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9 evenings: theatre & engineering

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In August ~~of~~ 1964, the Merce Cunningham Dance Company performed in Stockholm. Alex Hay and Robert Rauschenberg designed sets and costumes. John Cage and David Tudor composed and performed the music. Steve Paxton and Deborah Hay danced with the company. In September of the same year Fylkingen sponsored a series of performances "5 New York Evenings" at Moderna Museet which included two evenings of dance by the Cunningham Company, a piano concert by David Tudor, and evening of dance and talk by Yvonne Rainer and Robert Morris, and a Robert Rauschenberg dance concert. Thus, most of the artists who were to participate in "9 evenings" had not only been working and performing together but were known to the Swedes.

After his meetings with Klüver, Wiggen returned to Stockholm; and soon after, Fylkingen announced that the 'Stockholm Festival for Art and Technology-Visions of the Present' would take place September 18-25, 1966. Wiggen conceived of the symposium as a means to present modern technology to the artists, art to the technically oriented, and both to the general audience. Demonstrations and lectures as well as artistic performances using technology were planned: Marshall McLuhan, Buckminster Fuller, and J. R. Pierce were to be invited to participate.

On January 14, 1966, Billy Klüver brought the artists and engineers together for the first technical meeting at Bell Telephone Laboratories in Murray Hill, New Jersey.

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According to Klüver's diary, the following artists attended: John Cage, Lucinda Childs, Öyvind Fahlström, Alex Hay, Deborah Hay, Steve Paxton, Robert Rauschenberg, David Tudor. Among the scientists and engineers attending were Max Mathews, John Pierce, Manfred Schroeder, Stretch Winslow. Klüver described the first meeting:

> "I had told the artists--think of something you would like to do. Anything. The engineers--I don't remember what I said, but then it appears easier to waste an engineer's time than an artist's. Myself, I was scared. The air was stiff. Debbie kept talking about her stretchy plastic. How much can you stretch rubber? Not much, unless you use a lot of power. Öyvind and Bob wanted to fly. Jets? Helium? Too difficult. John Pierce said to Stretch, "Tell them what you have. Talk about things." The ice was broken. More sessions, more ideas. A pattern emerges. Maybe. What are we doing at 13,000 feet? It's a long walk to earth."

The project, ultimately referred to by the Americans as the 'Stockholm thing' was underway. By March 8, six more meetings had been held and the participants had a list of 66 suggestions for projects(1). Fifteen of the projects were being actively pursued and definite progress could be reported on five. Cecil Coker had made the first tests, with good results, on the Doppler sonar at 100 kHz. Harold Hodges had completed the design for Oyvind Fahlstrom's anti-misile missile, a floating form which follows a person.

(1) See Document I for complete list of suggestions for projects.

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2 - ORIGIN 2D-1

2D-2

Position near text page 2-6

Facimile reproduce

CAPTION: Notes prepared by ~~Steve~~ Steve Paxton and Robert Rauschenberg for first meeting, January 14, 1966

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2 - ORIGIN

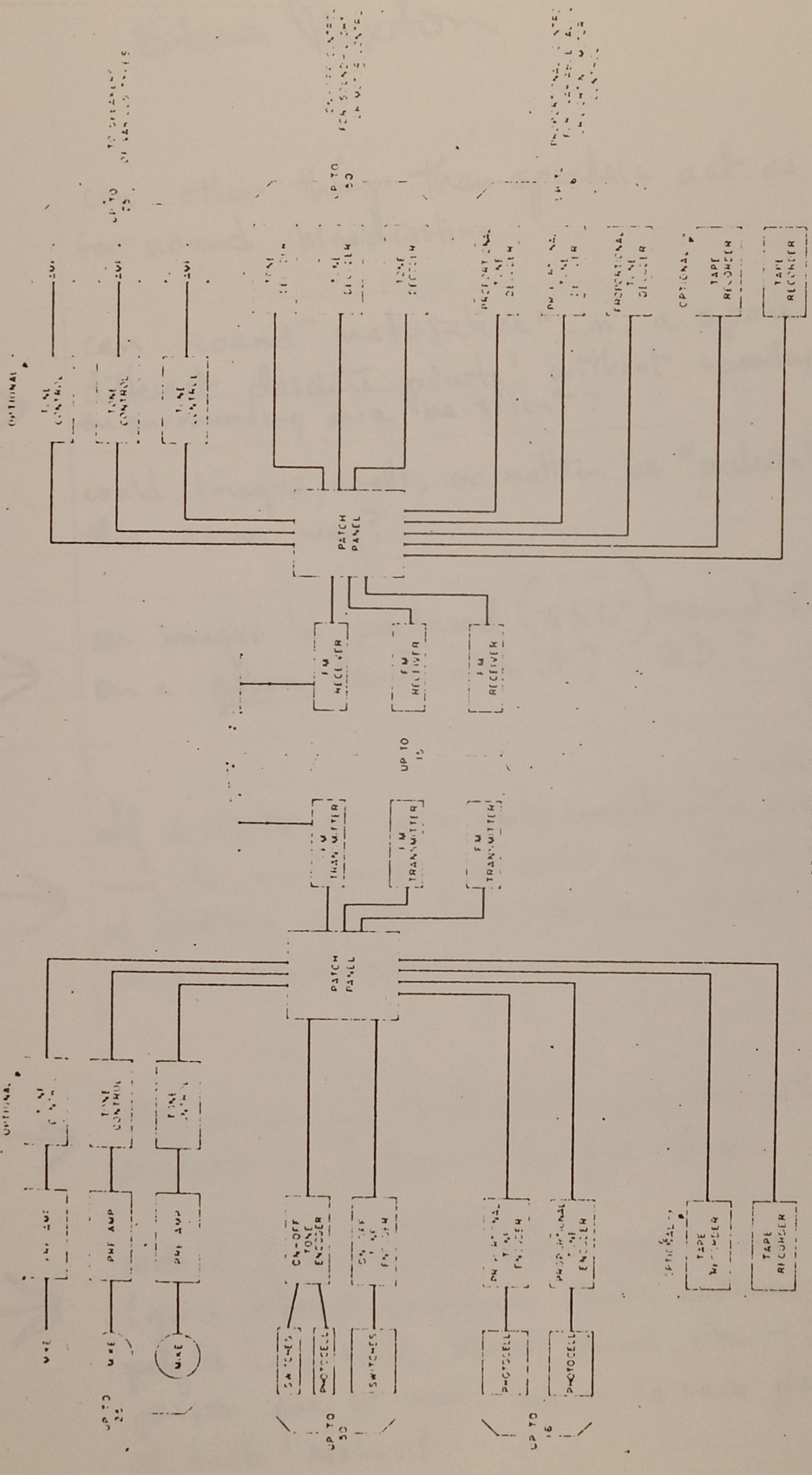
2D-3

Position on text 2-7

"Wireless system"

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COMMUNICATION SYSTEM FOR
THEATER AND ENGINEERING FESTIVAL

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Steve Paxton

can other things than speakers act as speakers for sound broadcasting

can sound "materialize" in a space at different discrete points? without speakers? can the surrounding area be silent?

could images, smells, or matter be "materialized" in this same way?

can images be produced (360°) around the projector, or a plane level with it? 3D.?

If a dictionary were programmed with pictures (+movies) corresponding to word meanings, could one have a situation of seeing visualizations, standardizations of words + words' combinations?

. . . . . .

source for behind-the-ear or in-the-ear recievers + a transmitter for these.

method of determining (discovering) where people are looking. (given different situations: theater audience, group of people in a field, street crowd, etc – solo person, person far or near: where is each person looking at each instant

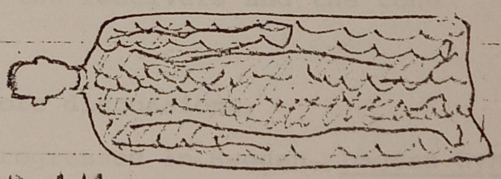
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(1) SOUND RESPONSIVE COSTUMES OR ATTACHMENTS. (SENDING + RECIEVING ELECTRONIC SOUND)
THIS WOULD ENABLE THE PERFORMERS TO BE RESPONSIBLE FOR NOT ONLY WHAT THEY LOOKED LIKE BUT WHAT THEY SOUNDED LIKE.
THE SOUND WOULD BE THE DIRECT RESULT OF THE RELATIONSHIP OF DANCER TO DANCER, OBJECT OR AUDIENCE.

(2) THE POSSIBILITY OF TRASMITING VISIBLE CHARGES BETWEEN DANCERS FROM BODY OR COSTUME.
(LIKE POCKET LIGHTNING)

(3) A PLASTIC MANSIZE FLEXIBLE TANK.
SOME DESIGN TO ENABLE ONE TO GET IN + OUT OF IT WITH OUT FLOODING WOULD BE A DESIGN PROBLEM, BUT THE KIND OF PLASTIC + TYPE OF SEAMING MORE OF A PROBLEM.



(4) ANY IDEAS ABOUT WEIGHTLESSNESS,

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The nature of the artists' individual requests had led the engineers to decide that a portable, battery-operated system would be ~~necessary~~ desirable. toOn March 1 Dick Wolff reported the general design was fixed for the wireless system. It was described:

"The basic components of the system are the transmitters and the receivers. These are in the FM band and will hopefully be crystal controlled, that is, they will be very stable.

"Over each transmitter either sound or signals to activate relays can be transmitted.

"The transmitters can be collected into one console with the receivers in the field, the receivers can be collected into one console with the transmitters in the field or both transmitters and receivers can be in the field.

"The signals that activate relays can come from photocells, pushbuttons, or other types of switch-ring units.

"When the transmitters are in console, the inputs can be switched in a 'plugboard', that is, each source (radio, tape recorder, etc.) can be switched to each receiver in the field. A travelling sound can be obtained.

"Each receiver will have its own two-watt amplifier. The mixers may be used with the receivers and the tone decoders."

More meetings were held. More discussions.

As plans for the festival progressed in Sweden, Dagens Nyheter, one of Stockholm's major daily newspapers, joined Fylkingen as a sponsor. The intellectual position of the Swedes was articulated at this time in a press release issued by Fylkingen which included a statement by leading Swedish scientists.

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"In Sweden over 2,400 Mill. Kronor is being invested this year in scientific research and technological development. The results of these enormous investments - which are continually increasing - will effect a change in the external conditions of living. Simultaneously, our mental picture of the world will change - our conceptions of realities. To maintain control of events, it is necessary that this change of our mental image keep pace with the change of reality itself. Our investments for the purpose of changing our external conditions should therefore be followed by investments which render it possible to give expression to this new conception of realities. One field of investment in this connection is that Art, that part of reality which specially concerns our feelings, needs and evaluations.

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→Indent 5 more spaces

For a number of years a group of musicians and theorists in the Fylkingen Society has been intensely occupied with these problems. The time has now come to give a practical demonstration of the results of this work; to show what electronics, multi-channel sound transmission and modern computer technique can achieve as tools for the artist's endeavor to give expression to our changed view of realities. Fylkingen is therefore arranging an International Festival in Stockholm in the autumn for the purpose of giving a manifestation of the cooperation between artists, scientists and technicians which is essential in this connection. We regard this as a fascinating experiment, and an important contribution to cultural development.

Sven Brohult, Professor, director, The Swedish Academy of Engineering Sciences,

Stig Claesson, Professor of Physical Chemistry, Uppsala University,

Arne Engström, Professor of Medical Physics, The Karolinska Hospital,

Tor Ragnar Gerholm, Asst. Professor of Physics, Stockholm University,

Torsten Gustafsson, Professor of Theoretical Physics, Lund University,

Åke Gustafsson, Professor of Forestry Genetics, The Royal College of Forestry,

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2 - Origin 2P-1

Position in text pages ~~2-20~~ 2-10/2-11

CAPTION: ~~M~~April meeting of artists and engineers and Bob Rauschenberg's loft: Robert Whitman, Lucinda Childs, Deborah Hay, Per Biorn (rear) Alex Hay, Bob Rauschenberg, Manfred Schroeder, Cecil Coker, Mrs. Schroeder, Billy Kluver (rear) Knut Wiggen.

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2 - ORIGIN 2P-2/3

USE PICTURE ~~THIRD FROM RIGHT~~ SECOND and THIRD FROM RIGHT (Two middle pictures) top row.

Position text 2-11/12

CAPTION:
Artists meeting at David Tudor's house in Stony Point, New York:

Sub caption: 2P2: Alex Hay

Sub Caption: 2P3: Bob Whitman, David Tudor, Lucinda Childs, Deborah Hay, Alex Hay

PHOTOS: Frances Breer

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fascinating to speculate what artists might do with the tremendous capacity of technology and engineering which would never have been done otherwise. It appears to me that the benefit to society and to technology of such an expansion of technology would be of great importance.(1)

The Americans wanted to establish a global dialogue on technology which they felt the present structure of the festival precluded. As the group became more unified, Klüver began to see difficulties that would arise if the Swedes did not regard the Americans as a coherent group, so he began to seek financial support to insure the independence of the American group. March 7 he sent a letter to Walter Gutman--stock broker, artist, art collector--to invite him to be the American sponsor. (2) Within a week, Gutman agreed to be the leadoff sponsor and promptly approached Seymour Schweber, President of Schweber Electronics Company. "... I have no ambition to be a hero and would welcome others..." Schweber joined Gutman in becoming not only a sponsor but advisor and consultant as well. Later in April, Klüver attempted to establish formally the position of the Americans by suggesting that they become a third sponsor.

The agreement between the American group and Fylkingen which was signed by each party in the middle of May did not recognize or resolve their differences (3). The arrangements provided that Fylkingen would make available to the Americans $10,000 for their expenses for technical equipment, of which $3,000 had been received and the balance would be paid by the first week in July. The American artists would

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(1) See Document II. This letter also expresses the concern of the American group at an early date that the interaction of art and technology should extend beyond their immediate project. Ultimately, this concern led to the founding of Experiments in Art and Technology.

(2) See Document III

(3) See Document IV

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// In view of the complex nature of this festival some of the important underlying assumptions and commitments will be listed below.

(1) The choice of artists involved was made in connection with the Stockholm Festival. The engineers came mostly from Bell Laboratories because of our connections.

(2) The nature of the work of the artists is such that for them to work with engineering and technology as material appears as a logical and natural extension of the attitudes expressed in their previous work.

(3) All works or pieces are completely determined by the artists and are their responsibility. The technical equipment will appear as elements used in the work. In most cases, the spectator may be quite unaware that any technical equipment is being used or what effects have been achieved.

(4) It is not the purpose of the Festival to demonstrate that through the use of technical equipment more effectful images can be obtained than without the use of technical equipment. The technology used is a result of the interaction between the engineer and the artist.

2 - Origin

2D-4

Position near text page 2-18

CAPTION:

Oyvind Fahlstrom's description of "Kisses Sweeter than Wine"

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W. P. MARSHALL, CHAIRMAN OF THE BOARD
R. W. McFALL, PRESIDENT

SYMBOLS
DL = Day Letter
NL = Night Letter
LT = International Letter Telegram

The filing time shown in the date line on domestic telegrams is LOCAL TIME at point of origin. Time of receipt is LOCAL TIME at point of destination

PA044 SPD088 SYA957

SY CDV853 WUF1221 SWN0547 41 PD INTL= CD STOCKHOLM VIA
RCA 25 0130=

LT KLUVER=
APPLETREE ROW BERKELEYHEIGHTS (NJER

KISSES SWEETER THAN WINE MIND TECHNOLOGY MIND EXTENDING ROBOT THINKING ESTATIC THINKING CRISIS REACTIONS CHEMICAL REACTIONS ANTIGRAVITY ORGASMRAYS KETCHUPLACES BREATHING HATEMAIL HUMAN COMPUTERS CHINESE SPARROWS ASTROGIRLS INDONESIAN AND ESSO TIGERS STOP WHY NOT ASK WARHOL=

OYVIND

322-5682 Wife

WU1201 (R2-65) THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

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2 -Origin

Place in text pages 2-20 thru 2-22 separately or together (with 2P5 and 2P6)

If together on main caption:

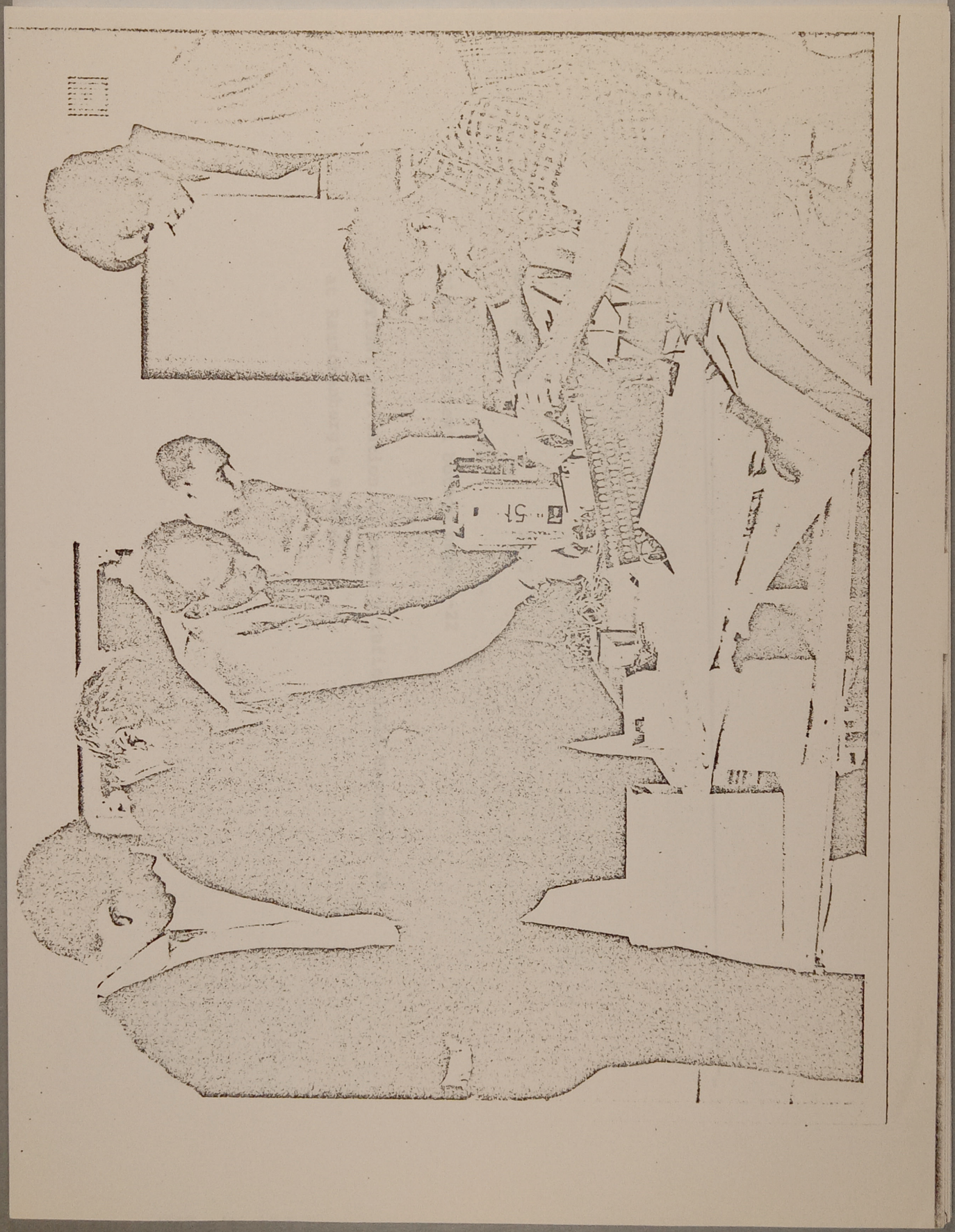
Equipment ~~x~~ rehearsals at the Berkeley School, Berkeley Heights, New Jersey

Sub caption

Cecil Coker, Walter Gutman, Billy Klüver, Dick Wolff, ~~M~~ Jim McGee, Virginia Dwan. Jim McGee is working on Actan switches.

