

RR-13  
Ping

14603 Longacre  
Detroit, Michigan

15 September 1968

PING

ROGER REYNOLDS

## PING

text: Samuel Beckett  
music and film: Roger Reynolds  
cameraman: Kazuro Kato  
actor: Seikiji Maro  
projections: Karen Reynolds  
  
dedicated to: Robert Ashley  
Junosuke Okuyama  
Michael Von Biel

PING involves bounded areas of aural and visual experience. Within the limits of given materials and conventions, the performers are free to improvise.

## GENERAL

### MATERIALS (AURAL)

Three performers who play

- flute (amplified)
- piano (amplified)
- harmonium, bowed cymbal, bowed tam tam (all amplified)

The live sound is treated in three ways:

- 1) All instrumental sounds are subtly amplified so that they have a definite presence in all parts of the performance space. A soft sound, however, should remain soft.
- 2) Live sounds, picked up by contact mikes, are combined with a ring modulator, and -
- 3) By means of a photocell sound distributor (PSD), the RM output is released from a variety of sources in stable and moving patterns.

A 25-minute tape which includes three recurring elements. Taped sounds are all released from speakers in various patterns by means of the PSD.

### MATERIALS (VISUAL)

Primary image

- continuous 22-minute film (male body in a box and stable areas of color)
- NB When possible, the filmed image is to be replaced by a live dancer (actor) whose body is projected by means of closed-circuit TV according to a scenario (used in making the above film).

No manipulation of film. In case of closed-circuit TV, manipulation of images as directed in the scenario.

Text

- 160 slides, white letters on black background (the words of Beckett's story grouped so as to suggest but not fix interpretation).

Slides are projected alternately left and right from two machines. Their contents are altered by:

- 1) overlapping
- 2) colored filters
- 3) distorting lenses and media

Environmental effects

- secondary images  
Vague grey blurs without defined subject are projected around the space with matrixed mirrors.
- color  
The entire space is suffused with a specified color for controlled lengths of time.

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REQUIRED MATERIALS

- film (16 mm, 22 minutes)
- 16 mm projector of adequate strength for the performance space
- 160 35 mm slides (80 left, 80 right)
- 2 automatic slide projectors with focus control (Kodak Carousel projectors (at least 500 watts) with 80-slide circular trays are ideal.)
- 2 sets of colored filters
- distorting lenses, prisms, and vinyl sheets of various thicknesses
- ring modulator capable of immediate transfer from one carrier or signal to another (cf., centerfold)
- photocell sound distributor (PSD) with at least three independent 4-channel elements to handle three inputs (ring modulator, tape channel A and B) (cf., centerfold)
- 2 pen flashlights
- 2 moderate sized (4 to 5-inch diameter) heavy microphone stand bases (cf., centerfold) with their rubber feet removed so that the bottom surface can be ground flat
- 4 contact microphones (for PNO, HARM, CYM, TAM TAM)
- a close-range combination air and contact mike (for FL)
- medium (16-inch) cymbal with solid stand and felt clamping washers
- tam tam
- harmonium
- contrabass bow
- 2 hard rubber combs (Ace 5-inch are ideal.)
- 2 small electric motors (cf., centerfold) with batteries, chord and off-on switch. These should be fitted with plastic gears of approx.

5/16-inch diameter, and run at at least 5000-6000 rpm. Motors should be wrapped in cloth tape so that the body can be used as a vibration source.

- flute (with low B)
  - grand piano (full concert grand is ideal)
  - 4-channel amplification minimum (speakers at opposed corners of the performance space)
  - prepared tape
  - stereo playback tape deck
  - one set of cue cards
  - 4 stop watches
  - 3 small wattage lamps for performer illumination.
  - small screwdriver
- (optional)
- lighting equipment and gels to suffuse the entire performance space with proper shades of rose or blue light.
  - matrixed mirrors for performing very restricted light shows of evanescent grey blurs and traces.

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The work is divided into three continuous sections (not specified in Beckett's text):

- (A) From the beginning up to the last phrase of the 21st sentence - "perhaps not alone." This section is in the present, primarily objective, descriptive, and static. Change is restricted and stimulation is low level (0' 0" - 5' 30").
- (B) From "perhaps not alone" up to the last word of the 50th sentence - "over." This section contains the first expressions, apparently from the perspective of the figure in the box: hope (future directed) and memory (past directed). Change - movement "to" and "away from" - is the norm. Connected (potentially lyrical) progressions of aural and visual elements are allowed, along with a very wide range of intensities. (5' 30" - 14' 30")
- (C) From "over" in the 50th sentence until the end. Though descriptive and reflective materials are still primary, other elements ("over" and "last") suggest resignation. In this section, strong, abrupt contrasts are encouraged, as well as gradual change; but the tendency should always be downhill (from complex to simple). The present dominates. (14' 30" - 22' 0")

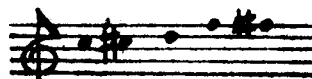
## SPECIFIC

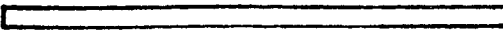
### AURAL



#### Live

Each section has specified pitch, dynamic, and temporal aspects:

- (A) Players are limited to five pitches and their microtonal variants in any octave.



Dynamic level may not change during the course of one sound, and possible levels range from pppp (just audible) to p (soft). Sounds of this shape should be  cool and unemotive.



Each player has a number ratio (FL: 1:3; PNO: 2:3; HCT: 2:1) that controls his actions in the following ways. The individual player establishes a tempo privately. Counting units at that tempo (e.g., 2 then 3 then 2 then 3, etc.), he alternately plays and rests. No two sounds are connected, though silences may be. The tempo changes abruptly after any group (e.g., a 2 and then a 3), but never gradually. Abrupt tempo changes result from adopting a heard or seen span of time as the unit for a new tempo. Since there are no pauses, everything is "in" some tempo. The ratio may, of course, be used as the basis for ...  ... polymetrical activity, or large units may be subdivided in keeping with the same proportion. ...  ...


In (A) the base tempo is always rather slow.

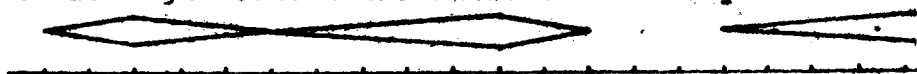
- (B) Three chords and microtonal variants of their pitches form the materials. Notes are played only in the given octave positions. The section begins with chord (1) at the pianist-leader's cue card "B." Chord (3) accompanies the 3' 30" tape sound, and may come directly after (1) or after (2), depending on the PSD operator's decisions.



Single or multiple sounds drawn from the given pitch materials are used, and up to three different sounds may be played consecutively. Extended ostinatic (melodic) invention is encouraged so long as one "phrase" contains no more than three different sound elements (single or multiple). After a silent unit, or a pause, a new pitch structure may begin.

Two types of dynamic shapes are used:  as in (A), and . The latter type begins very softly and rises to a maximum level of loudness and/or complexity before fading away. They should be expressive in the fullest sense. For the former, flat, unchanging shapes, the performer selects a dynamic between p and mf.

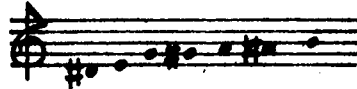
Each player has a three-termed ratio (FL: 1:3:4; PNO: 2:3:5; HCT: 2:1:3). According to the discussion of pitch above, three different sounds in changing order may continue for any length of time before a unit of silence (e.g., sound a, 2; sound b, 3; sound c, 5; b, 2; c, 3; a, 5; c, 2; a, 3; b, 5...). Also, for example, the build-up time and decay time of a  sound might follow the ratio in this way:



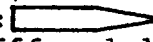


Polymetrical subdivisional techniques can also be used.

Ritards and accelerandos of the basic (private) tempi are the rule, but there are no abrupt tempo changes (as there are in (A)). Brief pauses may occur at any time in (B).

- (C) The following pitches and their microtonal variants are used in any octave. The norm in (C) should be (cue card "C") sounds that begin complexly and end simply. In such cases, the sound begins with any elements (clusters, "noises"), but should only end with one or more of the above pitches.



Dynamic patterns include the flat, unchanging , within a mf to ffff range; , from very soft up to mf and down; and a third combination: . The latter begins at any level between mf and ffff and diminishes to inaudibility.

