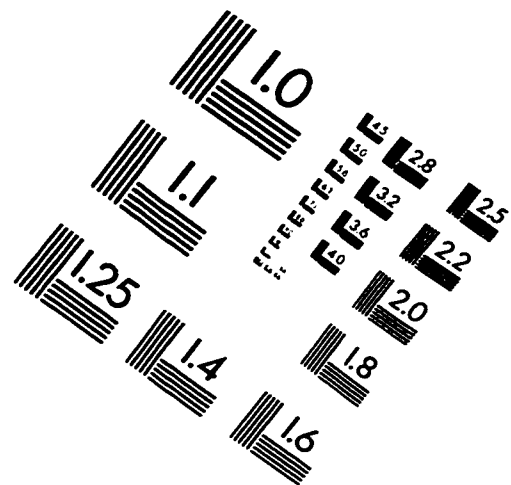
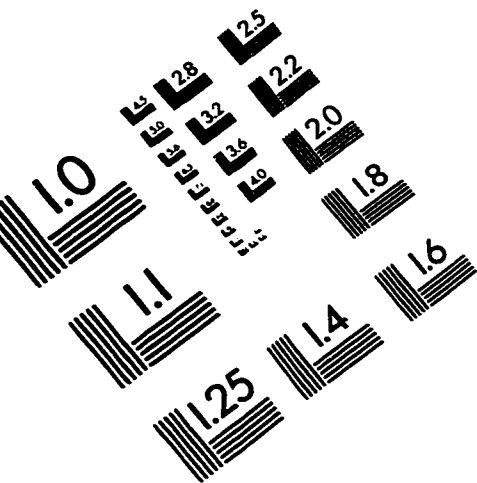
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