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2 - ORIGIN 2D-5

Place near text bottom page 2-22

CAPTION: Invitation to press briefing held September 29 at Rauschenberg's studio.

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The Museum of Modern Art Archives, NY

NINE EVENINGS: THEATER AND ENGINEERING

press briefing

4:30 p.m., Thursday, September 29th

at Bob Rauschenberg's studio

381 Lafayette Street

New York City

R.S.V.P.
BU 8-6286

Billy Kluver

Deborah Hay

Steve Paxton

Robert Whitman

Yvonne Rainer

Lucinda Childs

David Tudor

Fred Waldhauer

John Cage

Bob Rauschenberg

Robert Huesch

Bob Breer

Bob Rieronski

Erik Wortz

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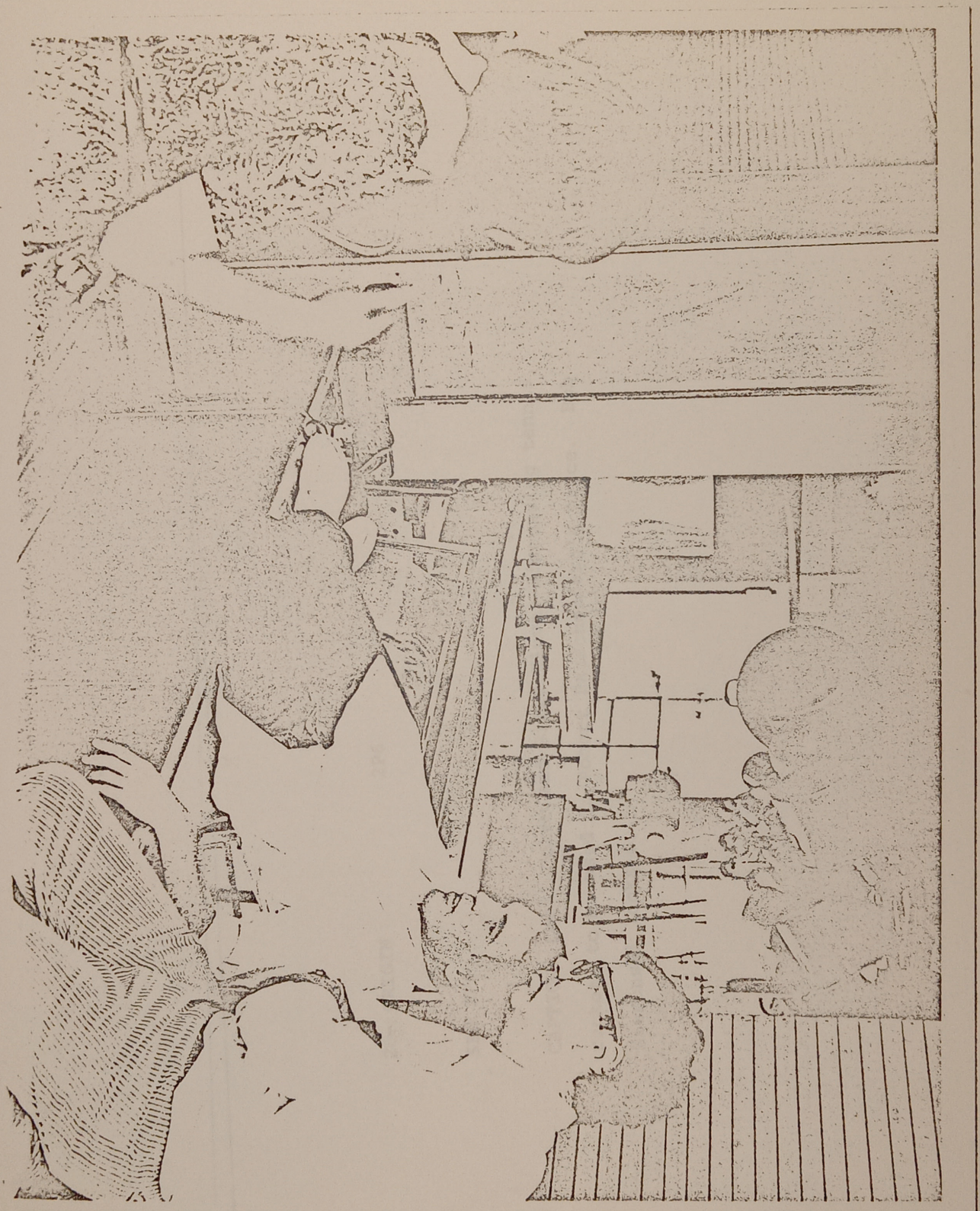
2 - Origin 2P5

SEE 2P4

CAPTION: Alice Schwebke, production coordinator, talking with artists Alex Hay and Robert Breer.

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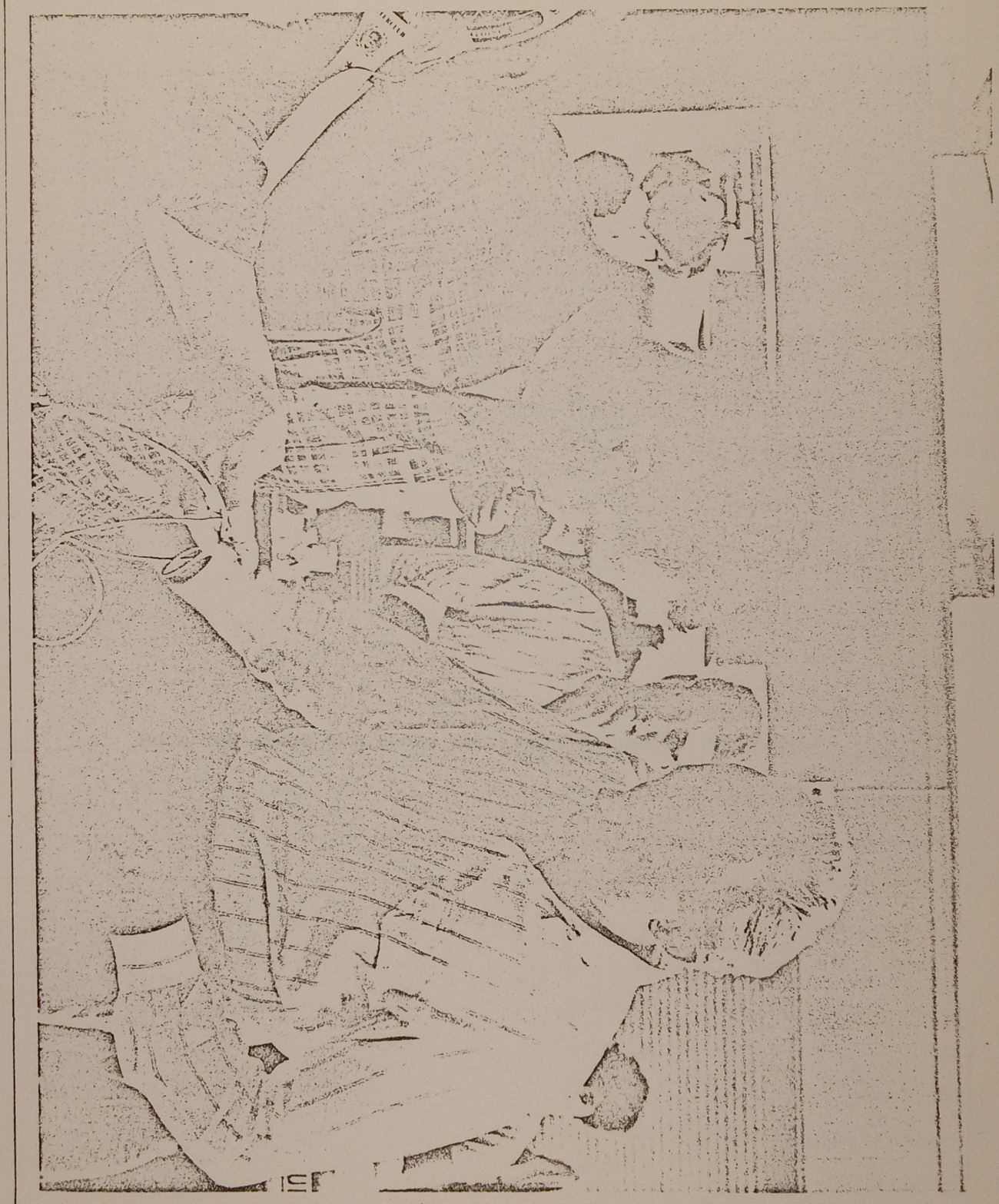
2 - ORIGIN 2P6

SEE 2P4

CAPTION: Cecil Coker and Billy Kluver discussing tennis rackets to be used in Robert Rauschenberg's piece. Bob Kieronski looks on.

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18P-6

Herb Schneider and Robby Robinson discussing decoders.

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2- ORIGIN 2P-7

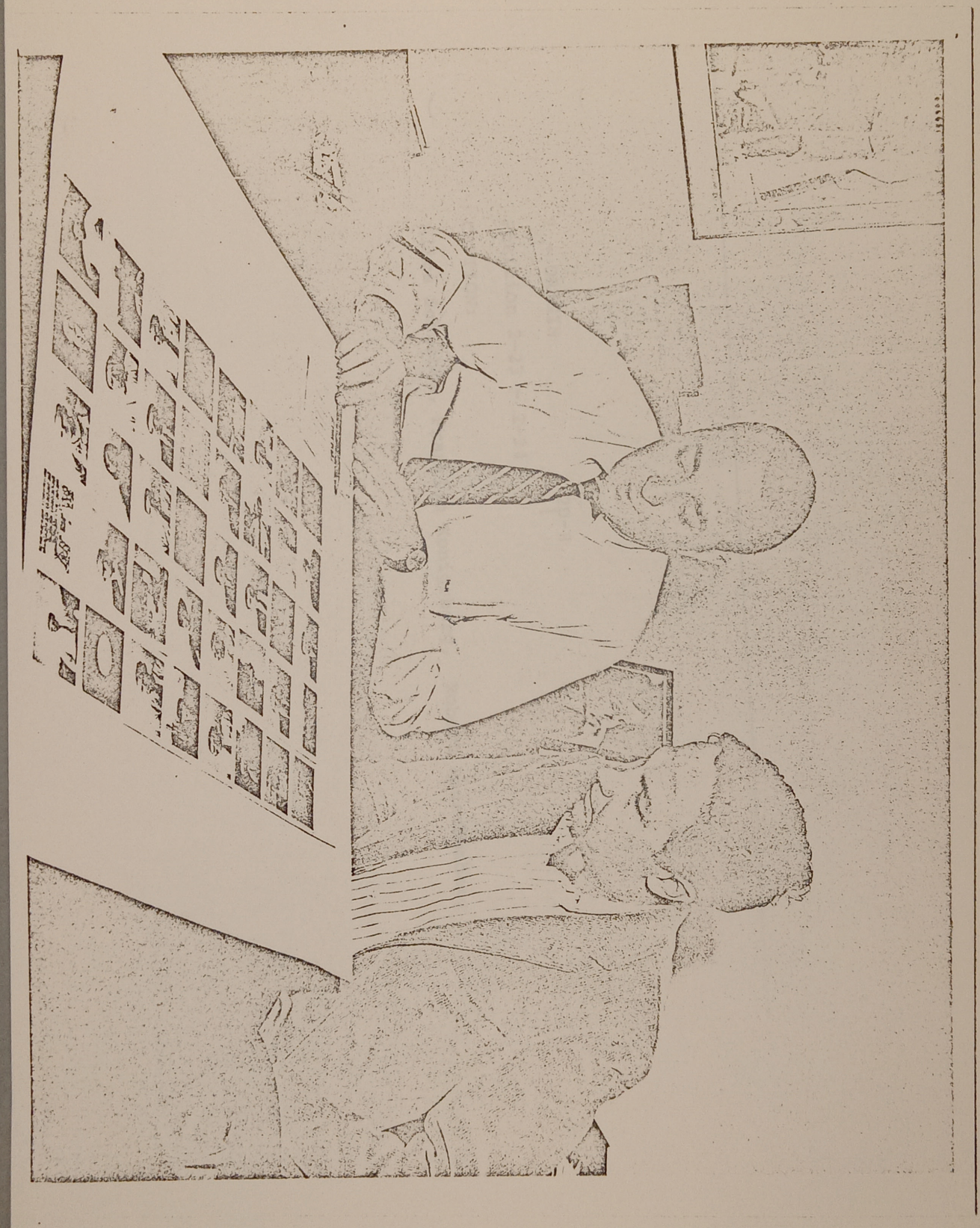
Place near text page 2-23

(Alternate position text 2-18)

CAPTION: Robert ~~XXXXXXX~~ Rauschenberg and Howard Marks discussing the layout of Rauschenberg's "9 ~~XXXXX~~ evenings" poster.

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2 - ORIGIN 2D-8

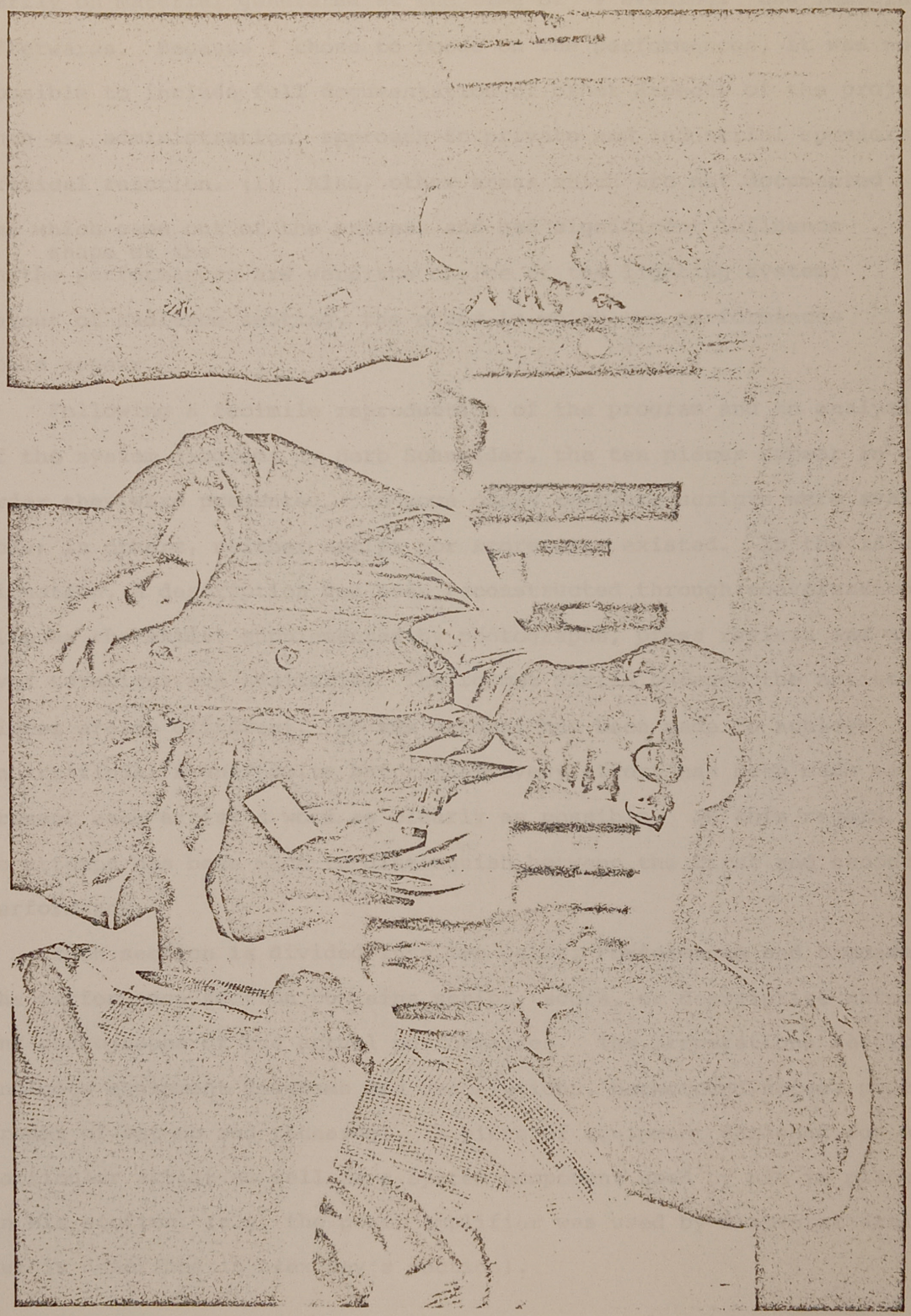
Position 2-23 - 2-24

CAPTION:

Alice Schwebke, Franklin Konigsberg, Robert Rauschenberg

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marily on material generated at the time of "9 evenings" and immediately afterwards. Because I chose to focus on the performances, it was not possible to include full documentation of other aspects of the project; such as, administration, approach to private and industrial sponsorship, critical reaction. (1) Also, other areas which are not documented but which came out of the process and had significant influence on the performances shape of the were: the choice of the lighting system, layout of audience seating, the order in which the performances would appear.

Following a facimile reproduction of the program and an analysis of the system diagrams by Herb Schneider, the ten pieces appear in the order they were presented. In some cases complete scripts were available; in others, neither script nor score ever existed. In the latter situation, a description has been reconstructed through conversations with the artist supplemented by photographs, press reviews and whatever notations are available. The format varies because the artists' pieces are so different. No attempt has been made to achieve an artificial uniformity but rather every effort has been made to present each artist's work as clearly as possible. In this regard no attempt has been made to distinguish between the first and second performance.

Each section is divided into two parts; Performance and Preparations The performance section contains script, score, or descriptive material, and photographs of the actual performances. The preparations section includes equipment diagrams and descriptions, background notes, photographs of set-up and rehearsal. A piece of equipment designed for a particular artist as well as a system component used by him is placed in his section. (e.g. the power amplifier was used by several artists but is described in Alex Hay's section).