Temporal ratios have two terms (FL: 1:4; PNO: 2:5; HCT: 2:3). Pauses, abrupt changes, and ritards in basic tempi are allowed. Accelerandos should not be used.

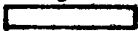

FL and HCT attempt to gradually match their private tempi at MM = 60 through careful listening during this section. PNO remains independent.

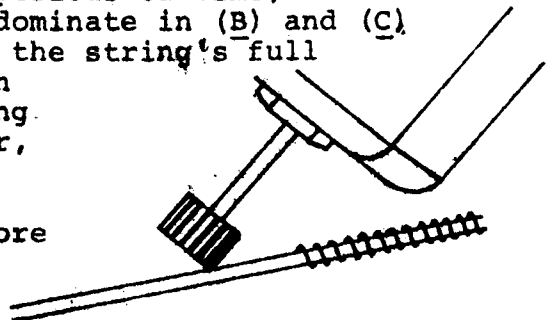
#### FLUTE

Some multiphonic sounds for each section are included in the part; additional multiple sounds that conform to the given pitch conditions may be used. During (3) of (B), combination hummed and played glissandi are used (humming preferably in the correct octave) so as to produce strongly beating sounds.

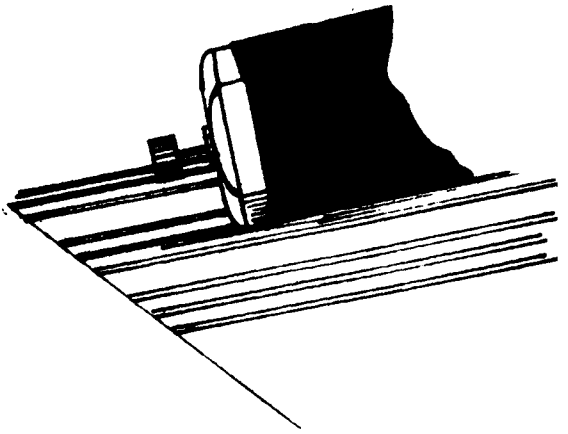
NB Normal sounds should be infrequently used.

#### PIANO

The pianist should use the lowest register liberally at the beginning and end of the piece (Low tones, over short periods of time, can approximate ). Motorized sounds predominate in (B) and (C), particularly very long  shapes, where the string's full resonance and various overtone structures can be explored. These sounds are made by buzzing the strings with the edge of the plastic gear, at first delicately and later more firmly. For lower strings, the short, unwound space near the bridge gives the best result. Explore the effects of using various node-points on the string. During (3) of (B), a buzzing ostinato should support the tape sonority.

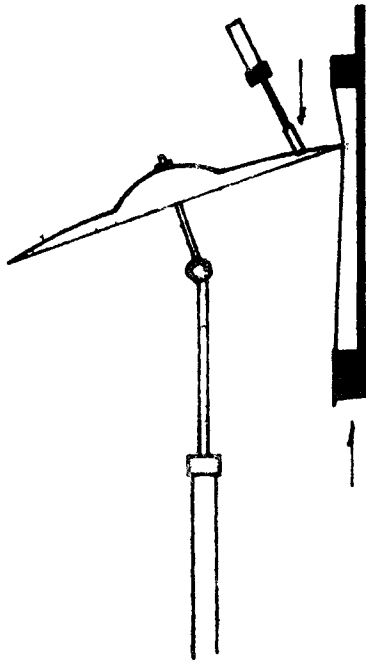


The vibration of the tape-wound motor casing also produces useful pitches when amplification is sufficient (or when modulation is in effect). Correct pitches can be obtained at the bridge, while a gradual sharpening occurs as one slides the motor down the string, from the keyboard.



NB Because of his role as leader, the pianist may break the rules of temporal relationships when necessary.

#### HARMONIUM-CYMBAL-TAM TAM (HCT)



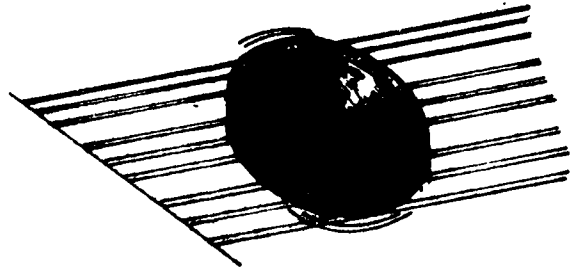
The HCT performer prepares a cymbal and tam tam by marking correct bowing and stopping points for each found pitch with a wax pencil. A variety of pure pitches are available on every good cymbal, and may be determined by experiment. Adjust the cymbal plate so that it makes an angle with the plane of the floor. Press the point of a small-sized screwdriver firmly against the upper surface of the cymbal and stroke the bow upwards (or if the cymbal is stopped on the under surface, stroke downwards). Experiment with different stopping and bow positions (stopping positions are usually between 1 and 5 inches in), so that numerous reliable combinations of stopping nodes and bowing points on the edge emerge. Use rosin freely on the bow, with firm stopping and delicate bowing. The tam tam is difficult to stop successfully and it is best to try various gongs until one with a useful pitch is found (especially one of the pitches of (3) in (B)).

#### TIMED MIXTURES

During the course of the work, the normal flow of improvisatory sound may be broken on cue from the pianist-leader. Preparations for TM's are made on signal by means of five cue cards ("LIGHT," "HEAT," "INVISIBLE," "TIME," and "WHITE"). The actual TM begins on hand cue several seconds later. Normal instrumental sound continues until interrupted; the player not involved in the TM begins normal playing immediately with the cutoff in order to maintain the flow of sound.

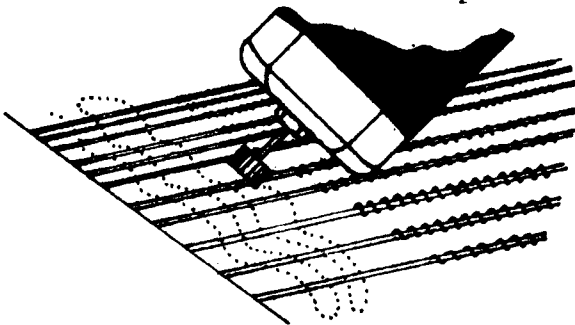
Each TM lasts 7 seconds (or some multiple: 14", 21", 28", ...). They may begin any time within the limits periodically marked in the parts, but the leader is free to use as few or as many as he wishes. (Minimum is one each of "LIGHT," "HEAT,"....) Each card signifies a particular timed mixture of sound as follows:

**LIGHT** - PNO places two disks so that their raised centers rest on appropriate strings (depending on the section). The disks are set in motion, producing a fast, trembling vibration that is maintained as fast and smoothly as possible.

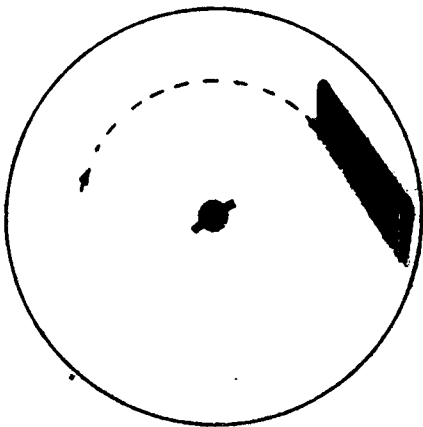


At the same time, the HARM plays the lowest allowed pitch. These two sounds modulate each other at a pp level.

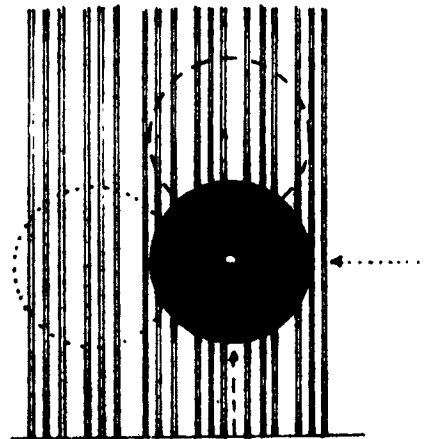
**HEAT** - PNO uses motorized plastic gear quickly, smoothly, loudly buzzing back and forth over a group of lower wound strings that will produce high, beating overtone clusters. HCT plays a cluster in the harmonium's top octave as loudly as possible. PNO and HARM modulate each other at fff level.