(1) See Document XI

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Fairly complete ~~a~~ records on all ~~xpx~~ aspects of the project exist through July 30, 1966, but as the preparations for the Armory, and especially in the Armory, became more intense, the documentation

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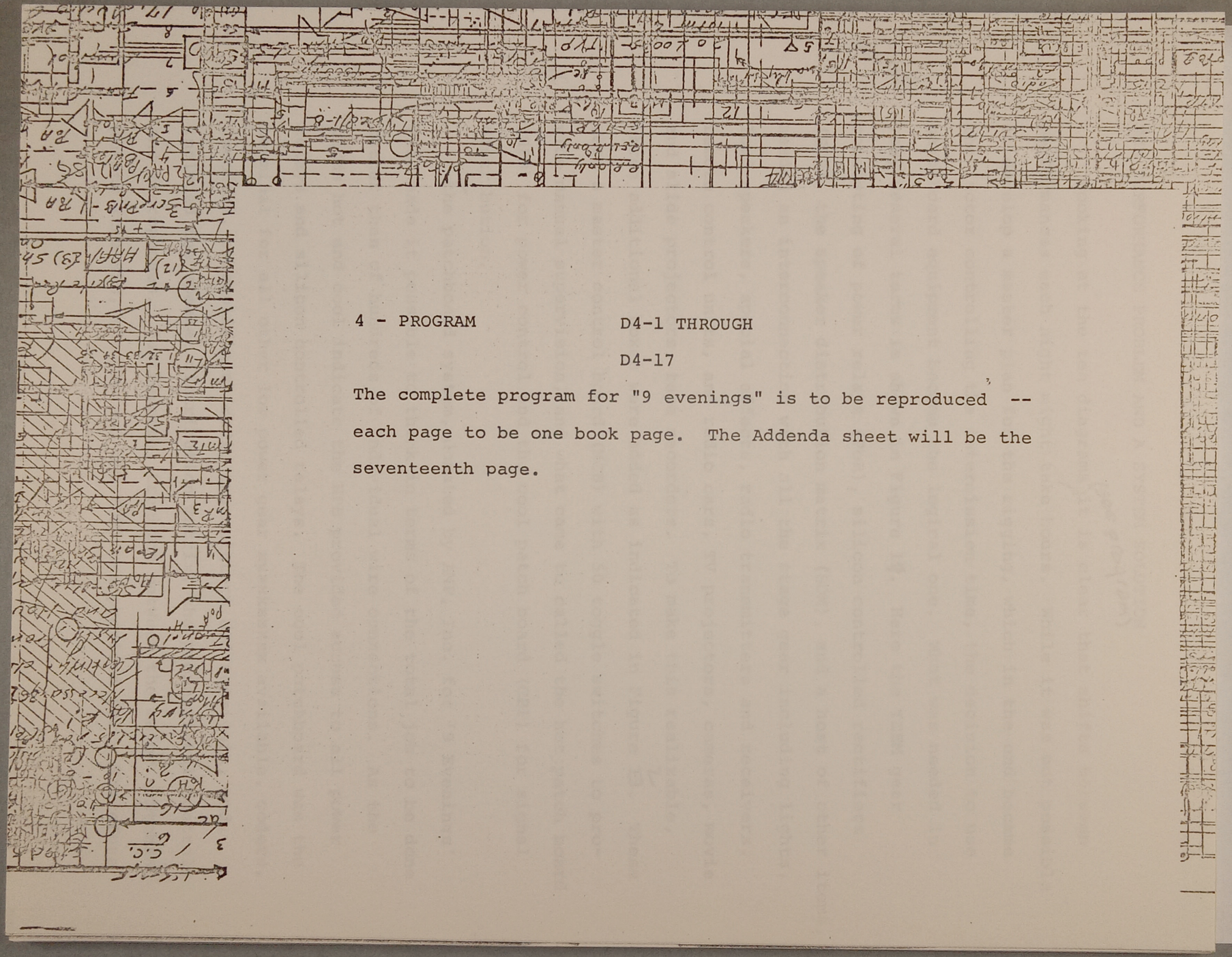
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PROGRAM: "9 evenings: theatre & engineering"

The program was conceived and designed by K.G. Pontus Hulten. It was put together the week before the opening night based on material Hulten gathered from the artists.

By October 6, Herb Schneider prepared the last of the system diagrams, one for each artist's piece, which were used in the program. For the cover of the program, Hulten superimposed all the diagrams.

Following the program is a brief description by Herb Schneider of the system diagrams and a list of abbreviations used in the diagrams.



4 - PROGRAM D4-1 THROUGH

D4-17

The complete program for "9 evenings" is to be reproduced -- each page to be one book page. The Addenda sheet will be the seventeenth page.

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THE PERFORMANCE PROBLEM AND A SYSTEM SOLUTION

Looking at the ten diagrams (see program) it is clear that shifts between performances each night might take hours. While it was not possible to develop a master plan for the rigging, which in the end became the factor controlling the intermission time, the decision to use patchboard equipment became the logical one. What was needed in very general terms is shown in Figure 1. Here the TEEM gear consisting of power relays (PoR), silicon controlled rectifiers (SCR), the speaker distribution matrix (SDM), and a host of other items, needed an interconnection with all the stage gear including lights, loud speakers, special effects, radio transmitters and receivers, remote control units, and radio cars, TV projectors, cameras, movie and slide projectors, tape recorders. To make this realizable, three additional boxes were added as indicated in Figure 2. These were a master control board (MCB) with 50 toggle switches to provide manual supervision, and what came to called the hot patch board (HPB) for power control and the cool patch board (CBP) for signal distribution.

The patchboard system, donated by AMP, Inc. for '9 Evenings' use, made it possible to think in terms of the total job to be done rather than of hundreds of individual wire connections. As the terms hot and cool indicate the HPB provided access to all power relays and silicon controlled relays. The cool patchboard was the terminal for all other low power gear available, coders, decoders, preamplifiers, radio transmitters and receivers, and included the speaker distribution matrix, the proportional controls and microphones. Furthermore, trunking between the major switching points (the HPB, the CPB and the MCP) was provided for. Therefore

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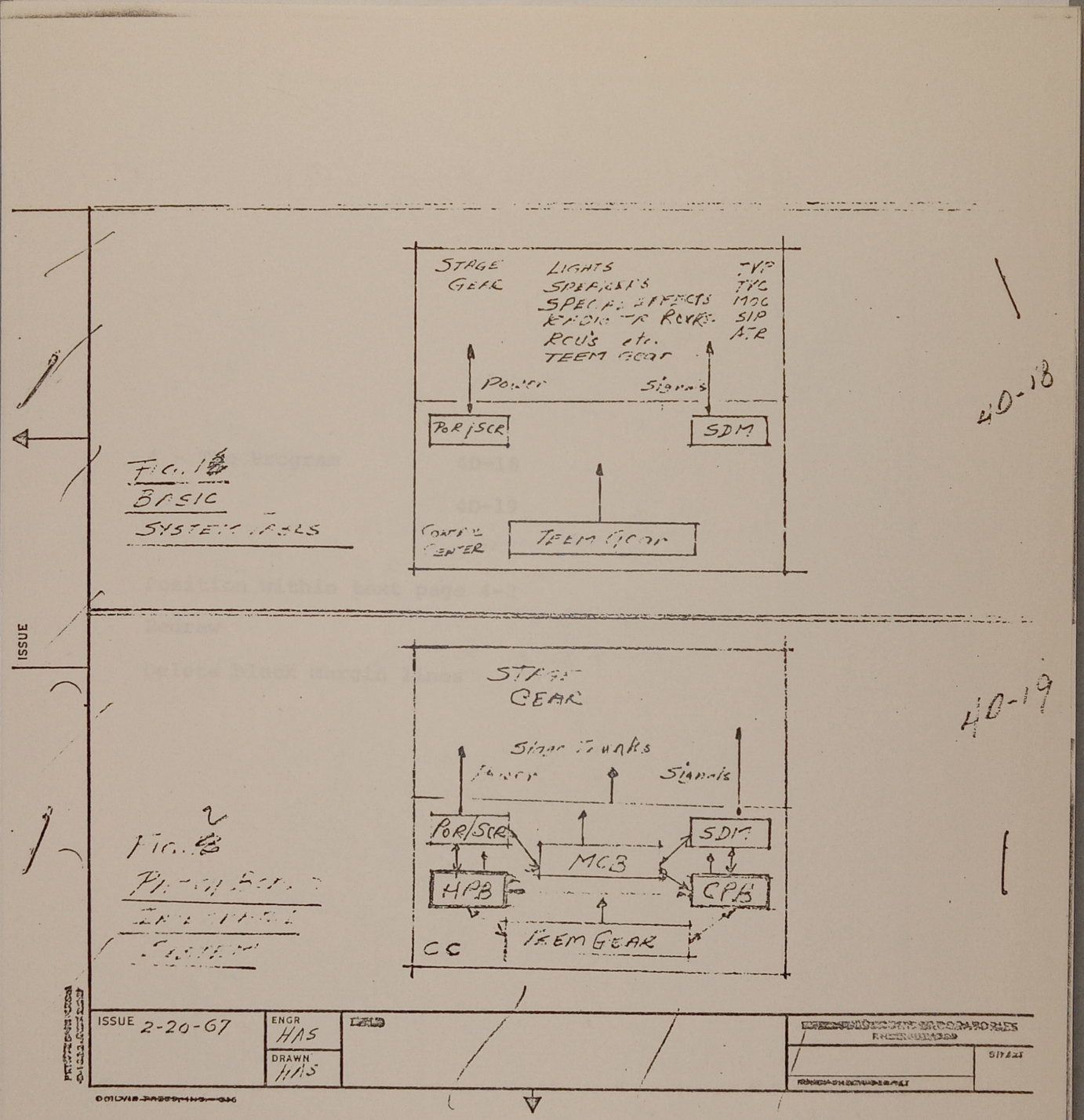
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	Tomkins	IV. C. 50

a special wiring pattern on the HPB and CPB removable patchboards could be associated with each artist's piece. A total of 20 patchboards, two for each artist, were laid out and wired.

February, 1967

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4 - The Program 4D-18

4D-19

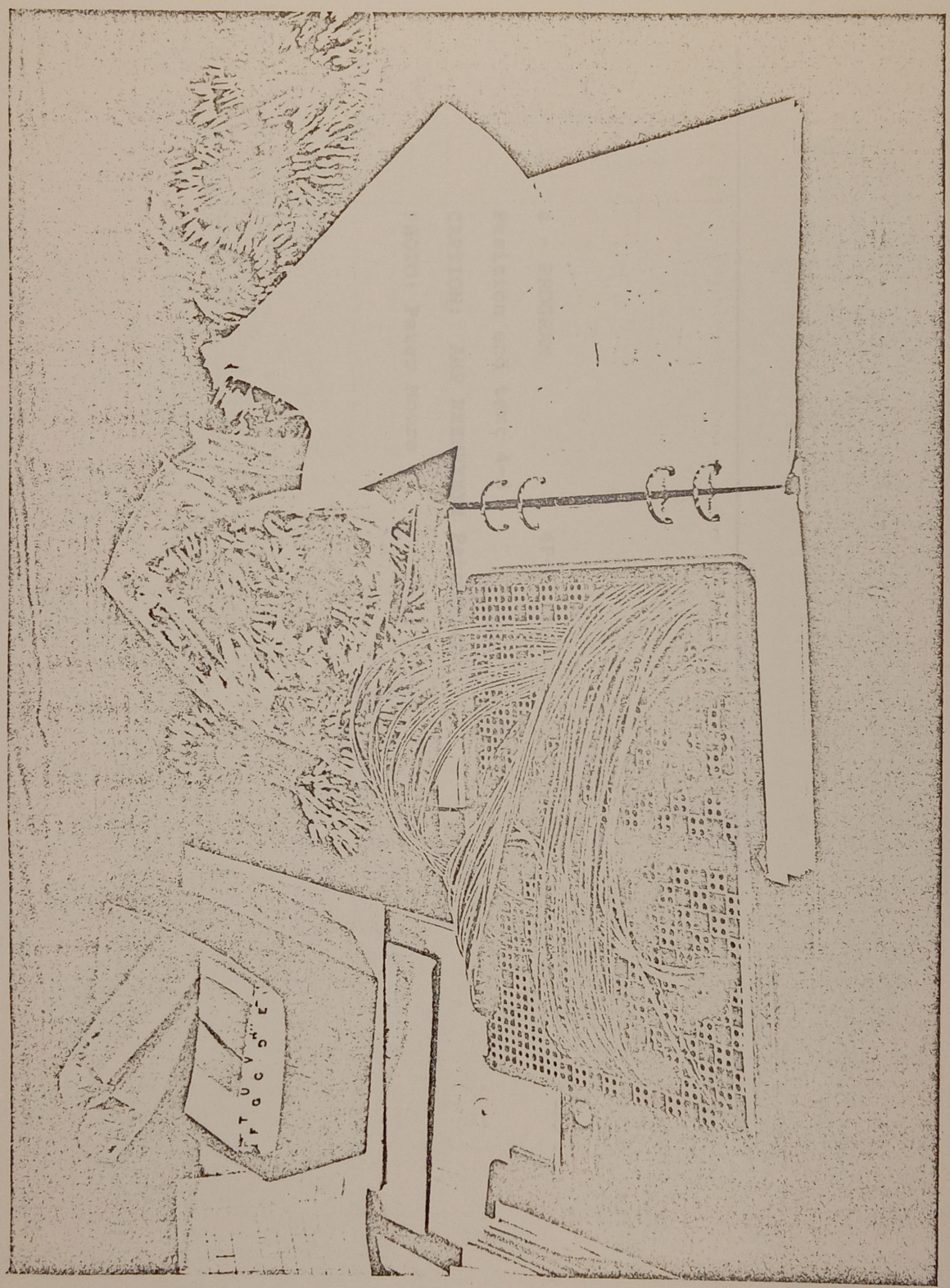
Position within text page 4-2

Redraw

Delete black margin lines

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4 - PROGRAM 4P-1

Position end text 4-3

CAPTION: AMP ~~XXXXXXXX~~ Patchboard

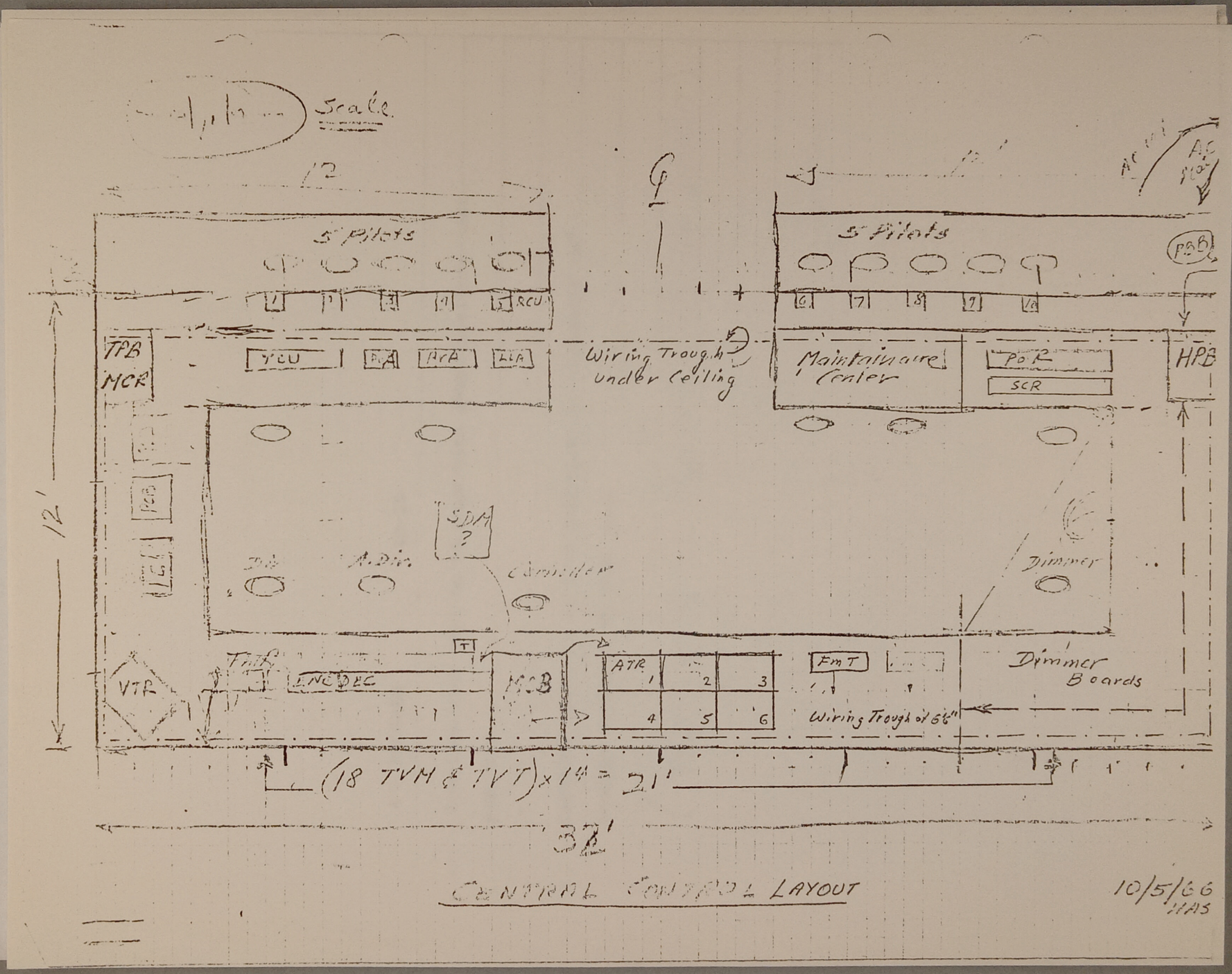
PHOTO: Peter Moore

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4 - PROGRAM 4D-20

Position with 4P-1 or on page with abbreviations--text page 4-4

CAPTION: Drawing by Herb Schneider of placement and storage location of TEEM gear.

(FRONT ONLY - CENTRAL CONTROL LAYOUT)

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-4-4

List of Abbreviations

ATR Audio Tape Recorder
BVD Bob's Vochrome Device
BTP Battery Testpoint
CBR Citizens Band Receiver
CBT Citizens Band Transmitter
CoS Coaxial Switch
CRO Cathode Ray Oscilloscope
CRT Cart
DeC Decoder
DiB Dimmer Board
DiT Dial Telephone, special
Enc Encoder
FLL Floodlights
FmR RM Receivers
FmT FM Transmitters
HPB Hot Patch Board
CPB Cool Patch Board
LHO House Lights
LLA Low Level Amplifiers
LLE Low Level Equalizers
LPR Low Power Relay station
LRd Red Light
LSC Ceiling Loud Speaker
LSG General Loud Speaker
LST Stage Lights
LSS Special Loud Speakers
LSP Spot Lights
LUV Ultraviolet Light
MCB Master Control Board
MCR Manual Card Reader
Mic Microphone
MiC Contact Microphone
MiH Hand Microphone
MMM Motion Music Machine
MoP Movie Projector
Mot Motor
Nc Normally Closed
No Normally Open
OTL Outside Telephone Line
PBB Pushbutton Box
PCB Proportional Control Board
PCR Proportional Control Receiver
PhC Photocell
PiS Picture Screen
PLF Platform
PoA Power Amplifier
PoR Power Relay
PPB Platform Patchboard
PrA Preamplifier
PrD Program Drum
RCU Remote Control Unit
Rcv Earphones
SEG Special Effects Generator (Infrared TV
SDM Speaker Distribution Matrix
SLP Slide Projector
SoG Sound Gun
Sol Solenoid
SPL Spotlight
SWF Switcher-Fader
TCU Tone Control Unit
Tut Turntable
TVC TV Camera
TVM TV Monitor
TVR TV Receiver
TVT TV Tuner
VCO Voltage Controlled Oscillator
VTR Video Tape Recorder

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PHOTO 16
Docums 7
+
(2 drawings in last two pages)

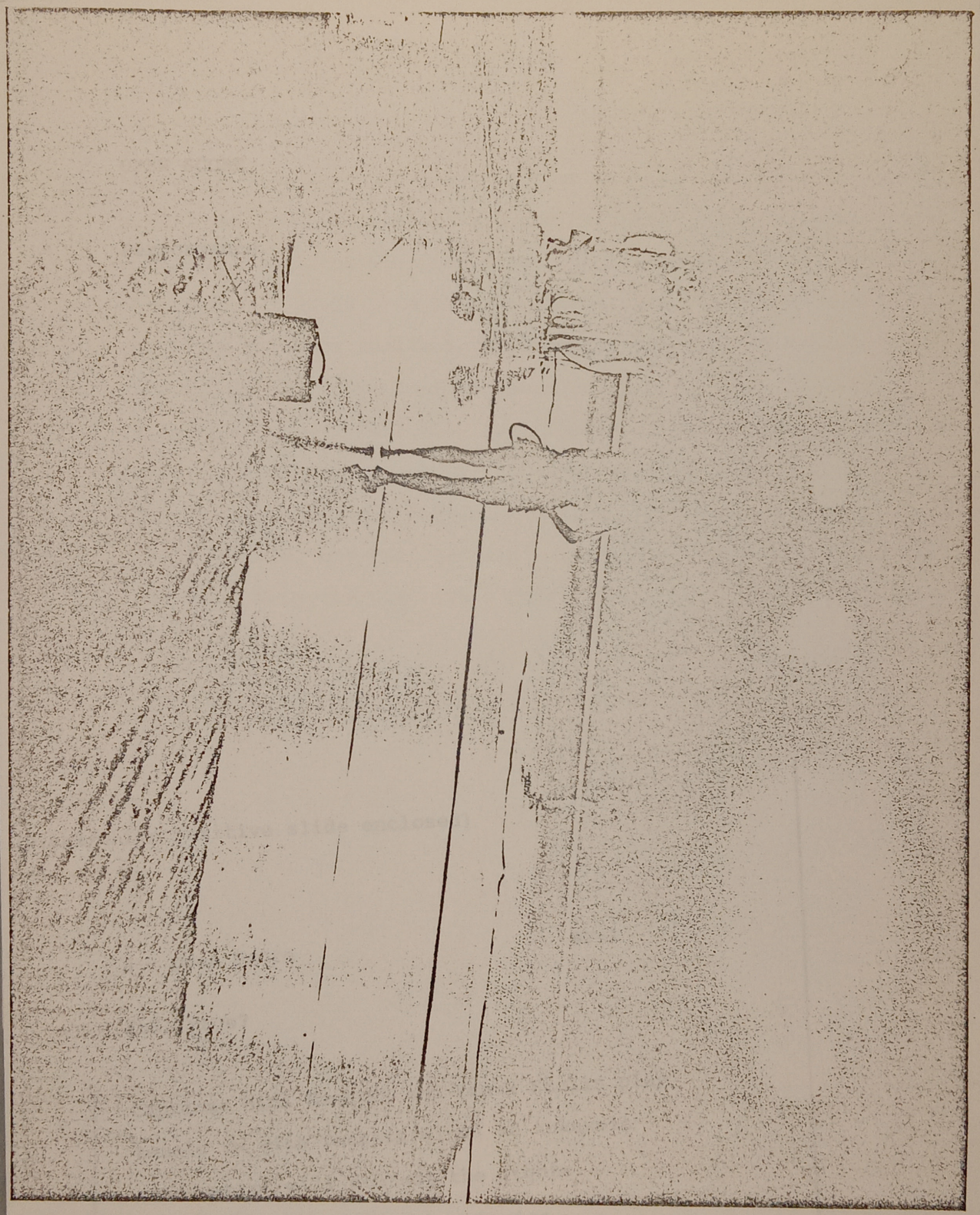
8. OPEN SCORE

8P1 BTL (b/w pos. slide)
2 MOORE
3 MIEDOLL (color slide)
4a. MOORE b MOORE c- SCHILLING
5 MIEDOLL (color slide)
6 BTL (b/w pos slide)
7 Miedoll (color slide)
8 Schilling
9 a. MOORE b. Landy
10 ?
11 MOORE
12 MOORE
13 BTL (b/w pos. slide)

8D1- RR Dotes
2 Letter
3 Dubos -
4 Kaminsky
5 Pur Relay
6 TCU
7 TCU
8

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OPEN SCORE

Performance

(Black/white positive slide enclosed)

8P-1

8 - Open Score

Full page?

Caption: Mimi Kanarek and Frank Stella play tennis ~~w~~ with rackets wired to transmit sound which will control the lights.

Photo: Courtesy Bell Laboratories

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	Tomkins	IV. C. 50

ties, the cast has been generously collected. The sources are varied and rich in intentions. The result of their voluntary involvement reaps the Downtown Community School $1000 for a scholarship fund. I would like to draw attention to the fact that all the names were not available at the time the program went to press. They should all be personally recorded, but the next best thing to do is to report that they well represent the world (our society) and are locally from such varied organizations as high school science classes, drama organizations, senior citizens groups, individual artists, reformed addicts' clubs and a New York fencing club. I am touched by the positive support, work, art, love and people. RR

VERY SMALL PRINT — FOOTNOTE & GROUP OF 100 "PEOPLE"

REPRODUCE DOCUMENT 8-01 HERE - SAME COLUMN WIDTH ETC -

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	Tomkins	IV. C. 50

1966

16/14/66

8 - Open Score 8P-2

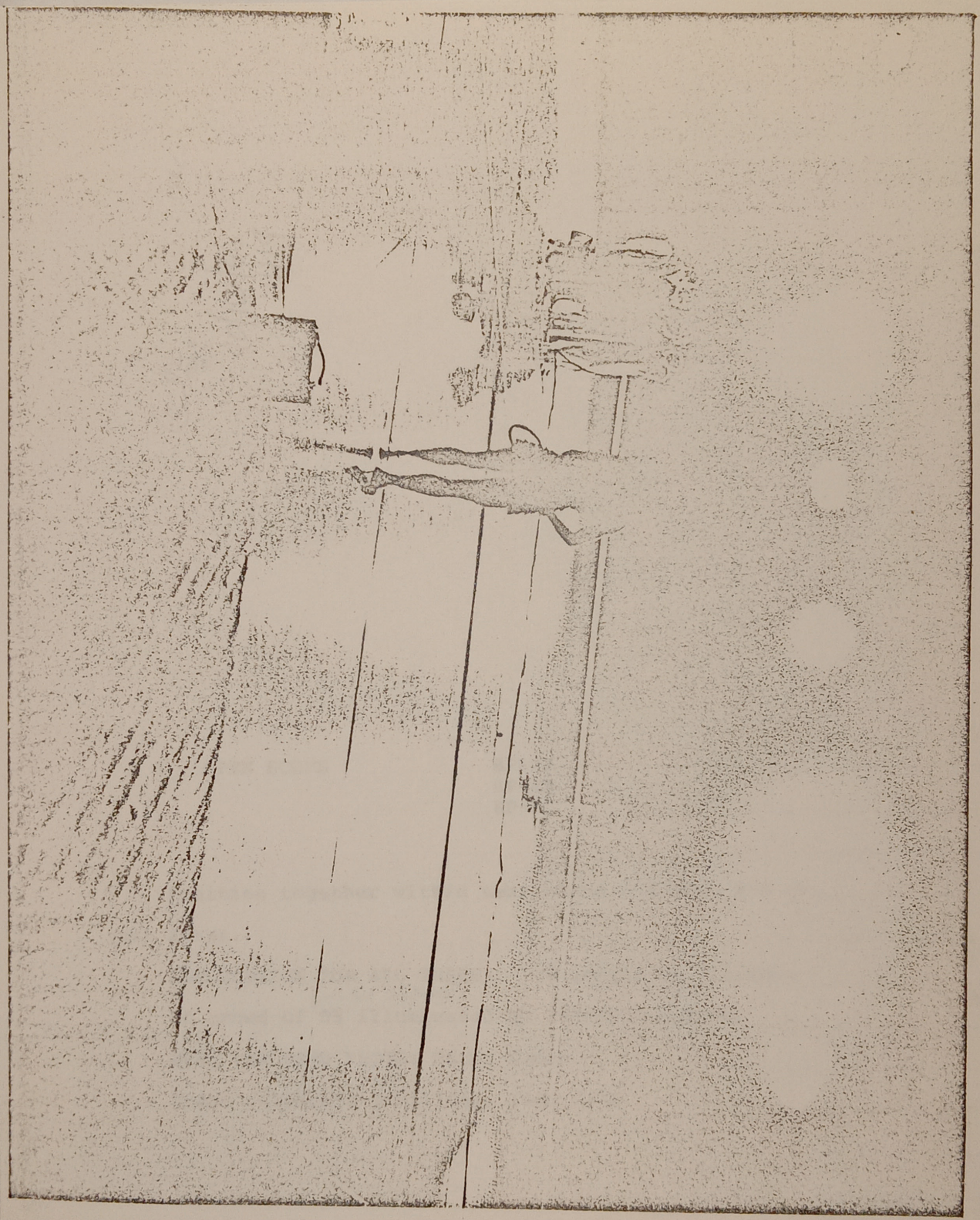
Position after 8D-1

Caption: A mat on which tennis court lines were painted was laid on the floor. Because nothing could be nailed to the Armory floor, "spectators" stood on the platform to add ~~the~~ weight to hold the net up. The receiver in the foreground picked up ~~the sound~~ the sound of the ball's impact on the racket.

Photo: Peter Moore

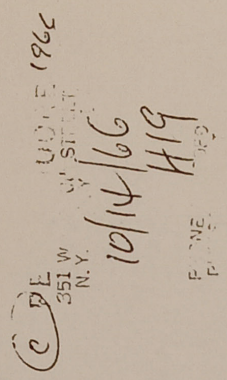
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	Tomkins	IV. C. 50



X 8 - OPEN SCORE

8P-4A
8P-4B
8P-4C

Position together within text pages 8-3 thru 8-5 or just after.

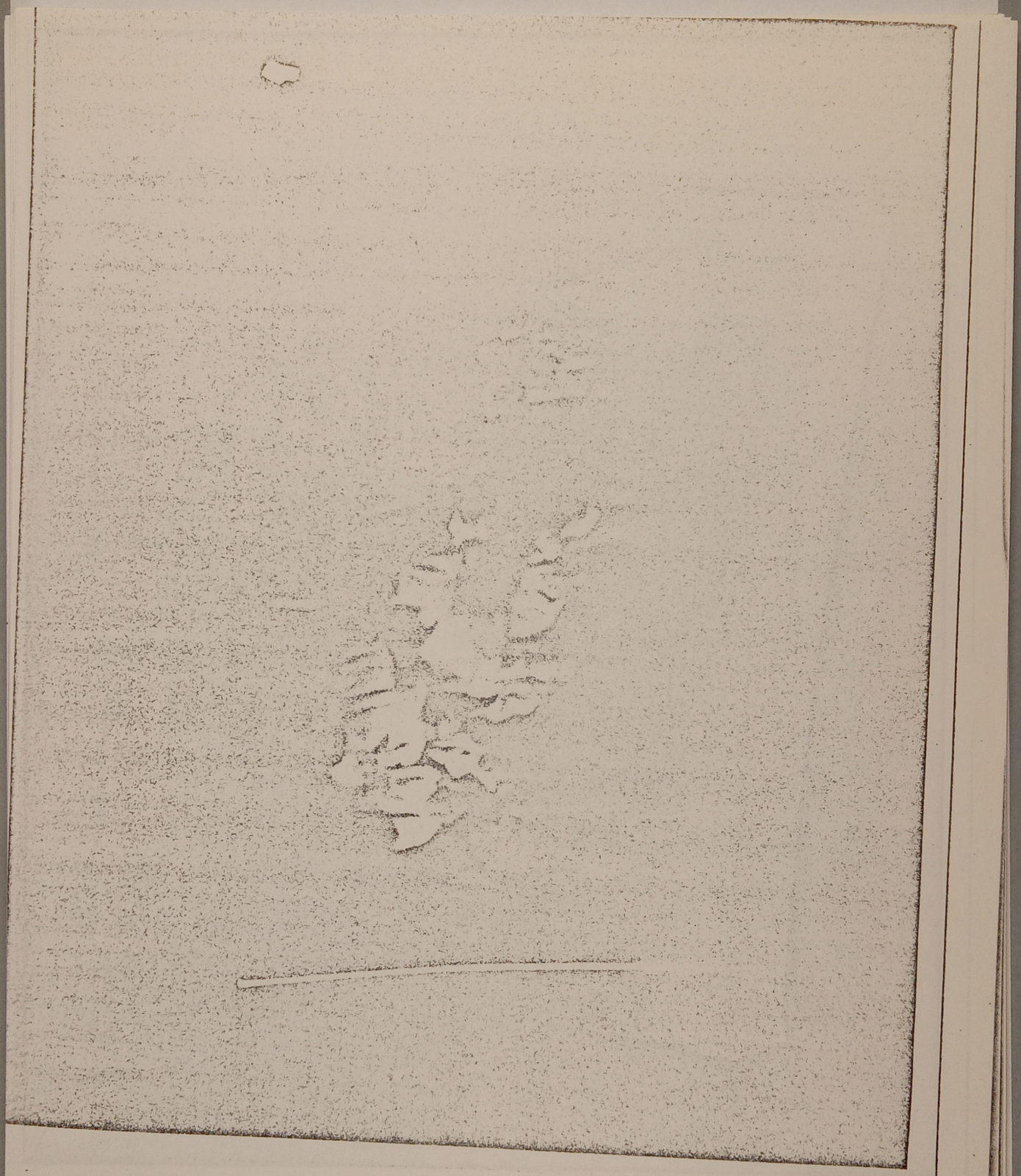
ONE CAPTION FOR ALL THREE: TV images of sections of crowd of ~~55~~ 300-500 persons illuminated by infrared camera

8P4A and 8P4B PHOTO: Peter Moore

8P4C: Alphonse Schilling, 16mm film

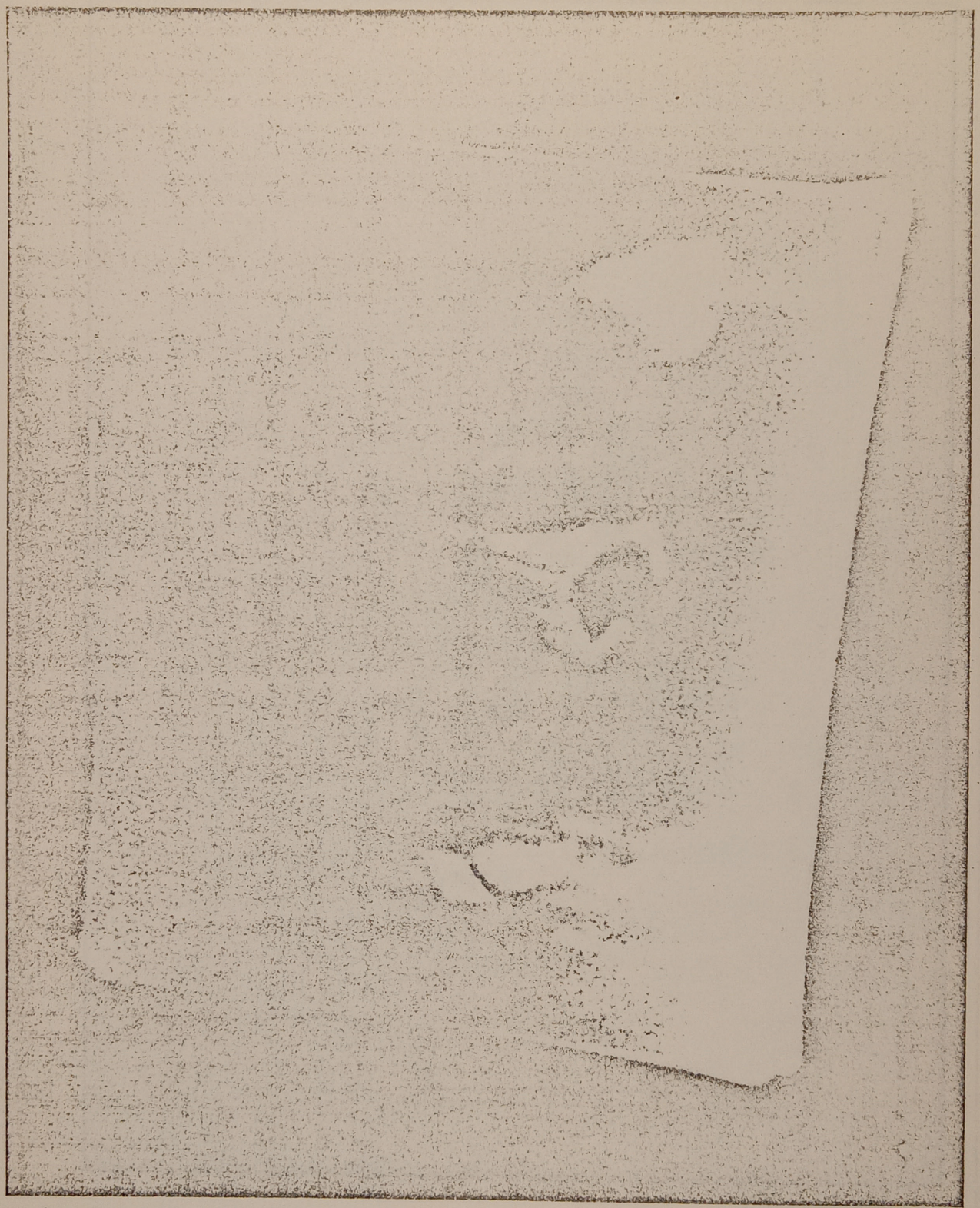
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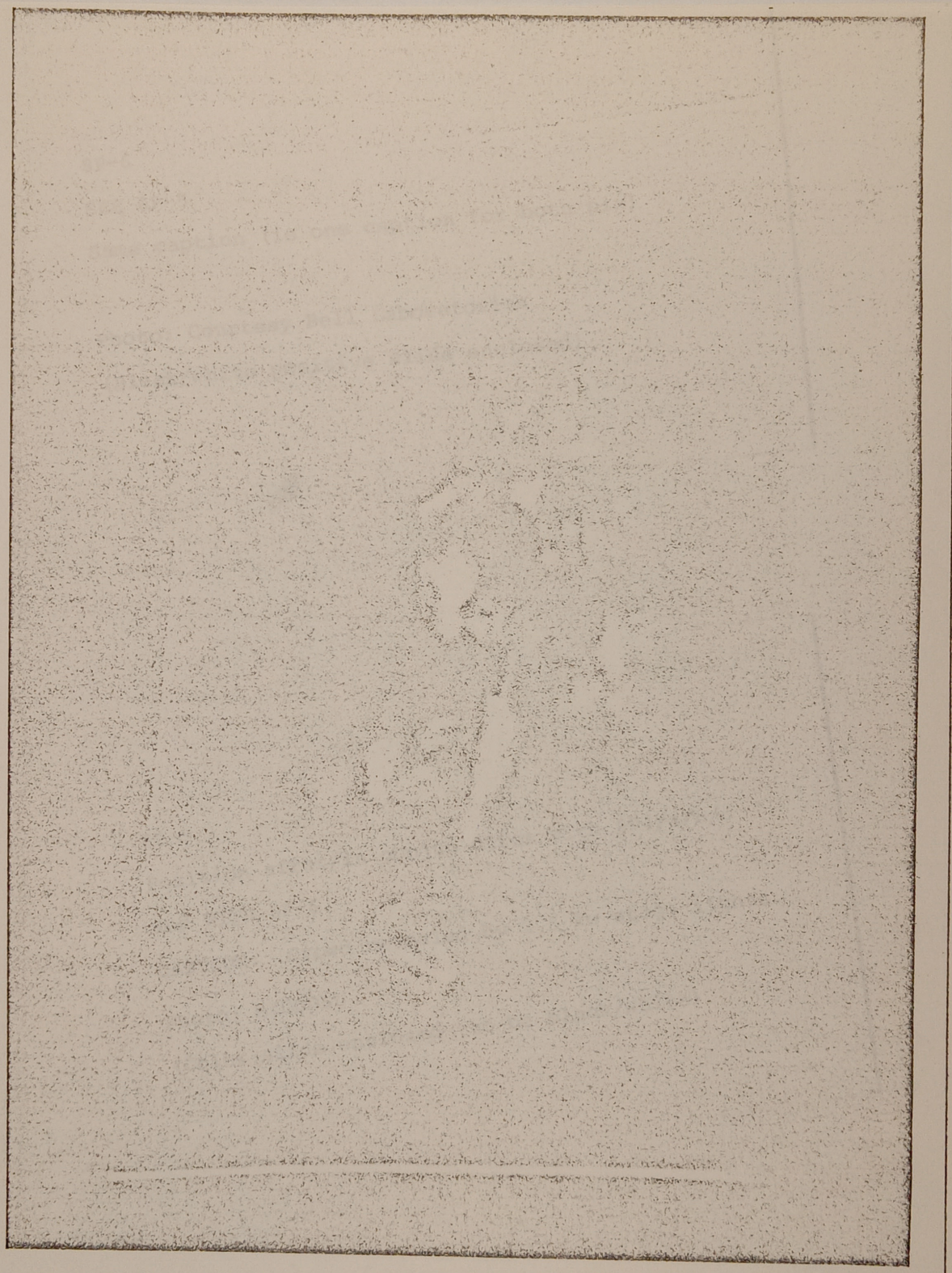
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8P-6

SEE 8P-5

Same caption (ie one caption for both pix)

Photo: Courtesy Bell Laboratories

(Black/white positive slide enclosed)

8P-5

Position after/in conjun ction with 8P4/a/b/c

and WITH 8P-6

CAPTION: Crowd revealed by 2.5 kw stage lights.