**INVISIBLE** - PNO using the flat bottom-sides of the disks, presses them gently across or down the mid-range strings producing a series of high, shrill, singing shrieks.



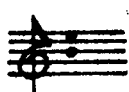
HCT uses the small tips of two hard rubber combs circularly around the CYM and/or TAM TAM surfaces to produce similar high, singing, delicate shrieks. No modulation is used.



**TIME** - PNO vibrates lower wound strings with the taped motor casing, creating a dull rumble. HCT uses his motor similarly on the TAM TAM.

PNO and TAM TAM modulate each other at a p level.

**WHITE** - FL plays multiphonic sound softly, blending with the HARM which sounds the following chord:



FL and HARM modulate each other at a pp level.

Three non-instrumental sounds ("FLASH," "PING," "MURMUR") are supplied on the tape (cf., below).



## RING MODULATOR

The ring modulator should provide instantaneous switching between various signal and carrier inputs. FL and PNO are signals while HARM, CYM, and TAM TAM are carriers. The RM operator automatically modulates one segment of each section ((A), 1' to 2' 15": FL-HCT; (B), 5' 30" to 7' 15": PNO-HCT; (C), 14' 30" to 16' 15": FL-HCT). In addition, when the 3' 30" tape sound begins during (B), the PNO and HCT should constantly modulate each other throughout, with the RM operator following any changes in instrument by HCT. For the remainder of the time (except for the first and last minutes of the piece), the RM operator watches for TM cues.

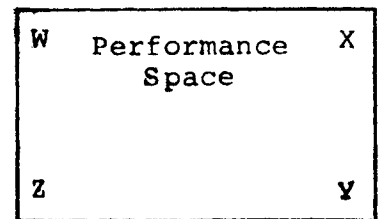
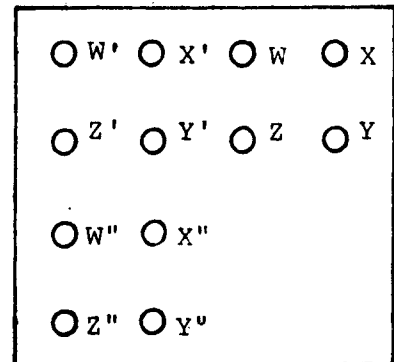
Dynamic levels and shapes should agree with the instructions for each section in the instrumental parts.

## PSD

The PSD has four groups of photo-resistors. They are activated by light and thereby control the distribution of sound sources between four independent channels (speakers).

RM: W X Y Z  
tape channel A: W' X' Y' Z'  
tape channel B: W" X" Y" Z"

If, for example, one shines a pen light on W while rotating another from Z' to Y' to X', the live source would remain stationary, coming from speaker W, while the tape channel A sound would come first from speaker Z, then Y, and finally X, in effect, moving counter-clockwise around the space. The closer the pen light is held to the light-sensitive element, the more current is passed, and the louder the associated sounds will become. Because of this ability to control dynamic level, the PSD operator must observe directions for permissible dynamic levels and shapes in each section. The pen lights' positions may also be adjusted so that their beams fall on more than one photo-resistor at a time.



The PSD operator can produce a more controlled result if he is equipped with earphones connected to a stereophonic microphone source in the middle of the performance space. If a normal hall with stage is used for the performance, it is difficult for the PSD operator, from the stage, to accurately judge the character of the sound in the hall itself.

The 25-minute tape includes four different kinds of sound elements, each of which is preceded by a characteristic leader:

Red-white leader (short) - 3-second "MURMUR" sounds occur every 49 seconds throughout the performance (beginning after the first three minutes during which the tape machine is not turned on). "MURMUR" begins at any speaker but always ends at X.

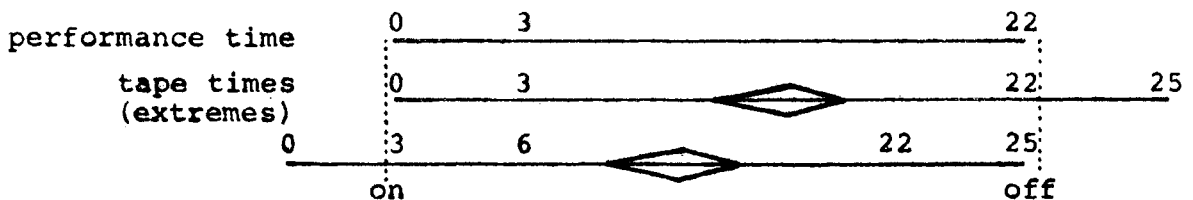
White leader (short) - Single "PING" sounds occur every 21 seconds throughout the performance (beginning somewhat after the "MURMUR"). "PING" always comes from speaker Z.

Red-white - white leader (short) - simultaneous "PING" and "MURMUR" sounds, according to the above conditions.

Black-white leader (long) - a continuous 3' 30" complex sound that begins at Z, rotating counter-clockwise. After 2 minutes, it reaches a dynamic high-point (maximum possible) at speaker X, gradually dying out as it returns to Z. (The final 10 seconds should be slightly louder, and the instrumental sounds should thin out so that the quality of reverberation on the tape is clearly heard.

White-green-white leader (short) - During (C), there are three identical 7-second segments of stereo sound, "FLASH." Only one of the three is allowed to sound, and the PSD operator selects the one which is nearest in time to the 18' 15" point of the performance. The tape machine output should be cut during the passage of the other two "FLASH" segments in order to avoid leakage. Dynamic level during the performed "FLASH" is maximum, with both channels moving very rapidly around the performance space.

Since the piece consumes only 22 minutes, the tape can be started anywhere between its beginning and its three-minute point. But no matter what point on the tape the PSD operator chooses to begin with, the machine is actually turned on in performance only after exactly three minutes of the performance have elapsed. Depending on where the tape begins, the 3' 30" pre-recorded sound will fall at different points during section (B).



## SPECIFIC

### VISUAL

A detailed scenario is available in case closed-circuit TV is used for the primary image. Otherwise, the prepared film is projected at standard sound rate (24 frames per second).

The slides are divided evenly and are presented alternately, L1, R1, L2, R2, ... throughout the performance. Each sentence is allotted either 15 seconds or 30 seconds. The first slide for each sentence,

unit must occur on a 15" division, but any others required to complete the sentence follow freely at the projectionist's discretion. Within the sentence's assigned duration, slides may fade in and out slowly (overlapping or not) or flash rapidly leaving an interval of darkness before the next obligatory beginning.

Seven extra 15-second periods are used freely to emphasize (The viewing time of selected words or phrases may be elongated by 15", 30", etc.) or to break the periodic flow of sentences (by creating black-outs of 15", 30", etc.). If the automatic slide projectors have less than 80-slide trays, a free period may be used to change trays, etc.

Colored filters provide the basic range of color shown in the center-fold. They are graded in intensity from pale to strong, and one half is blurred:



These filters and other optical devices should be used sparingly according to the following conditions:

<u>section</u>	( <u>A</u> )	( <u>B</u> )	( <u>C</u> )
Blue only	Blue, red, and orange	Red and violet only	
Effects (blurs, color, use of prisms or lense configurations) are prepared before the slide is projected and remain unchanged during projection.	Effects should always be changing (in general, from simple to complex-intense and back to simple). Use changing color intensity as well as image distortion.	Effects are prepared before projection but gradually simplify during projection. Use changes from intense color to white.	
No one effect or technique may be used for consecutive slides (except for straight black and white projection).	One effect or a sequence of up to three can be used over an extended period, influencing many consecutive slides	One effect may last for several consecutive slides but the projectionist should always allow a straight black and white interval before introducing a new effect.	

In (B), slow or rapid flashing, in random order, of not more than three slides may be used. This is a visual counterpart to the sound *ostinati*, and, if slow, its timings should relate to the PNO's 2:3:5 number ratio.

Environmental effects are optional. Seven 1-second periods of "traces, blurs, ..." are allowed. They should be colorless and occur less frequently as the performance progresses.