Photo: MIGDOLL

(Color slide enclosed--to be black/white)

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	Tomkins	IV. C. 50

8P-8

8 - OPEN SCOPE 8P-8

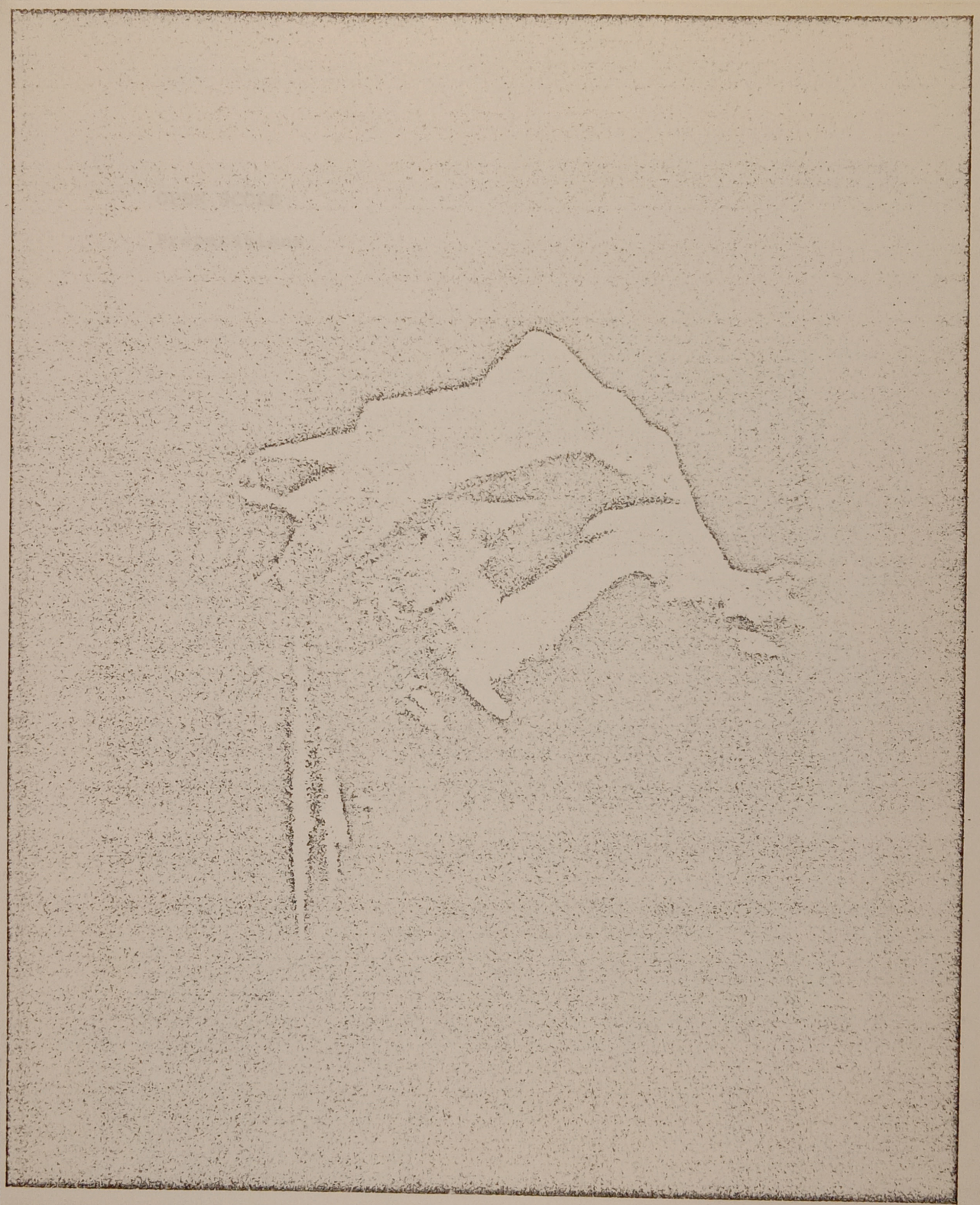
Position with 8P-7

CAPTION: Rauschenberg carrying Simone Forti as she sings spanish x song.

PHOTO: Alphonse Schilling, 16 mm film

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OPEN SCORE

Preparations

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1966 FESTIVAL FOR THEATER AND ENGINEERING

Coordinator
Billy Klüver
Murray Hill, N. J. 07971

Secretary
Simone Whitman
186 Grand Street
New York, N. Y. 10013

8-8

Downtown Community School:

Nine Evenings: Theatre and Engineering is an experimental project. 10 artists as follows: theatre pieces by Oyvind Fahlstrom, Steve Paxton, Robert Whitman and myself, concert pieces by John Cage and David Tudor, dances by Lucinda Childs, Deborah Hay, Yvonne Rainer, and Alex Hay.

The nine evenings will take place from October 13 to 23, at the 69th Regiment Armory, 25th Street and Lexington. Two or three works will be performed each evening, and each work will be scheduled twice only. These concerts are the results of collaboration between artists and scientists who have been working out of mutual interest since last January.

I have been a contributor to your scholarship fund before. Now I am coming to you, parents and teachers, with another kind of offer. I need for my theatre piece 500 adults. These volunteers will be responsible for attending one rehearsal and participating as cast in two performances. You will not be asked to do anything embarassing or anything that requires special skills. The learning of10 or fewer cues for mass response and your ability to be dependable, by showing up at the scheduled time and cooperating will be the extent of your tax.

If you will do this, I will give one thousand dollars to your scholarship fund.

You will perform in the darkness in the second part of a work that in total will last from 45 minutes to one hour. Your part will be from 25 to 30 minutes. A sample of the kind of activity you will be asked to do is: touch someone who is not touching you or women, brush their hair. You will not be able to see your neighbor. The activity will be picked up by two infrared television cameras and the images will be mixed by me (almost like painting) and projected on a large screen.

Artists
John Cage, Lucinda Childs, Öyvind Fahlström, Alex Hay, Deborah Hay, Claes Oldenburg, Steve Paxton, Robert Rauschenberg, David Tudor and Robert Whitman

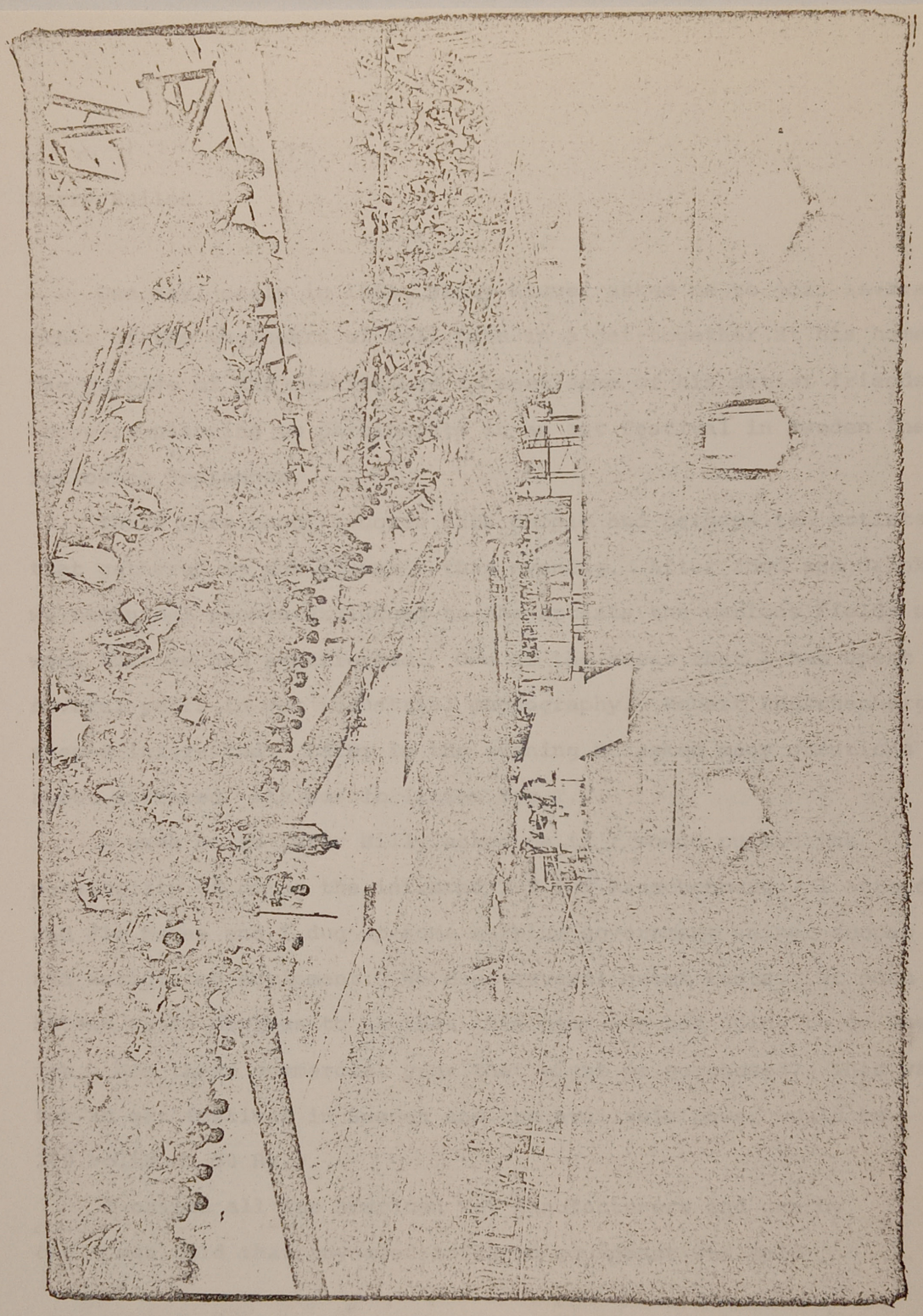
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8-4

Infrared TV by

Larry Heilos

One day, early in 1966, Billy Kluver asked me to join several other of the engineers of Bell Labs in a get-together at his home. The purpose of the meeting was to meet some of his artist friends who were planning to participate in an art festival in Sweden the following September.

There were about a dozen Labs people and perhaps ten artists that gathered at the Kluver's that evening. After food and drinks we technical people explained to the artists the various fields of work that we had experienced. One of the areas that I had spent several years in was industrial photography. Robert Rauschenberg seemed interested. Later in the evening he asked many questions about infrared, its possibilities for T.V.

A week or so later Billy asked me if I would pursue the possibility of doing the infrared T-V for Rauschenberg. I agreed, and Jim McGee and I dug up some surplus government sniper scopes and associated equipment. We made several quick tests. It soon became quite obvious to us that this gear was not going to do the job. Was there commercial gear that might be purchased? This was for an art festival in Sweden and the available power would be 200 volts at 50 Hz.

I called all the American T-V manufacturers and one by one I was told that any good infrared equipment was held

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8-10

classified by the U.S. Government. This left me with a few foreign manufacturers. A call to Norelco still let me with little or no hope. Then through Norelco I heard of a man in Jersey who was exploring the Infrared field. His name was Bill Hartig of Beva Electronics.

After several calls to Hartig he agreed to help. I met Bill one evening and he showed me several photos taken off a monitor displaying infrared illuminated subjects. The quality was excellent. Hartig further disclosed that the infrared videcon was of Japanese make and was available. It could be installed in a Norelco camera and used either in Sweden or in the U.S.

Elated, I called on Bob Rauschenberg and told him the good news. He was excited. A demonstration date was set up to take place in Bob's loft on Broadway. It was now later in April 1966.

Hartig and Son showed up on the night of the demonstration with a truck loaded with equipment. The I.R. camera was set up, a large spotlight with an infrared filter provided the black light. Bideo tape machine, microphones etc. were arranged. We took turns being photographed in the dark and watching ourselves on the monitor. The demonstration was a success. Everyone was excited. Steve Paxton handed me a cold bottle of beer. I looked at the label--it was Japanese.

Jim McGee and I left the loft about eleven o'clock that night feeling quite satisfied. Bob had placed an order with Hartig and I felt it was up to Bill to work out any further details for Rauschenberg. At this point thermo-phosphor was first seen by Heilos and McGee.

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8P-10

8 - Open Score 8P-10

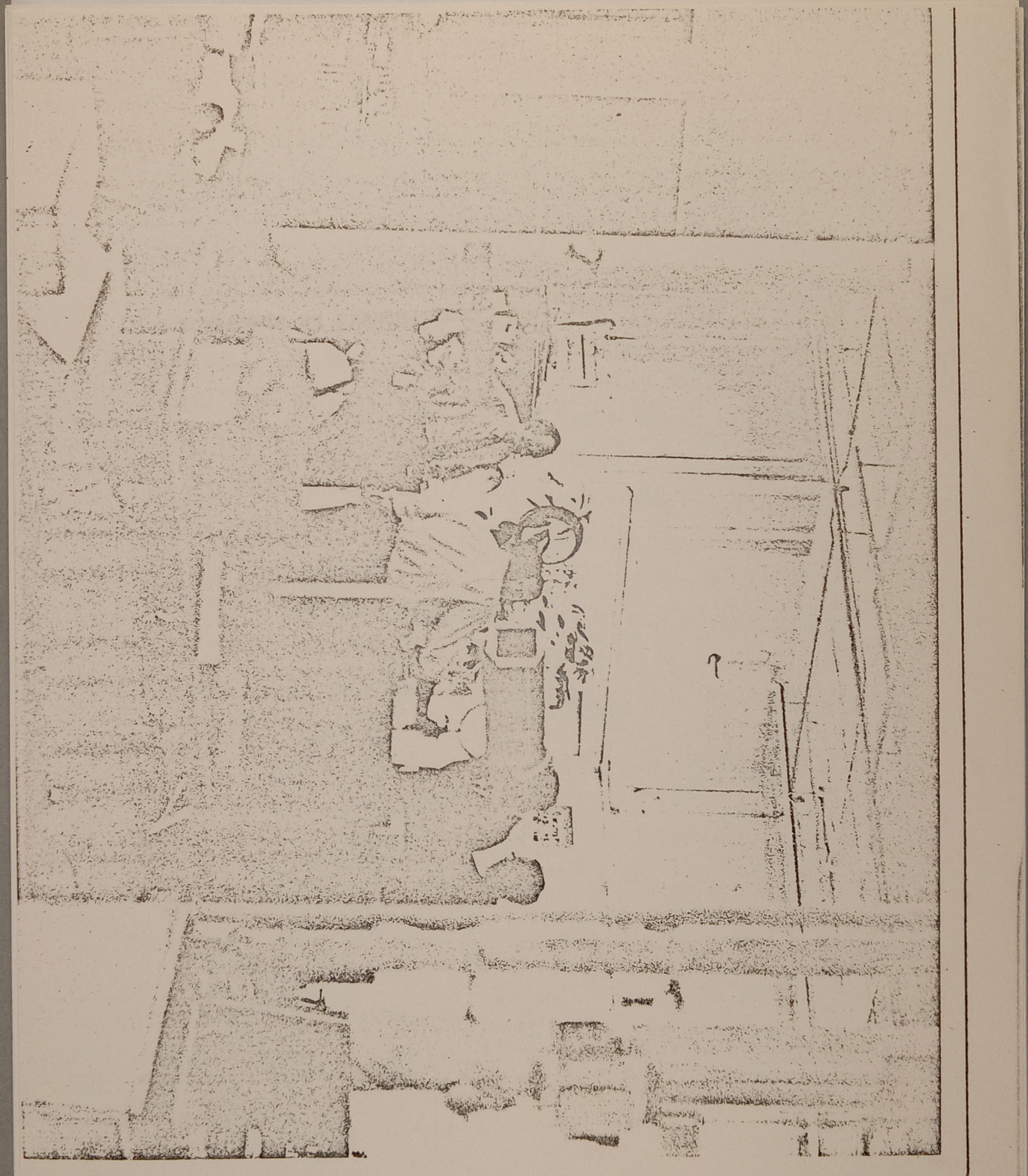
Position with text pages 8-9 and 8-10

CAPTION: Meeting at Rauschenberg's loft on 809 Broadway. Bill Hartig demonstrating standard infrared filter superimposed on video camera to Billy Kluver, Larry Heilos, Robert Rauschenberg, Harold Hodges.