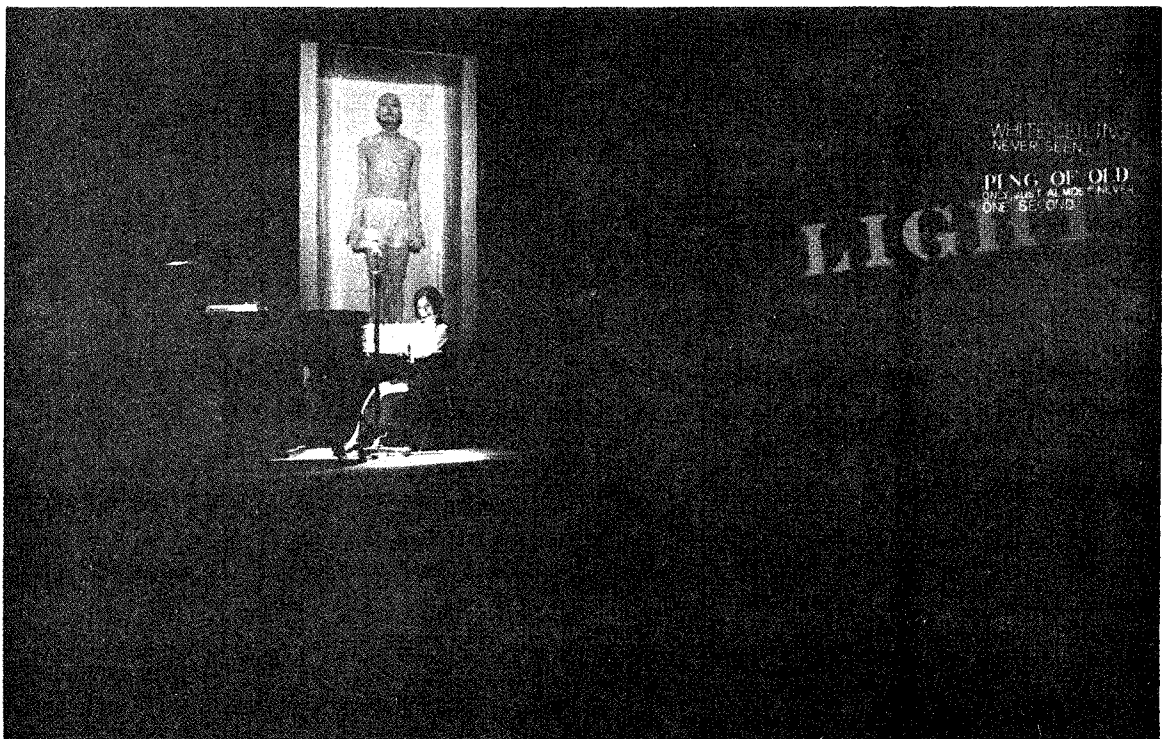
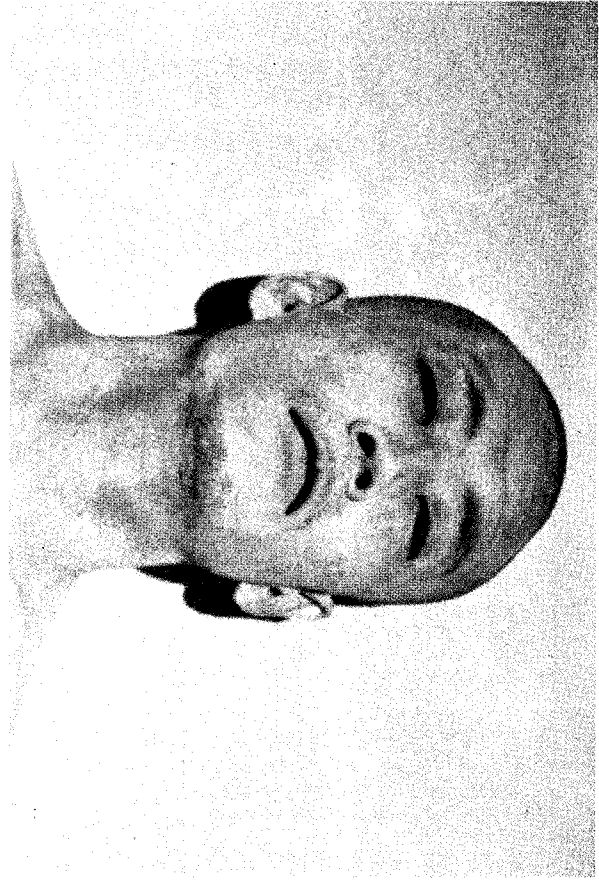
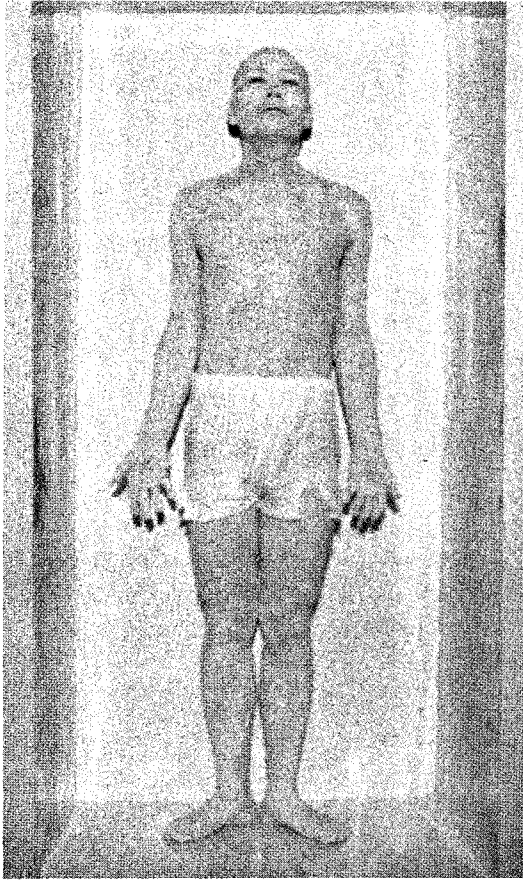
Up to three 7-second periods of environmental color are allowed. Only rose or blue light matching the filters should be used. These periods are timed to fall during the blackout sections of the film.

NB If the film projector runs fast, the film may be elongated by stopping the projector during the blackouts. If too slow, the performed sound continues until the film's end. Slide projection and tape sounds end as usual (21' 45" for slides and 22' for tape).

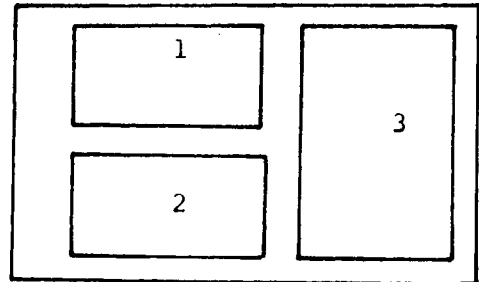
PING by Samuel Beckett (Used by permission of the publishers Calder and Boyars, Ltd., London, and Grove Press, New York.)

All known all white bare white body fixed one yard legs joined like sewn.  
Light heat white floor one square yard never seen.  
White walls one yard by two white ceiling one square yard never seen.  
Bare white body fixed only the eyes only just.  
Traces blurs light grey almost white on white.  
Hands hanging palms front white feet heels together right angle.  
Light heat white planes shining white bare white body fixed ping fixed elsewhere.  
Traces blurs signs no meaning light grey almost white.  
Bare white body fixed white on white invisible.  
Only the eyes only just light blue almost white.  
Head haught eyes light blue almost white silence within.  
Brief murmurs only just almost never all known.  
Traces blurs signs no meaning light grey almost white.  
Legs joined like sewn heels together right angle.  
Traces alone unover given black light grey almost white on white.  
Light heat white walls shining white one yard by two.  
Bare white body fixed one yard ping fixed elsewhere.  
Traces blurs signs no meaning light grey almost white.  
White feet toes joined like sewn heels together right angle invisible.  
Eyes alone unover given blue light blue almost white.  
Murmur only just almost never one second perhaps not alone.  
Given rose only just bare white body fixed one yard white on white invisible.  
All white all known murmurs only just almost never always the same all known.  
Light heat hands hanging palms front white on white invisible.  
Bare white body fixed ping fixed elsewhere.  
Only the eyes only just light blue almost white fixed front.  
Ping murmur only just almost never one second perhaps a way out.  
Head haught eyes light blue almost white fixed front ping murmur ping silence.  
Eyes holes light blue almost white mouth white seam like sewn invisible.  
Ping murmur perhaps a nature one second almost never that much memory almost never.  
White walls each its trace grey blur signs no meaning light grey almost white.  
Light heat all known all white planes meeting invisible.  
Ping murmur only just almost never one second perhaps a meaning that much memory almost never.  
White feet toes joined like sewn heels together right angle ping elsewhere no sound.  
Hands hanging palms front legs joined like sewn.  
Head haught eyes holes light blue almost white fixed front silence within.  
Ping elsewhere always there but that known not.  
Eyes holes light blue alone unover given blue light blue almost white only color fixed front.  
All white all known white planes shining white ping murmur only just almost never one second light time that much memory almost never. \*  
Bare white body fixed one yard ping fixed elsewhere white on white invisible heart breath no sound.  
Only the eyes given blue light blue almost white fixed front only color alone unover.  
Planes meeting invisible only one shining white infinite but that known not.  
Nose ears white holes mouth white seam like sewn invisible.  
Ping murmurs only just almost never one second always the same all known.  
Given rose only just bare white body fixed one yard invisible all known without within.  
Ping perhaps a nature one second with image same time a little less blue and white in the wind.  
White ceiling shining white one square yard never seen ping perhaps way out there one second ping silence.  
Traces alone unover given black grey blurs signs no meaning light grey almost white always the same.  
Ping perhaps not alone one second with image always the same same time a little less that much memory almost never ping silence.  
Given rose only just nails fallen white over.  
Long hair fallen white invisible over.  
White scars invisible same white as flesh torn of old given rose only just.  
Ping image only just almost never one second light time blue and white in the wind.  
Head haught nose ears white holes mouth white seam like sewn invisible over.  
Only the eyes given blue fixed front light blue almost white only color alone unover.  
Light heat white planes shining white one only shining white infinite but that known not.  
Ping a nature only just almost never one second with image same time a little less blue and white in the wind.  
Traces blurs light grey eyes holes light blue almost white fixed front ping a meaning only just almost never ping silence. \*  
Bare white one yard fixed ping fixed elsewhere no sound legs joined like sewn heels together right angle hands hanging palms front. \*  
Head haught eyes holes light blue almost white fixed front silence within.  
Ping elsewhere always there but that known not.  
Ping perhaps not alone one second with image same time a little less dim eye black and white half closed long lashes imploring that much memory almost never. \*  
Afar flash of time all white all over all of old ping flash white walls shining white no trace eyes holes light blue almost white last color ping white over. \*  
Ping fixed last elsewhere legs joined like sewn heels together right angle hands hanging palms front head haught eyes white invisible fixed front over. \*  
Given rose only just one yard invisible bare white all known without within over.  
White ceiling never seen ping of old only just almost never one second light time white floor never seen ping of old perhaps there. \*  
Ping of old only just perhaps a meaning a nature one second almost never blue and white in the wind that much memory henceforth never. \*  
White planes no trace shining white one only shining white infinite but that known not.  
Light heat all known all white heart breath no sound.  
Head haught eyes white fixed front old ping last murmur one second perhaps not alone eye unobtrusive black and white half closed long lashes imploring ping silence ping over. \*

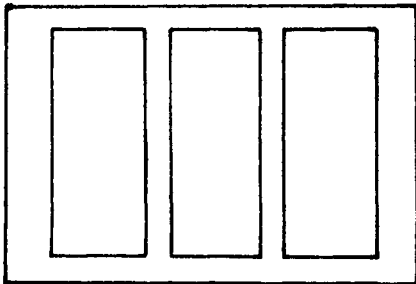
\* designates sentences with 30-second duration. All others: 15".



- 1) closeup and (2) full body views from the prepared film
- 3) view from a performance

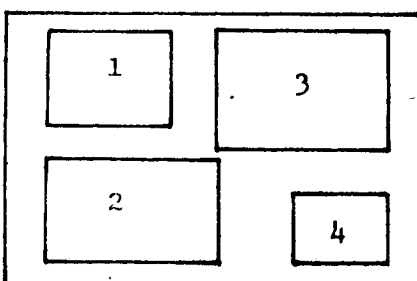
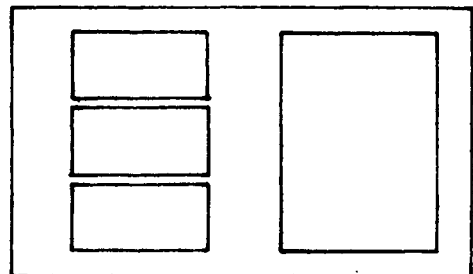


NB Audience members should be seated as far apart as possible in order to accentuate the sense of isolation, and to enhance individual attentiveness.

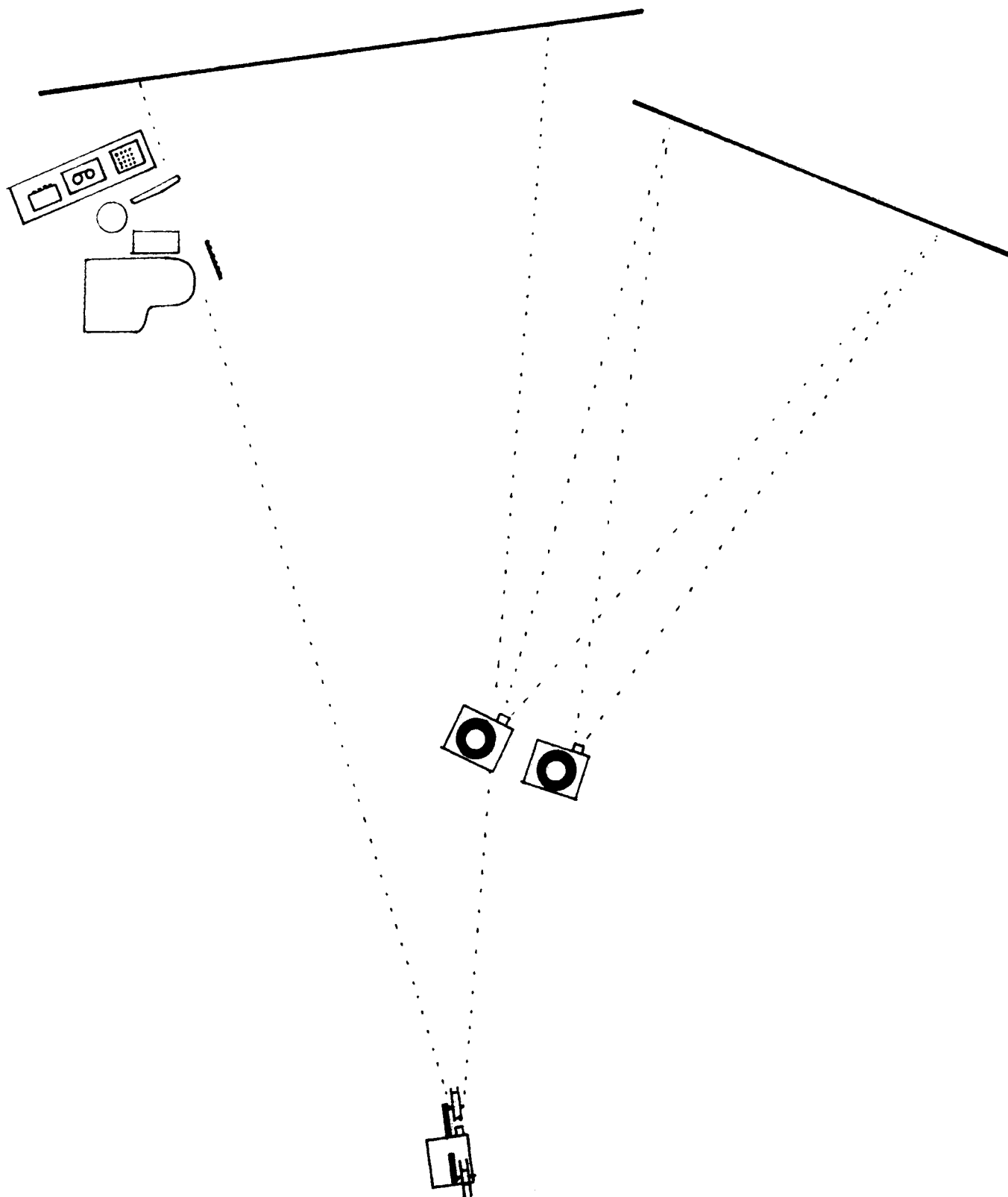


The three basic colors used both in the film and the prepared filters. If an independent visual presentation is made, or if environmental color is used, the blue and red shown here are taken as models. They, along with the purple and the orange shown on the opposite page, approximate the most intense end of the color scale used for the four prepared filters (cf., discussion of visual materials, p.5)

Superimposed slides, indicating some of the many possibilities for visual elaboration (here using vinyl sheets for blurring and a prism for multiplying the images).