(DO NOT CROP PHOTO IN ANY WAY)

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LOW-POWER FM TRANSMITTER

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The thermographic phosphor was not actually used in any performance at the Armory. Mr. Hartig showed us some of the phosphor powder while we were discussing the Infrared TV in Bob's loft. I realized that it might be the very thing that was needed to observe the output of infrared lasers. Larry Heilos asked Mr. Hartig for a sample of the ▯▯▯▯ ▯▯▯ powder. We tried it and were happy to find that it worked beautifully. Until that time there was no simple systems for observing some infrared laser outputs and nothing available for use with other types. The use of the thermographic ▯▯ phosphor allows all types of infrared laser outputs to be observed.

Jim McGee, March 1973

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Visual Display of Infrared Laser Output on Thermographic Phosphor Screens

Heat sensitive phosphors[1] have been found to be useful for visibly displaying the output patterns from infrared lasers with wavelengths from 0.97 to 28 microns. Lasers with longer wavelengths were not available to us, but one expects that the technique decribed here will still be applicable as the utilized process is a thermal one.

Radelin[2] thermographic phosphor 1807, containing ZnCds: AgNi, was mixed with lacquer to a consistency suitable for spraying. Displaying screens were made by spraying this mixture on various types of substrates.

A screen of this type, which is at room temperature, is flooded with longwave ultraviolet light to produce luminescence. The laser beam of interest is then directed onto the screen, and mode patterns appear as darkened areas where the beam strikes. This darkening, or quenching of the luminescence, is caused by a local rise in temperature.[1]

A photograph of the screen, taken with a yellow filter, is shown in Fig. 1. The bright area is the glow from the phosphor, and a mode pattern in which the 01 mode is dominating can be seen clearly.

The type of substrate influences the sensitivity, persistence, and power-handling capability of the screen. The substrates tried were 0.5 mil mylar sheet, 5 mil asbestos paper, and 0.5 mil aluminum sheet.

The mylar sample proved most sensitive at most wavelengths and had the added advantage that the dark patterns could also be seen through the transparent mylar from the rear side. Beams with power densities as low as 20 milliwatts to 60 milliwatts per cm² were observed at wavelengths of 3.39, 10.6, and 28 microns. The persistence was in the order of one second.

The asbestos screen, which was ten times thicker, was slightly less sensitive and had a slightly longer persistence than the mylar.

When using aluminum as the substrate, the persistence was shortened to a few tenths of a second and the sensitivity was down by a factor of 8 to 10.

The sensitivity of all three screens increased sharply to about 1 milliwatt per cm² for beams with wavelengths in the vicinity of 1 micron. This strong increase indicates that there is an additional physical mechanism involved at these wavelengths.

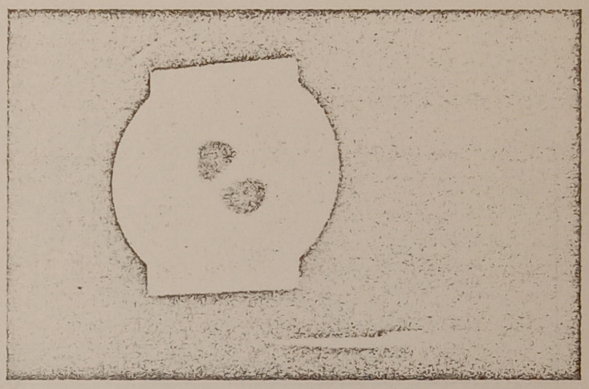


Fig. 1.

Manuscript received October 18, 1966.

[1] W. H. Byler and F. R. Hays, "Fluorescence thermography," *Nondestructive Testing*, vol. 19, pp. 177, May–June 1961.

[2] Trademark, United States Radium Corp., Morristown, N. J.

J. D. McGee
L. J. Heilos
Bell Telephone Labs., Inc.
Murray Hill, N. J.

8 ☒ Open Score 8D-3

Position with text page 8-11

Text on page 8-11 is caption to this page.

© IRE

return original

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8 - OPEN SCORE 8P-10

POSITION TOGETHER: TEXT PAGE 8-12, THIS PHOTO, and ~~SCHEMATIC~~ SCHEMATIC, 8D-4. Also 8P-11.

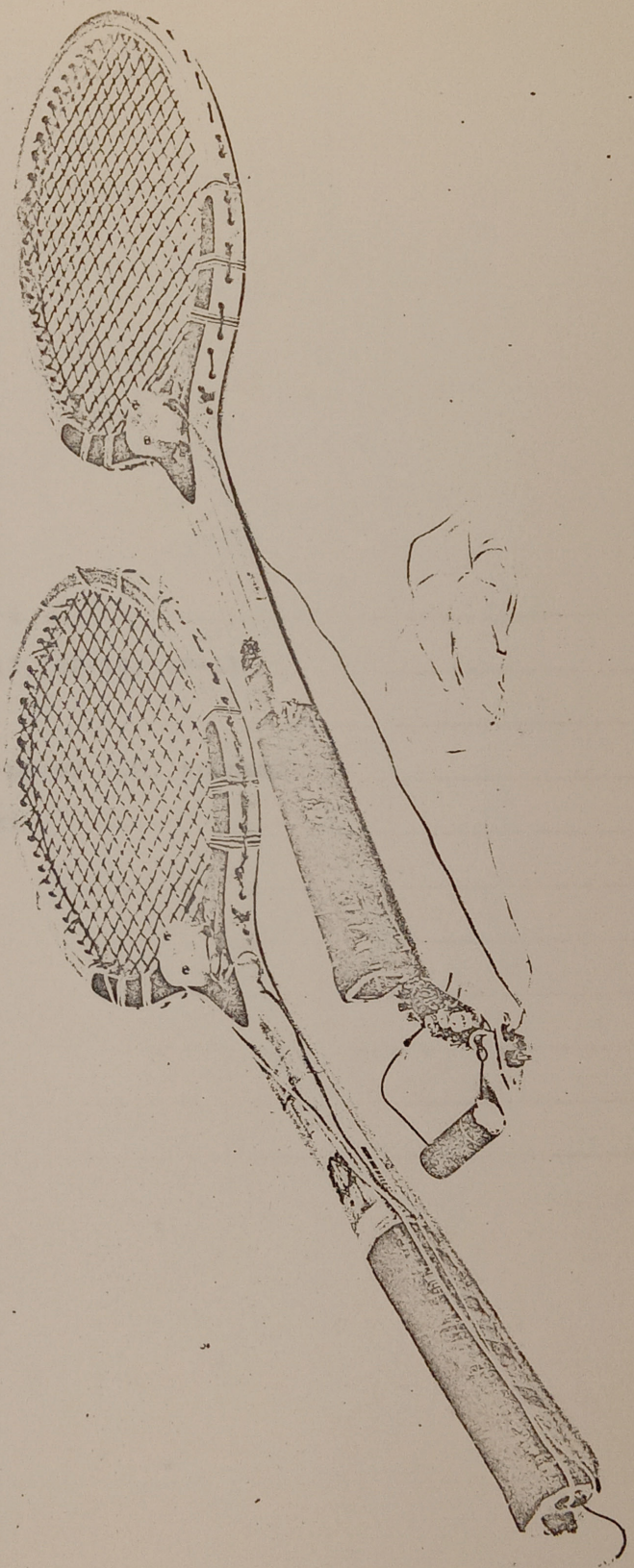
CAPTION: Contact mic and transmitter ~~removed~~ removed from handle. Antenna is wire wrapped around racket.

PHOTO: COURTESY: ~~BELL~~ Bell Telephone Laboratories

8-10

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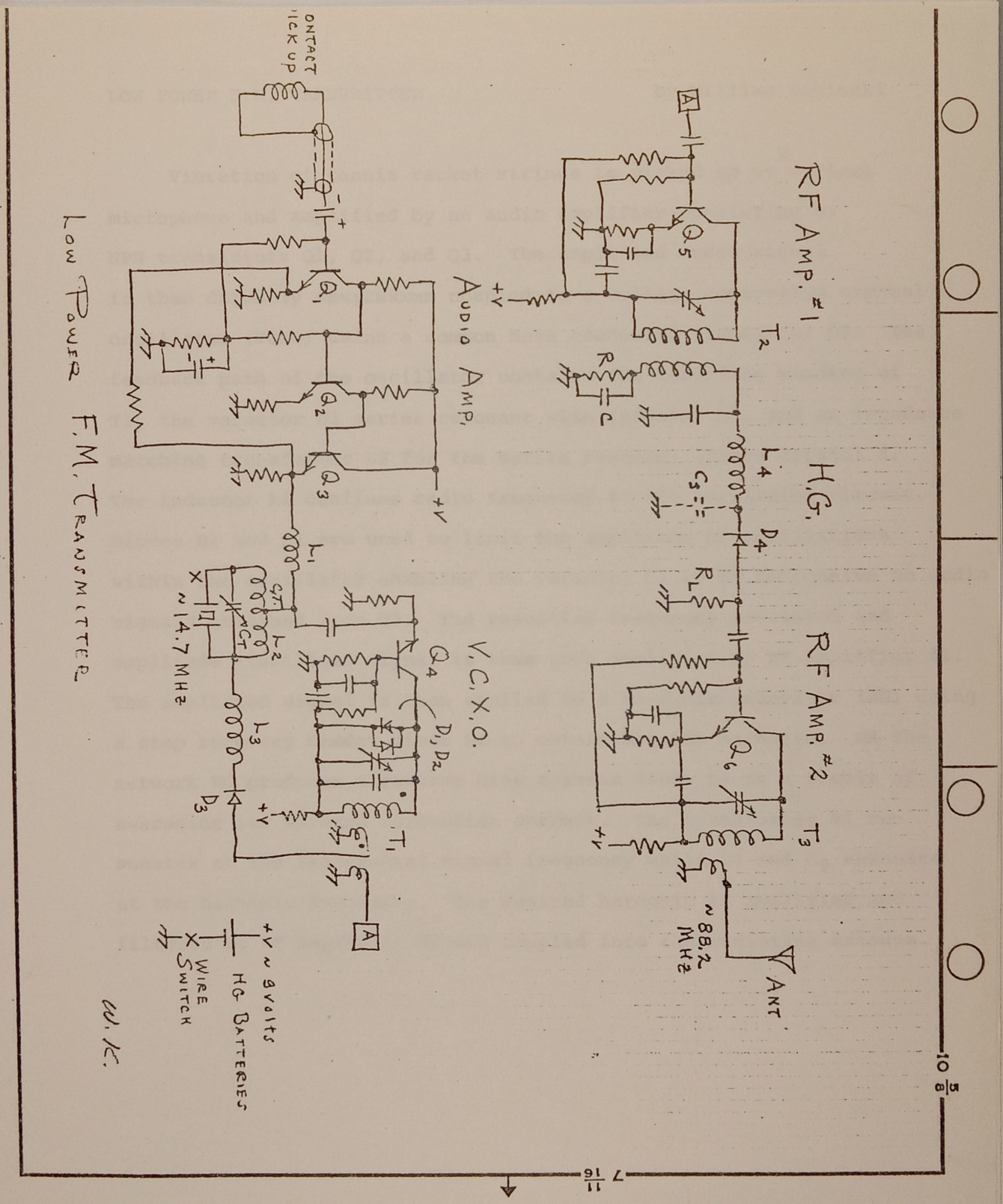
8- OPEN SCORE 8D-4

POSITION WITH TEXT PAGE 8-12, 8P-10, 8P-11

CAPTION: Schematic for low-power F.M. transmitter designed by William Kaminski

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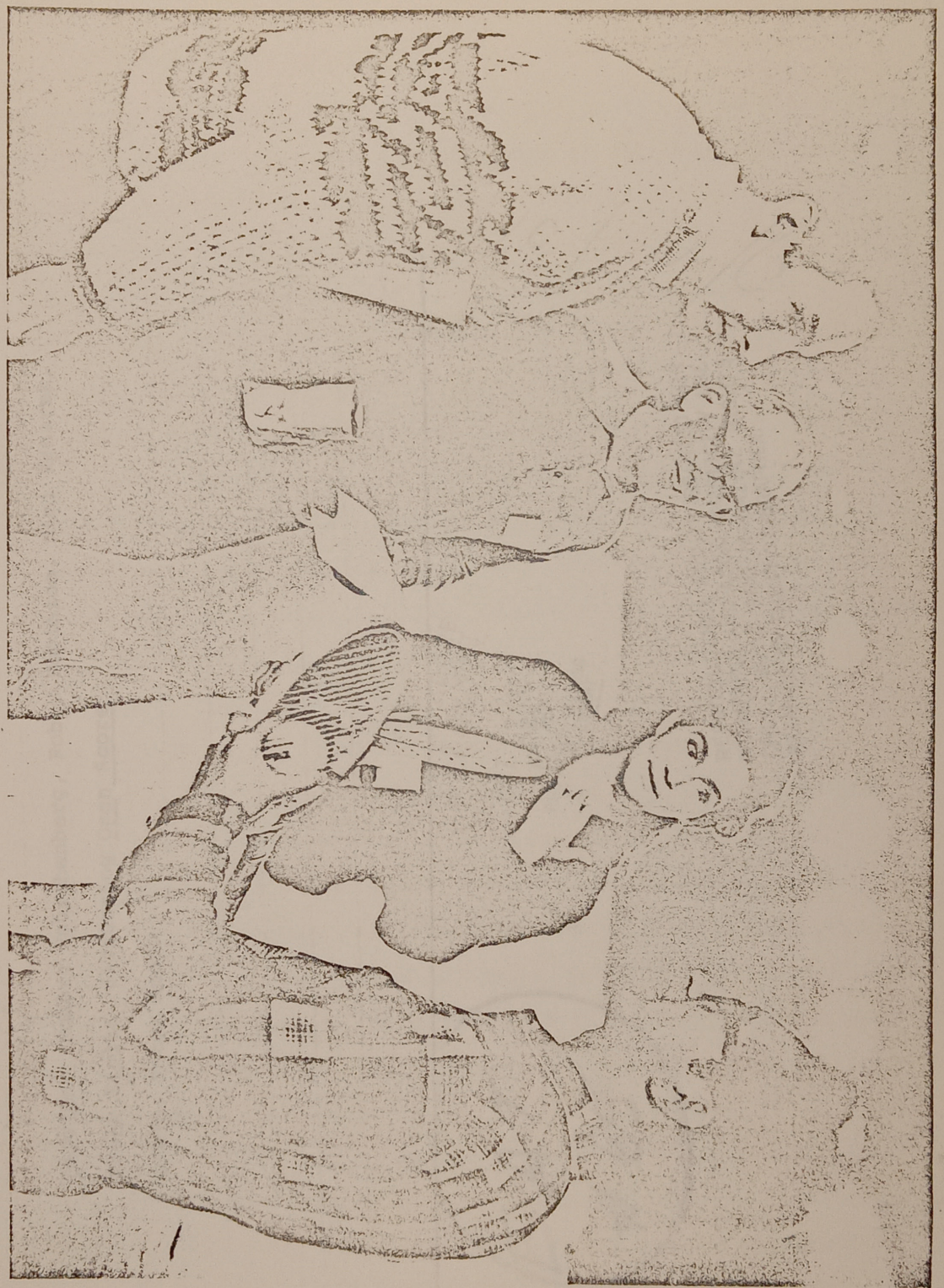
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LOW POWER F.M. TRANSMITTER by William Kaminski

Vibration of tennis racket strings is picked up by a contact microphone and amplified by an audio amplifier consisting of NPN transistors Q1, Q2, and Q3. The amplified audio signal is then directly coupled to a voltage controlled crystal oscillator (VCXO) using a common base connected transistor Q4. The feedback path of the oscillator contains the secondary winding of T1, the varactor D3 series resonant with inductor L3, and an impedance matching transformer L2 for the series resonant quartz crystal X. The inductor L1 confines radio frequency to the oscillator circuit. Diodes D1 and D2 are used to limit the amplitude of oscillations within the oscillator enabling the varactor D3 to be responsive to audio signals obtained from Q3. The resulting frequency modulated and amplitude stabilized signal is then amplified by RF Amplifier #1. The amplified signal is then applied to a harmonic generator (HG) using a step recovery diode D4 to obtain the 6th harmonic. The network RC produces a reverse bias diode D4 as a result of averaging its forward conduction current. The transformer T1 resonates at the fundamental signal frequency while L4 and C_S resonate at the harmonic frequency. The desired harmonic is amplified and filtered by RF Amplifier #2 and coupled into the radiating antenna.

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Collection:	Series.Folder:
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8 - OPEN SCORE 8P-11

SEE 8P10/8D-4 and Text Page 8-12

2-11

CAPTION: Robert Rauschenberg, Robby Robinson, Mimi Kanarek, Frank Stella discussing Open Score

PHOTO: Peter Moore

PETER MOORE
EAST 35th STREET
NEW YORK 16, N. Y.
OCT 12 1966
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EAT #65

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D-11

Rauschenberg et. al.

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the diagram in the Program

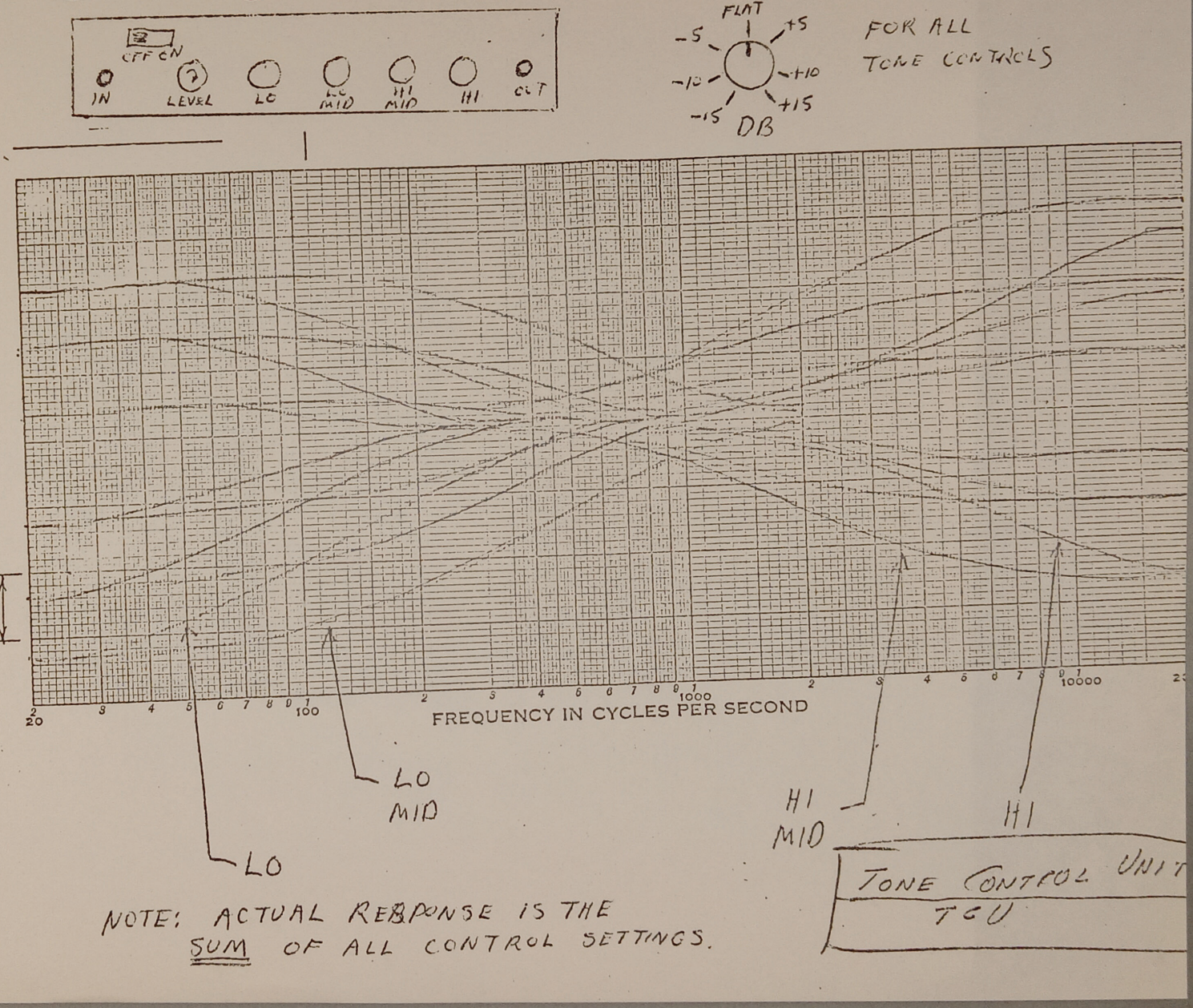
~~Figure 2~~ illustrates the use of the TEEM equipment in Bob's piece. Starting at the lower right hand corner of the drawing two tennis rackets with built-in FM transmitters (not shown) are indicated transmitting sounds to two FM receivers (FMR). The audio signals from these receivers are fed to two inputs of the speaker distribution matrix (SDM), and are combined and recovered on a single output, no. 20. This audio signal, amplified in a power amplifier (PoA), is passed simultaneously through a back-contact of the released low power relay (LPR-2) again to the SDM and to the 12 PoA's and to 12 arena loudspeakers. At the same time the signal is passed through a tone control unit (TCU-2) and a PoA to the five tape recorders under manual start-stop control. Also, the signal from PoA, after amplification in TCU-1, passes through normally closed contacts on low power relays 1 and 2 into the trigger input of the first program drum (PrD-1). Thus, everytime the ball contacts the racket, a tone pulse of a fractional second duration advances the drum by one step to complete the sound function.