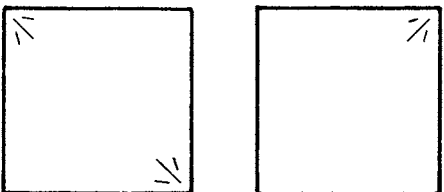


- 1) microphone stand bases (with bottoms ground flat) and small electric motor (tape wound and fitted with small plastic gear)
- 2) ring modulator
- 3) photocell sound distributor
- 4) Slides Right 34 and Left 35, shown here, are used to align the two projectors.

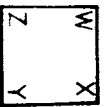


**P S D**  
**A**  
 p  
 pppp

1 min - 2 min | 5 sec :  
 only fixed and  
 unmoving patterns:  
 e.g.,

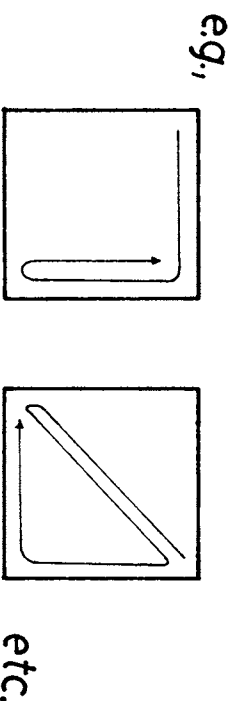


etc.



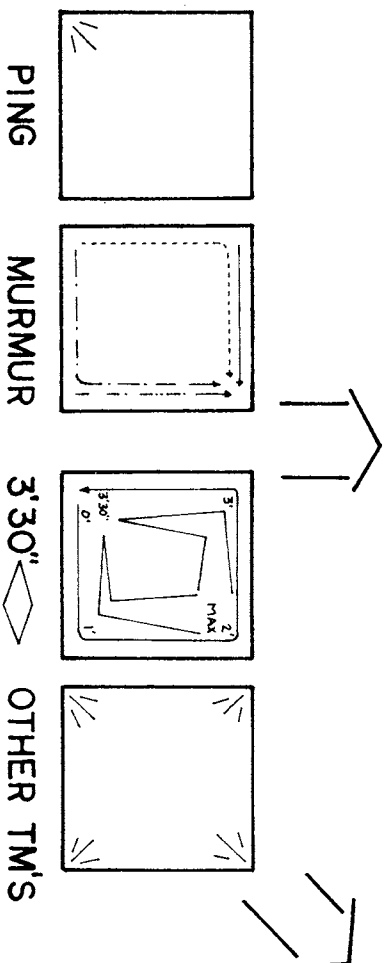
**B**  
 mf  
 pp  
 max

5 min 30 sec - 7 min | 5 sec :  
 only moving patterns  
 (speed of movement:  
accel, rit, unchanging):



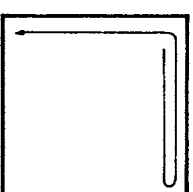
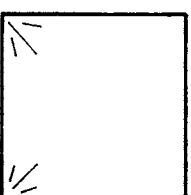
overall tendency in B is always clockwise  
 except :  
 3'30" tape sound goes counter-clockwise

**NB** except for **FLASH**, all movement is relatively slow



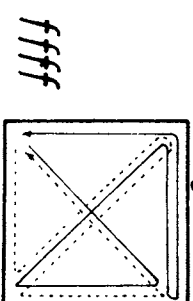
**C**  
 ffff  
 mf  
 mf

14 min 30 sec - 16 min | 5 sec :  
 fixed or moving configurations  
 (speed of movement: rit or  
unchanging):  
 e.g.,

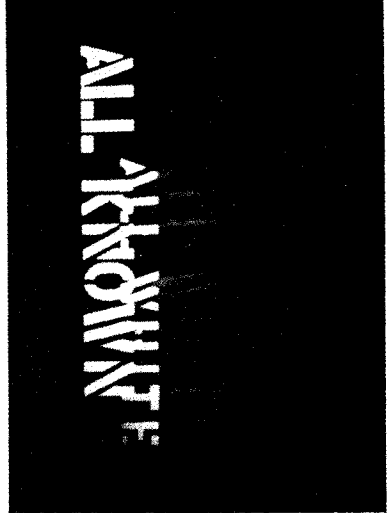
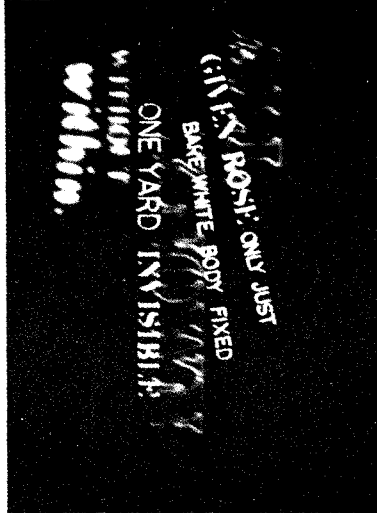
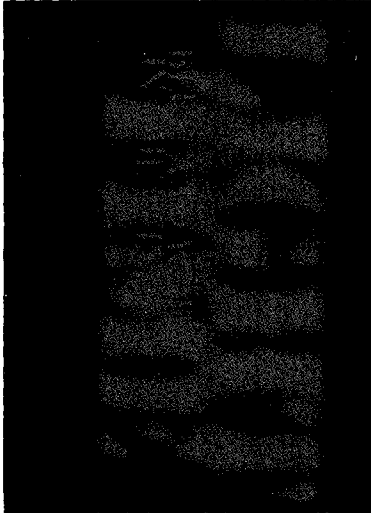


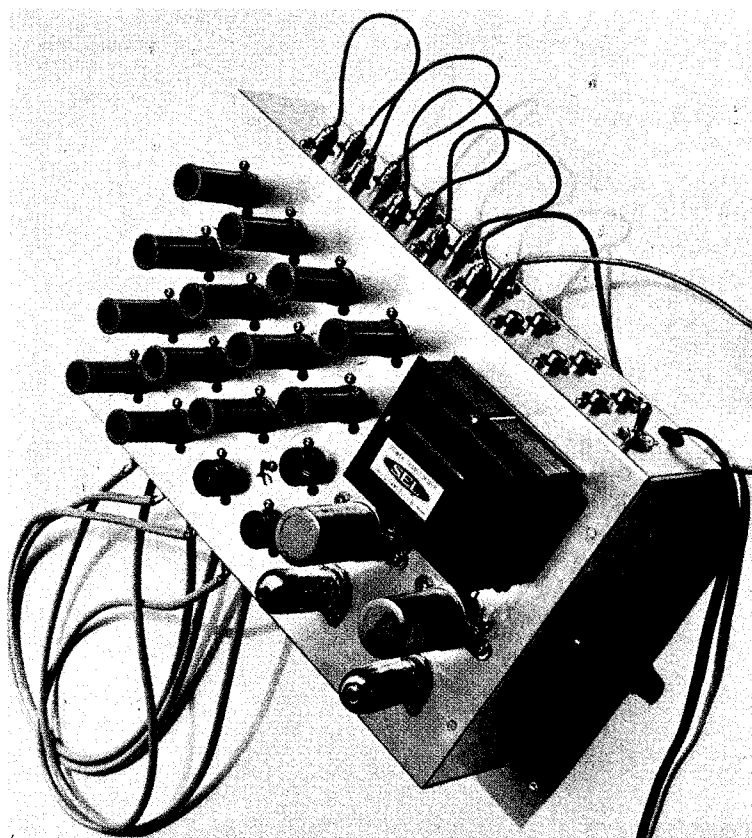
etc.

**FLASH**, between  
 17'30" and 19'00",  
 as fast as possible  
 crisscrossing

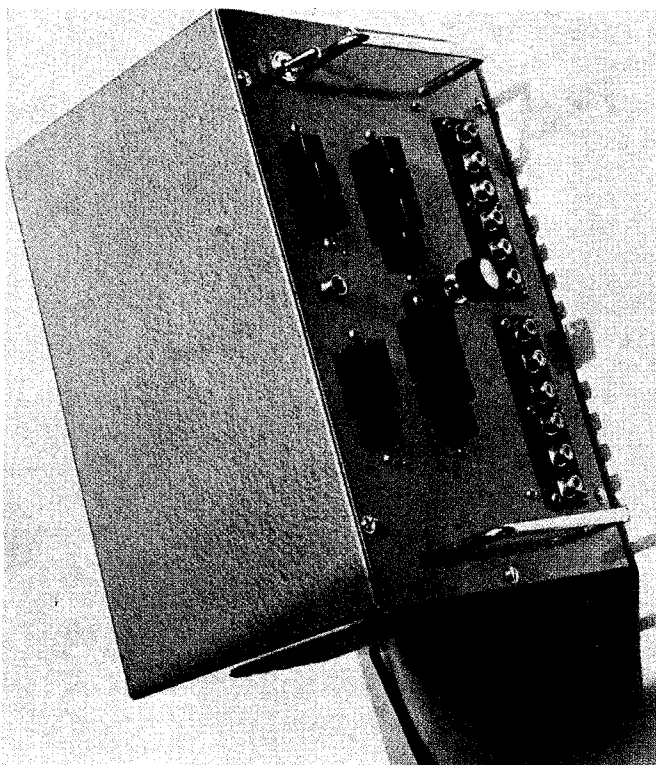
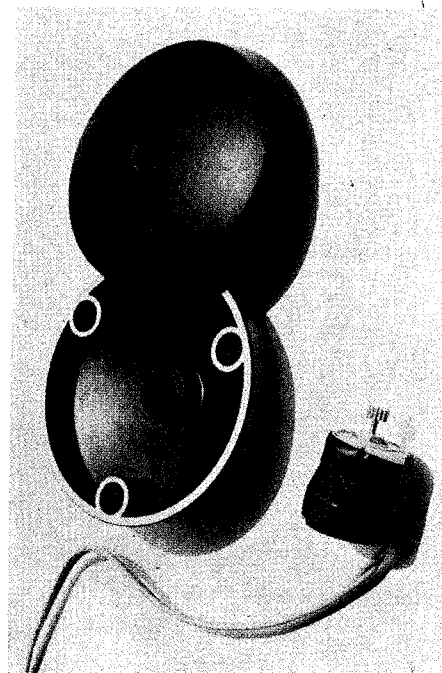






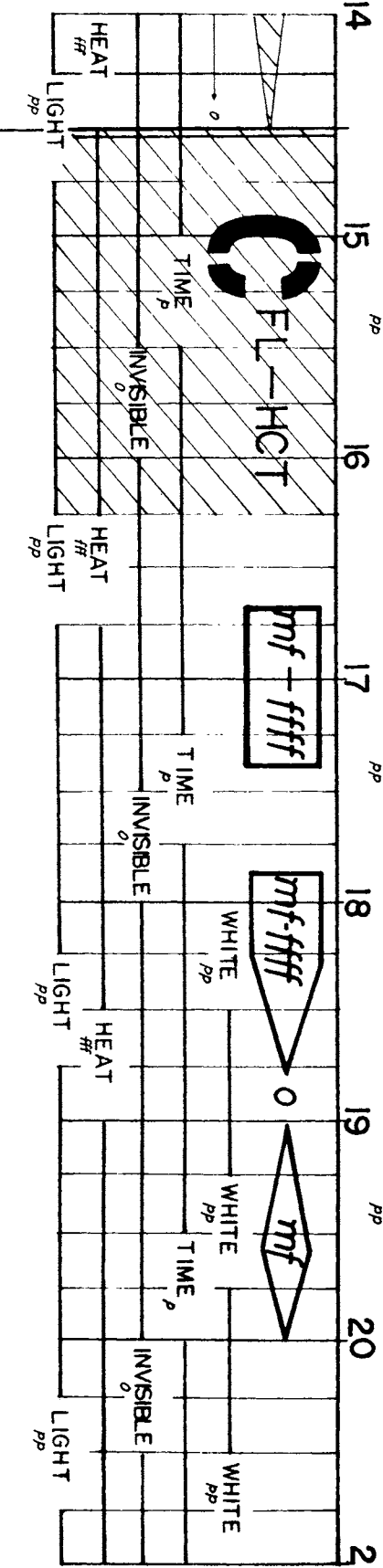
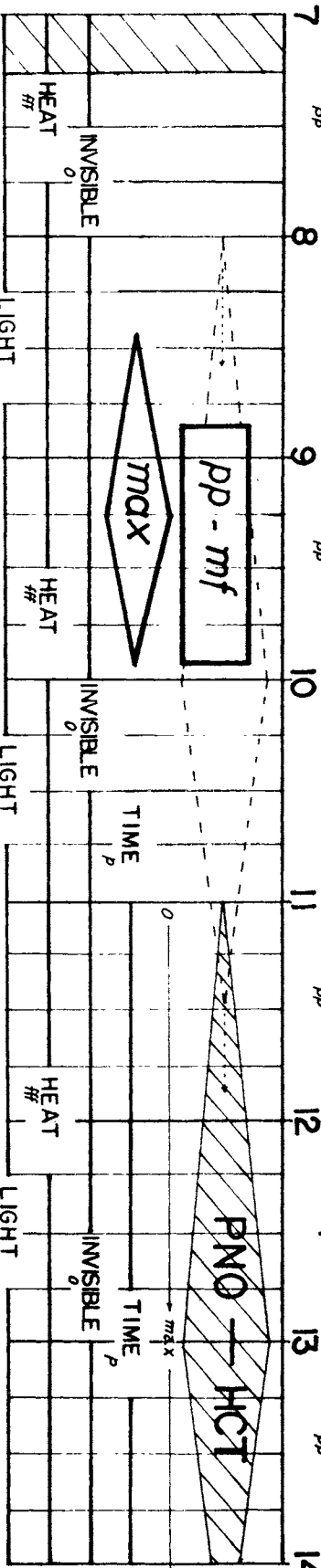
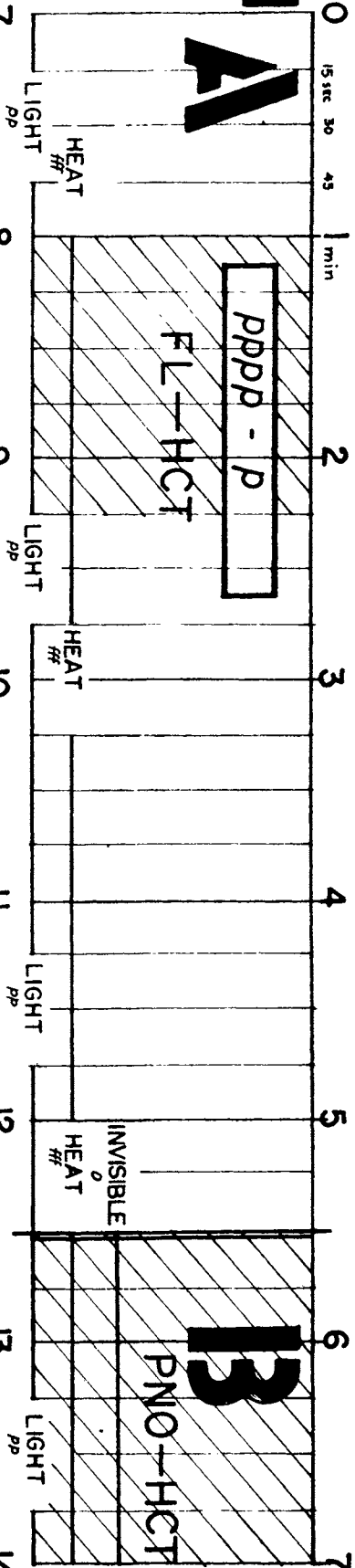


EYES HOLES LIGHT BLUE  
GIVEN BLUE LIGHT BLUE  
ALMOST WHITE ONLY COLOUR  
FIXED FRONT.  
PING ELSEWHERE  
ALWAYS THERE  
BUT THAT KNOWN NOT.