Eight encoders and decoders were interposed as a "hold" for the signal from the program drum because the drum could only produce a command for a short period of time. While the field of 8 encoder-decoder combinations looks complicated it was the simplest approach available at the time. Here were encoders which, upon grounding of an input lead, produced a tone. Here were decoders, which upon receipt of a tone, would operate and lock up a relay. Finally, a normally closed contact on this decoder became the permanent command to the power relay to extinguish a particular light, and keep it off.

A simple sequence of 36 such steps was laid out. After 18

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ISSUE 1

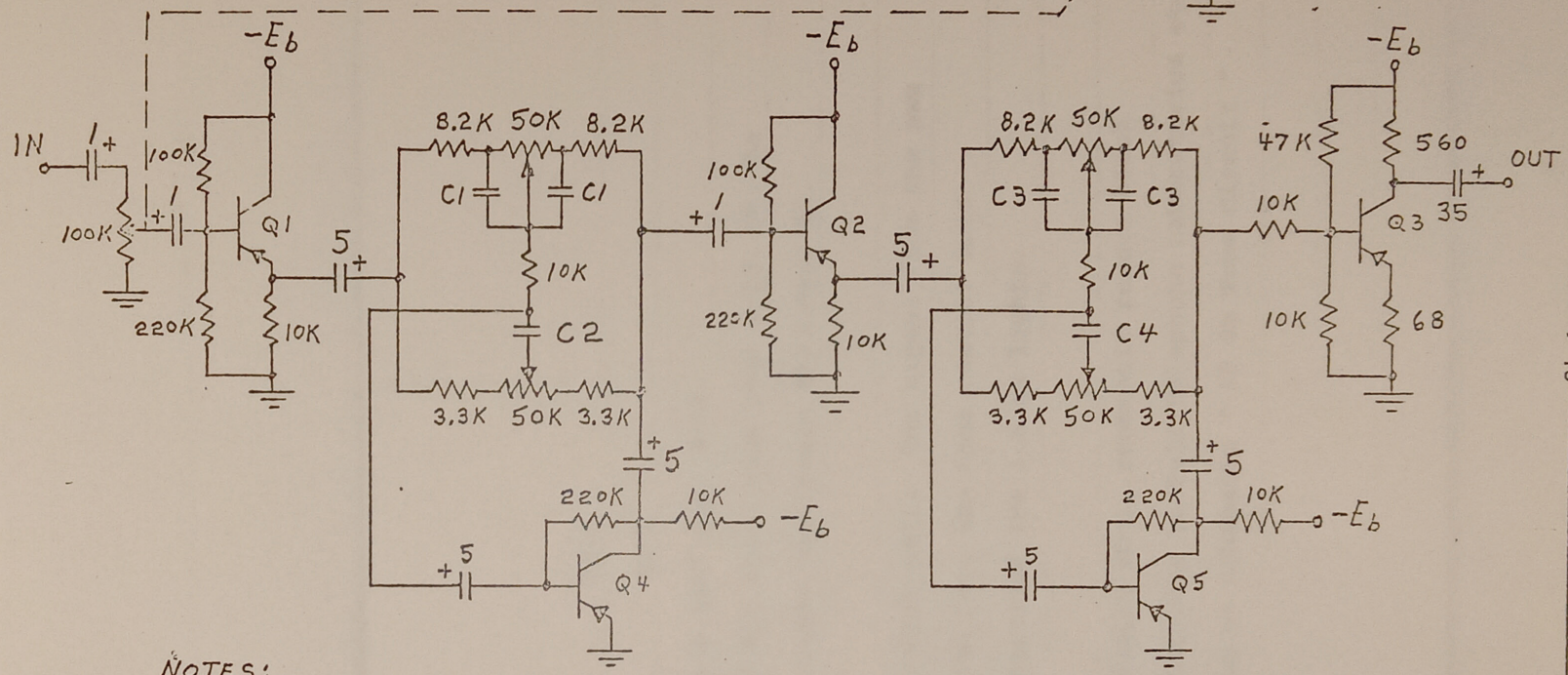
DRAWN ENGR

TITLE 60 DB TONE CONTROL CIRCUIT

BELL TELEPHONE LABORATORIES INCORPORATED

NO. OF SHEETS PER SET

SHEET



NOTES;

1. ALL CAPACITANCES ARE IN MFD.
2. Q1 THRU Q5 ARE 2N3638
3. FEEDBACK NETWORK CAPACITORS
   - C1 = .068
   - C2 = .0068
   - C3 = .022
   - C4 = .0022
4. B IS AN 8.4V MERCURY BATTERY

Z_{IN} MIN. ≈ 33K

E_{OUT} MAX. = 2 VRMS

MAX. GAIN (FLAT RESPONSE) = +5 db

I BATTERY = 7.5ma.

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8 - OPEN SCORE 8D-6

8D-7

Place together near text page 8-14

((8P-12, 8P13 and 8D5 could face page 8-13. Or, be

with 8D-6 and 7 within text pages 8-13 thru 15.

CAPTION: Tone control unit. The signal from the ~~pwr~~

power relay was fed into the tone control unit

which in turn controlled the 1.5 kw lights.

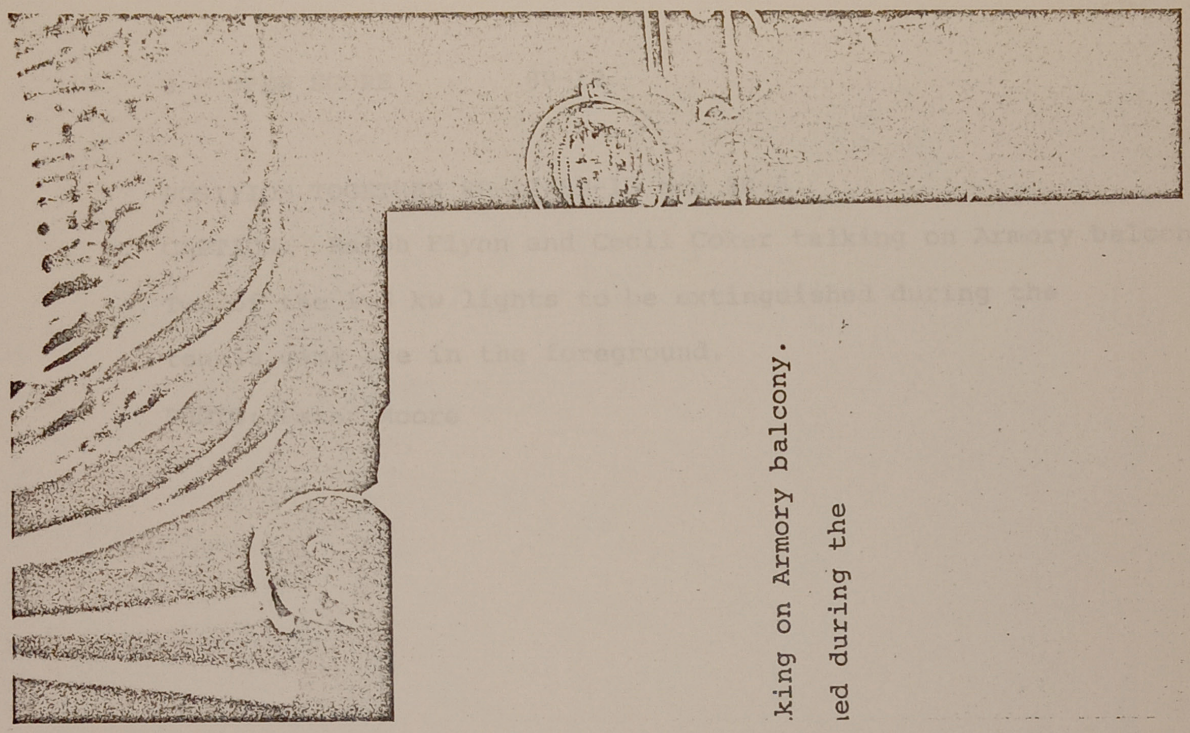
NOTE: When reproducing 8D-6, schematic remove black

edge lines, references to Bell Telephone Laboratories etc.

Sub-title bottom of schematic " 60 db Tone Circuit "

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king on Armory balcony.

ied during the

POWER RELAY

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8 - OPEN SCORE 8P-12

POSITION TOGETHER 8P-12/8P-13 and 8D-5

CAPTION: Ralph Flynn and Cecil Coker talking on Armory balcony. Two of the 1.5 kw lights to be extinguished during the tennis game are in the foreground.

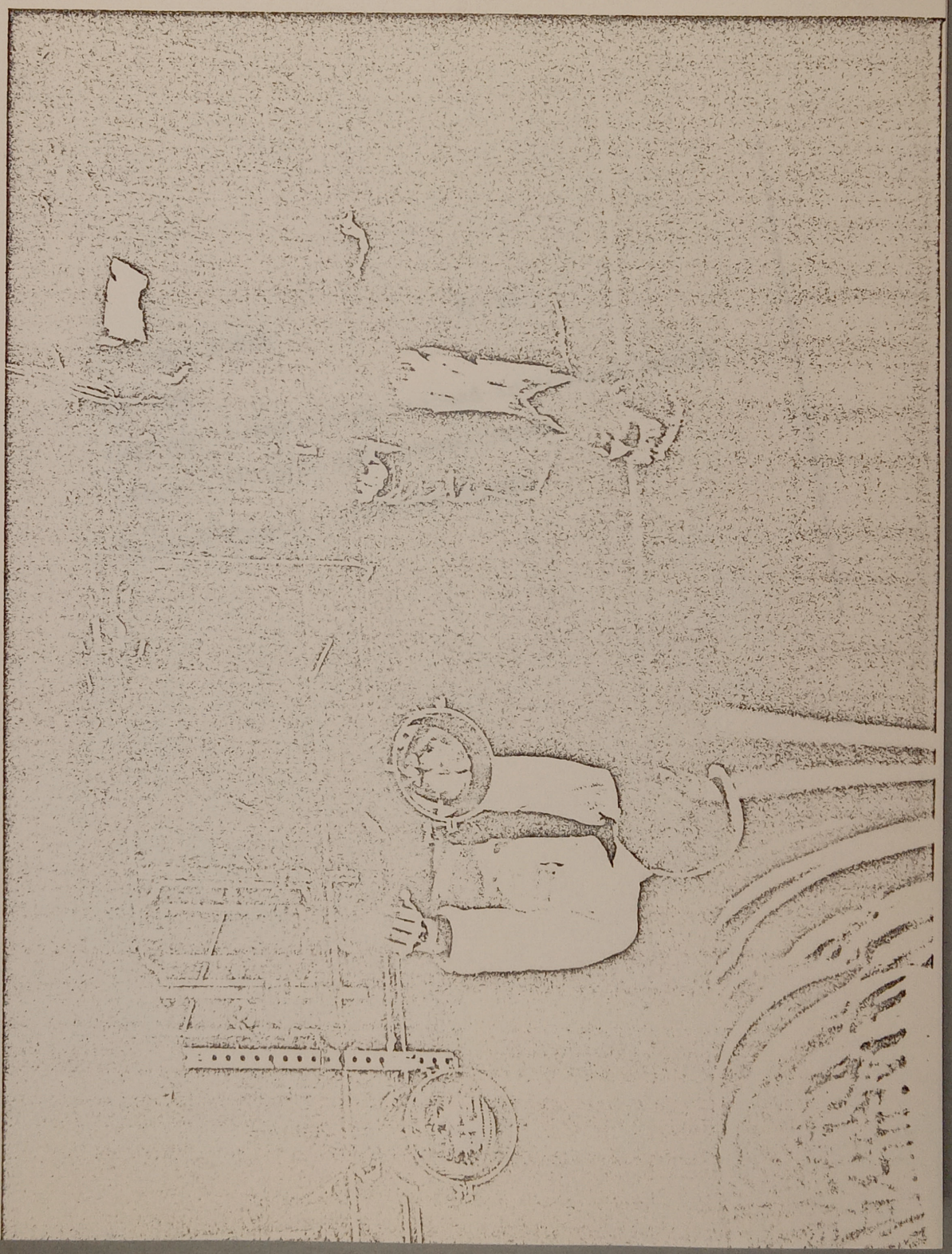
PHOTO: Peter Moore

PETER MOORE
351 WEST 30th STREET
N. Y. C., N. Y. 10001
PHONE 564-5989

8P-12

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8P-13

8 - OPEN SCORE

SEE 8D5

CAPTION: Power relays stacked in control center

PHOTO: Courtesy Bell Laboratories

(Black/white pos. slide enclosed)

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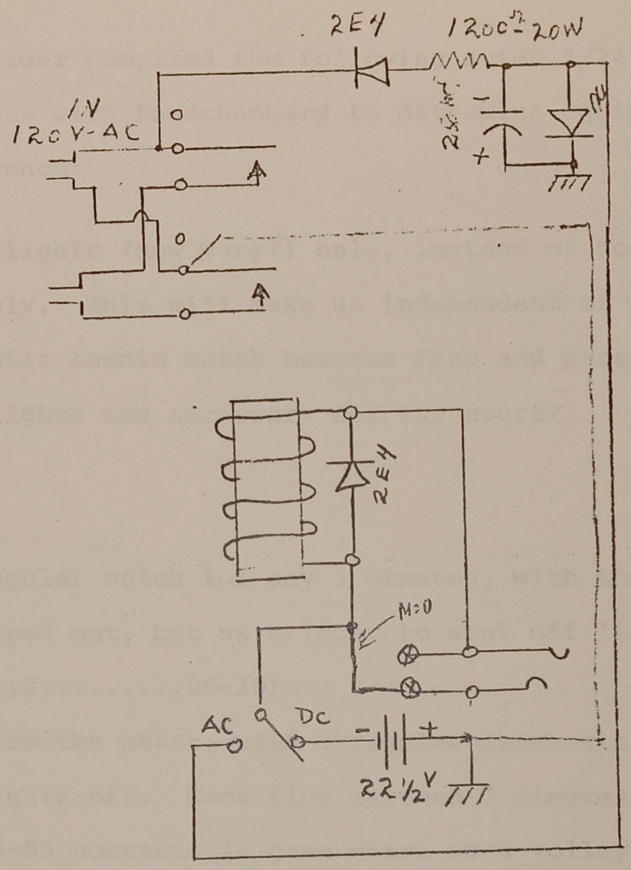
8 - OPEN SCORE 8D-5

POSITION TOGETHER: 8P-12, 8P13 and 8D5

CAPTION: Schematic drawing by Robby Robinson of power relay which controlled the 1.5 kw lights during the tennis match in Open Score

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TEEM POWER RELAY

LJR 9/25/66

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8-16

Herb Schneider compiled the following notes 9/24 based on early discussions with Rauschenberg to determine equipment requirements and timing sequence:

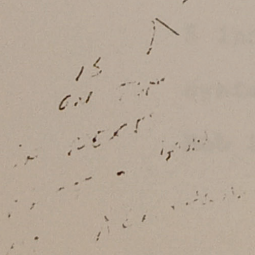
1. Stage lights (how many?) only, instead of house lights. Probably. This will make us independent of the house
2. Authentic tennis match between Fran and partner. How many lights are necessary for the court?
3.

4. a) Regular match for say 3 minutes, with the sound piped out, but us trigger to shut off lights: (1,2.....20-30)

   b) From the start, with irregular intervals, shut all lights off. Game time assumed 7 minutes, with about 35-55 contacts in game where each volley might have 4 - 5 contacts.

   c) Simultaneously record the game on six tape recorders. Before game is over, rewind number 1 while the others are still recording. Start No. 1 when game stops, i.e. when all lights are out, giving the impression that the game is continuing. This could be all done with a looped recorder if one knew the exact game length. (PROBLEM).

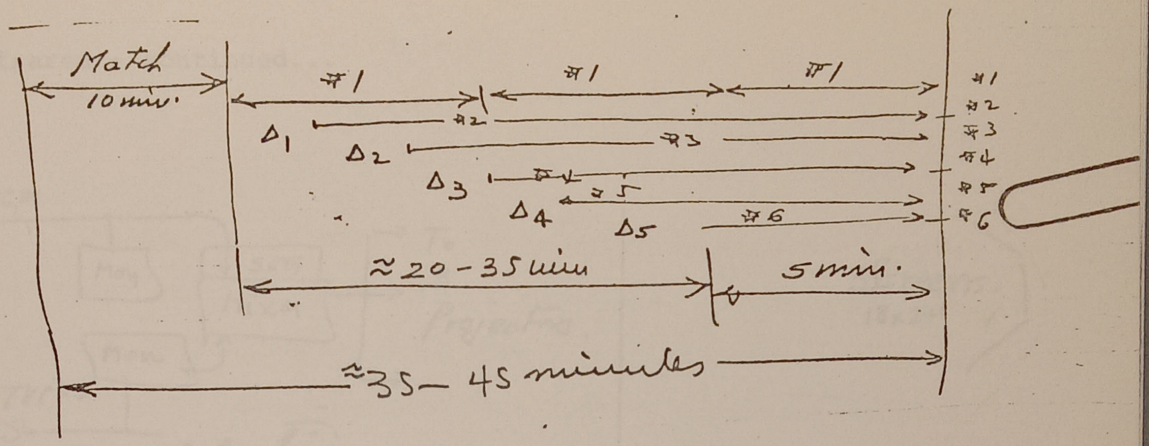
   Time Chart



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8.17



If 20 min. average = 20/5 = 4 min.