12M1

A



0 15 30 45 1 2 3 4 5 6 7

**A**

HEAT

any octave

multiphonic sounds  
whistle tones

P pppp

TEMPORAL:  
abrupt change  
no pauses

INVISIBLE

HEAT

LIGHT

**B**

INVISIBLE

HEAT

LIGHT

7 8 9 10 11 12 13 14 15

*mf*  
*pp*

multiphonic sounds

as written

glissandi  
vocal - instrumental  
multi-sound

MAX

1 2 3 4

TEMPORAL:  
accelerate  
ritard  
pause

INVISIBLE

HEAT

LIGHT

INVISIBLE

HEAT

LIGHT

INVISIBLE

HEAT

LIGHT

INVISIBLE

HEAT

LIGHT

# F1.

14 15 16 17 18 19 20 21

HEAT LIGHT HEAT LIGHT HEAT LIGHT HEAT LIGHT

INVISIBLE TIME INVISIBLE TIME INVISIBLE TIME INVISIBLE

multi-phonics normal

multi-phonics vocal-instrumental

any octave

**TEMPORAL:**  
abrupt change  
accelerate  
pause

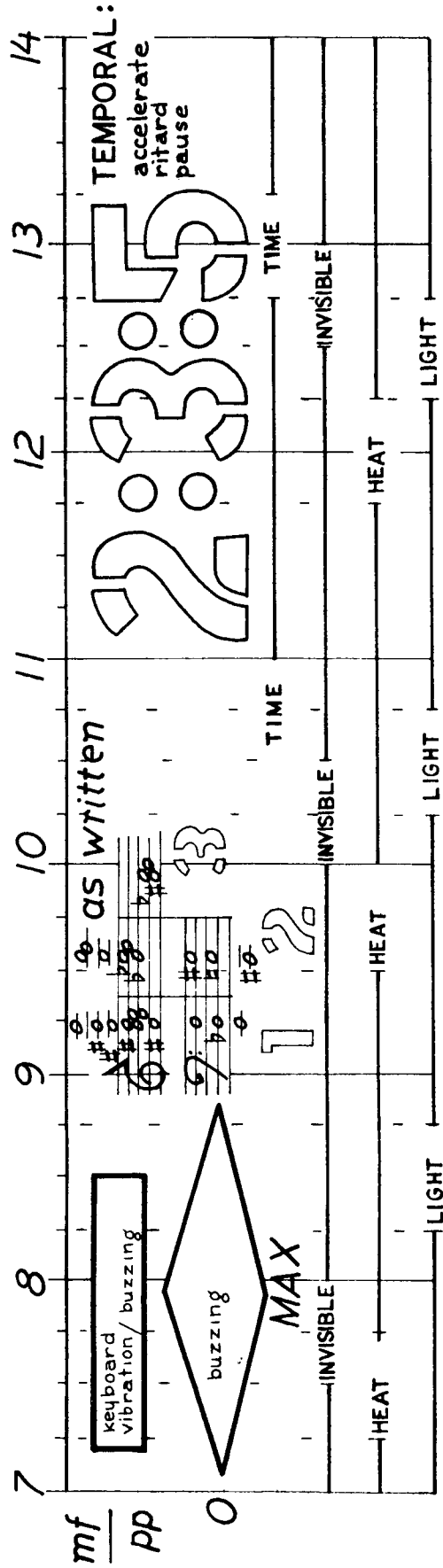
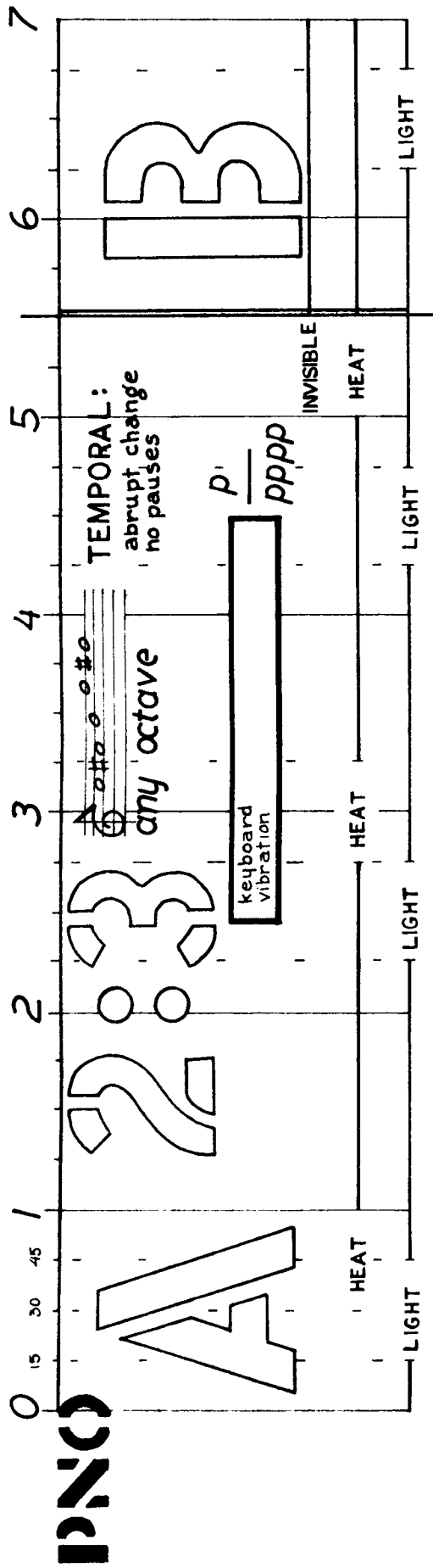
21 22

23 24

25 26

27 28

**NB**  
fingerings and approximate pitches  
are for flutes with low B.



21

22

## PERFORMER'S NOTES

any octave

**TEMPORAL:**

abrupt change  
accelerate  
pause

TIME

Vibrate low strings with tape-wound motor casing.

# INVISIBLE

Disks (flat sides down) are pushed slowly down or across mid-range strings.

# HEAT

Buzz a group of lower strings with motorized plastic gear.

# LIGHT

Place disks (flat sides up) on appropriate strings and vibrate rapidly.

**FICT**

0	15	30	45	1	2	3	4	5	6	7	
A				2:1				B			
HEAT				LIGHT				LIGHT			
harmonium bowed cymbal / tam tam				any octave				TEMPORAL: abrupt change no pauses			
p				pppp				INVISIBLE			
HEAT				HEAT				HEAT			

7	8	9	10	11	12	13	14
mf		pp		as written		2:1:3	
harmonium bowed cymbal / tam tam		harmonium bowed / buzzed cym tam		TIME		TIME	
MAX		1		2		INVISIBLE	
INVISIBLE		INVISIBLE		INVISIBLE		INVISIBLE	
HEAD		HEAT		HEAT		HEAT	
LIGHT		LIGHT		LIGHT		LIGHT	
TEMPORAL: accelerate ritard pause							



**FACT**

14 15 16 17 18 19 20 21

cluster  
bowed < cym  
tam tam  
mf

ffff

mf

INVISIBLE

TIME

HEAT

LIGHT

INVISIBLE

TIME

INVISIBLE

WHITE

WHITE

WHITE

WHITE

WHITE

WHITE

any octave

#0 0 #0 0 #0 0

PERFORMER'S NOTES

21 22

**TEMPORAL:**

abrupt change  
accelerate  
pause

**INVISIBLE -**

Stroke cymbal and/or  
tam tam surface circular-  
ly with rubber comb tips.

**HEAT -**

Play highest harmonium  
cluster as loudly as  
possible.

**LIGHT -**

Play lowest possible harm  
note (depending on section)  
softly.