35 min. " = 35/5 = 7 min.

Sounds long. Maybe should decat at end again and lights up when sounds stop and no players are in sight. Check with Bob.

Could use two decoders sequentially, to obtain the longer count periods from the decoders. Thus step thru two, instead of one to get the seven minutes. Seven sounds much too long.

INFRARED - 30 minutes

With a cast of 300-500. He may use control center's feedback circuit.

10 activities with a cue from control center

3 projectors, 2 camers, 3 screens

5 individually carried feedback sound sources, unconnected to system

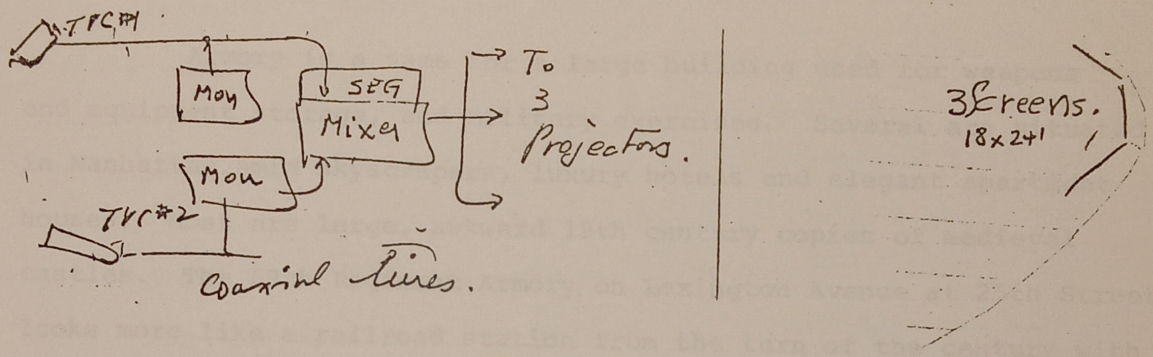
Bob R. will be mixing controls of his system.

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8-18

Infrared - continued...



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ARMORY

By

OYVIND FAHLSTROM

Armory is a name for a large building used for weapons and equipment storage, and military exercises. Several are situated in Manhattan amid skyscrapers, luxury hotels and elegant apartment houses. Most are large, awkward 19th century copies of medieval castles. The 69th Regiment Armory on Lexington Avenue at 25th Street looks more like a railroad station from the turn of the century with its huge network of rib vaults and the chunky exterior rendered in romantic revival style.

The entrance is small and secured as though to a prison. On a warm September day, filled with doubts, I go in a door which has a small aperture. I walk by giant trophy cases, indistinct in the half light and come to a large exercise hall. In the twilight I can perceive its enormity and how the great, steel, dark green beams strain to meet at the crown. I know from the plans that it is approximately 162½ feet high and I think about Ulla Lyttkens from Stockholm's Pistol Theatre who has agreed to be lowered from the ceiling in a special rig. At the same time I feel a sense of peace in the cavernous proportions of the hall. It is quiet and no one is around. Large, torn and dirty standards are hanging on the walls as reminders of days past. Against the sooted crimson, in golden letters, it says on one:

NEVER DISOBEYED AN ORDER

NEVER LOST A FLAG

In my piece I could put a spotlight on this standard when the

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Johnson head begins to be elevated.

Suddenly, magnified in the silence, a ringing--like that of an alarm clock--sounds, and in one of the corners an open freight elevator appears. The door opens and a big, cream colored car is discharged and moves slowly across the floor of the hall. I only then discover there are more vehicles under the balconies: passenger cars, and jeeps on which are mounted machine guns and the like. In this enormous space Dancers will seem like ants. For 'Kisses...' I decide that I will partition the hall using the length and width, but not the depth.

On weekends, a group of technicians from Bell Laboratories and the artists work in a school gymnasium in Berkeley Heights, a middle class, garden suburb in New Jersey. It is late September and summer warm. Eleanor Howard of Ruder and Finn, the firm that is doing the 'PR' for the Festival, herds journalists and photographers among technicians in shirt sleeves, who are sitting and putting together endless numbers of components. Lucinda Childs walks in and stands in her plexiglass box which is to hover over the floor on a cushion of air. But as soon as it moves it scrapes the floor with a deafening elephant's roar. Harsh gong sounds are heard as two technicians test Rauschenberg's tennis rackets which have contact microphones that turn out lights with every hit. Others play with my sound ball: a wireless receiver, amplifier and speaker surrounded by springs so that one can throw it, drop it, bounce it while the sounds of airplane flights emerge from it. (The idiot-savant twins, George and Charles, will use it in their pillow fight scene).

In the faculty lounge I find Rauschenberg tense and nervous about the task of finding 500 persons to appear in his piece in

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20P-1

20 - ARMORY

Text page 20-3

CaptioN: Cecil Coker, L.J. (Robby) Robinson, U.S. soldiers in Armory.

Photo: Courtesy of Maricla Moyano

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uniform in this or that regiment, who was captured on this or that date, at this or that place; belt buckle and regiment insignia from such and such--a herbarium for male symbols. Transference of the manhood of the conquered to the victor? In the cellar we find a cozy, dimly lit bar with walls covered by paintings of battle scenes in dun reds, yellows, browns, and executed with painstaking detail. Next to the bar is a military latrine--very large and complete with white tile and rows of urinals without screens inbetween.

On Wednesday the 4th of October, a group of demonstrators assemble at Fifth Avenue and Central Park. The rain blows away just in time and they unload their 3 by 5 foot placards which picture giant portraits without test: six of Bob Hope and one of Mao Tse-Tung with a sunny smile. The demonstrators--among them a finely built family girl, a young English physician in an impeccable light grey suit, a young photographer of Russian descent with a bushy, black beard, Soren and Ulla from the Pistol Theatre, and a young mother in jeans with a child on her back--lift up their placards and begin to press forward, but furious gusts of wind tear them out of their hands. Alphonse Schilling films their heroic struggle and Bob Fass, from WBAI's 'Radio Unnameable' moves among them with a tape recorded and picks up the comments of the passers-by. He also asks them: 'Are you happy?' 'What makes you happy?'

We move down to the lively business district around 40th Street and Sixth Avenue where people crowd around Fass and the demonstrators. A policeman turns up and is mollified when I show my permit and we retreat one block. A young black bounces out of the crowd, waves as in ecstasy and shouts: 'Bob Hope for President! Bob Hope for President!' He jumps up to give Mao a

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20-f-2

20 - ARMORY 20P-2

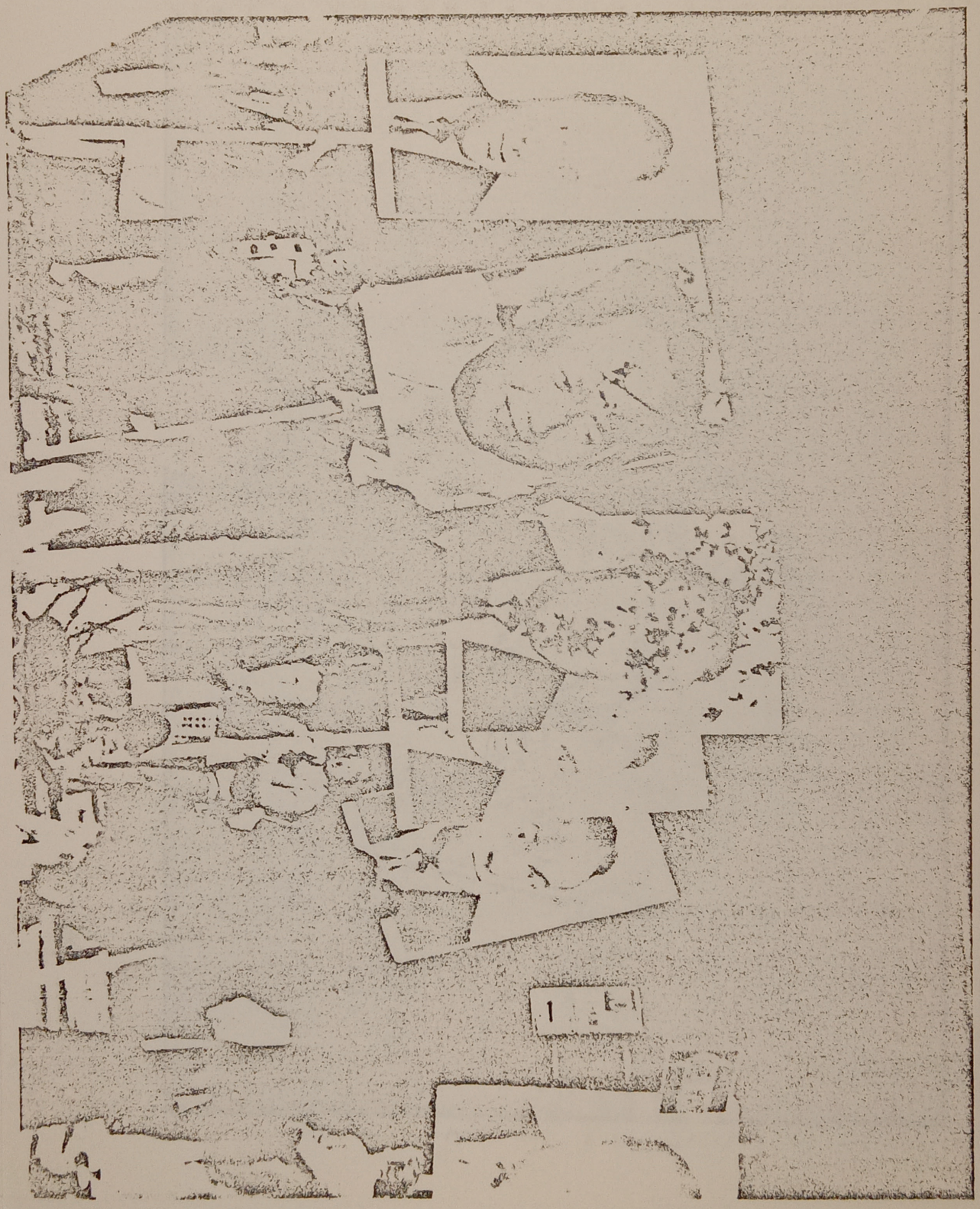
Text page 20-4 Östlihn

Caption: Oyvind and Barbro Fahlstrom

Photo: Bruce Glushakov

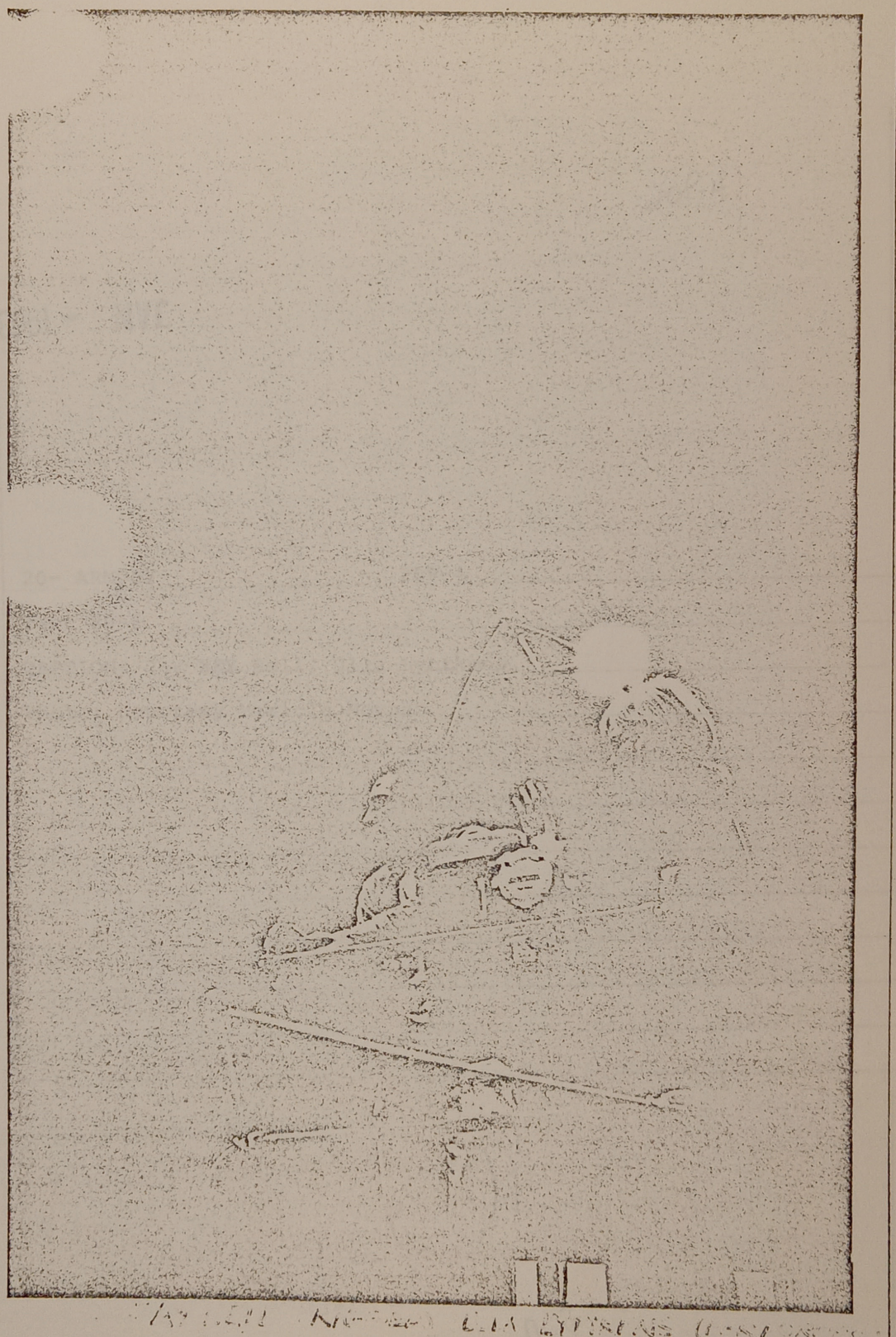
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20P-4

JAN - 1968

20- ARMORY 20P-4

Text 20-5

CAPTION: Jay ~~BEE~~ Bell, Ulla Lyttkens

Photo: Courtesy Maricla Moyano

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pat on the cheek: 'And Bing Crosby for Vice-President!!'

Three days before the first performance the riggers arrive. Everything that is supposed to be affixed in the ceiling (many of the projection screens, and in my piece for instance, the swings, the sheet of glass, the sling shot cushion, the clothes line, Ulla's elevator) has to be installed by brave men who are not susceptible to vertigo at high altitudes. At the heels of the riggers come sombre little, well groomed men with black attache cases. These are the insurance men. When the formalities, which take an expensive half-day, are completed, Jay Bell, Master Rigger, installs the small elevator and takes Ulla on a preliminary aerial tour. With fatherly care he shows her how to operate it. She manages with ease, and the skeptics eat their words.

Jay is not quite 30 years old. He is very tall and walks slightly stooped, flexing the muscles of his enormous back and bull neck. He has a heavy but beautiful face with Scopas sloping eyes. He is a novelist and soon will have his first book published. He has gone through a typical writer's career--seaman, prisoner, bartender, entrepreneur, croupier, doorman, Bahamas realtor; and lastly, freelance rigger. (We could not afford union riggers because they demand $25 an hour.)

After months of futile searching in Sweden and New York for a film of snow falling, and only snow falling (to be projected through a green filter against Frogman), I obtained, through one of NBS's stage managers, a lead on a hardware store in Queens where you can buy snow made out of plastic: 'Mutual Hardware and you ask for Herb or Louie.'

We slash sheets with razor blades making holes as close

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not until the last days that I realize it has been Colonel Lutz who has followed our activities from early morning into the night casually minding the store like a brownie. He has a good eye for Ulla L., whom he constantly meets with a grunt and something about, "...back to the farm, Girl!"

Another ever present figure appearing on the Armory floor is the sweeper, Slim, a gangling black man with his head wrapped in a black silk bandanna to straighten his hair. There is no question about how he spends his hourly wage and under the circumstances it seems a practical and honorable solution. In a drugged stupor, he designs on the floor with a string mop in slow motion complicated labyrinthine water tracings. His private game is to carom beer cans off the bleachers in the spectator section with his mop at quarter speed, and the clangor resounding throughout the Armory acts on our nerves like Chinese water torture.

In order to protect the electronic gear from the curious, we hire Burn's guards who walk around in imitation police hats, badges and pistols. Late one evening a couple of them are surprized when we catch them carrying away our TV monitors in the belief they are television sets. Another guard specializes in selling ticket stubs at half price.

During this time, the activity for my piece is concentrated in Alphonse's studio. There Ulla L. sits tying in garlands the 100's of shiny brown pieces of facimile dog shit which we have procured from novelty stores. Soren Brunes creates a sturdy but soft elastic doll to fill Frogman's suit as it must withstand a fall from the ceiling above me while I am holding my fire talk. Alphonse has sculptured the big grey Johnson head and the 3-foot long, grey mouse. Both are light and strong enough to slip onto Ulla's arms

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when, as the Space Girl, she walks on a tight rope in the last scene. Phil Idone, who heads the carpenters' team, has manufactured lifelike amputated fingers, noses and ears, to fill the salad bowl in the horror still life about the massacure of the Indonesian communists.

As the rain drums steadily on the vaulted roof early one morning we are finally allowed to begin rehearsals in the Armory. Everybody, looking grey and sleepless, is in bad moods, and only Slim walks serenely knocking away the empty cans. We have hardly begun and I hear a soft whirring sound. Turning just in time, I see one of the swings sweep by in an enormous arc hitting Tom Gormley's two year old daughter on the head. Incredibly she gets by with just a bump, and the alarm of the onlookers is lessened by a pillow fight and a ride around the Armory in the electrically powered golf cart--fast, silent and simple to maneuver--the car of the future.

During the lunch break the dogs are auditioned. Jim Hardy's docile German shepard and Ed Iversen's Toto are old friends. Toto is a reddish brown Spitz, spirited, alert, and obedient; a real Circus dog. But when Barbara Jarvis's dog arrives, Toto begins to behave like the most insulted of prima donnas so, disappointed, we begin again to plow through our circle of canine aquaintances for another performer. The dogs are going to hang in front of the Keane kids, hydrocephalic geniuses, who have enormous eyes and balloon heads. In the Humanoid section, with long rods they will point at characters in the science-fiction film about robots who are more human than human beings.

The production stands or falls with the capacity and the ingenuity of the volunteers in fulfilling the many requests for

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assorted props. Letty Eisenhauer, a star from the beginning of happenings combs the thrift shops looking for grey sweaters for the swinging Chinese sparrows. Barbro, my wife, spends weeks at Macy's and Woolworth's. Cassandra collects samples of all types of American cotton, disappears with an ultraviolet light down to a darkened, wood panelled mess hall in the Armory where portraits of past heros hang on the wall and athletic trophies weigh on the mantle--to find out that American cotton evidently has been bleached in a different way than the Swedish which shines magically under ultraviolet light. In the end, we have to make a 32½-foot square 'Snowfield' with U.S. cotton and spray it with fluorescent liquid.

A moment of success comes, when, in one of NBC's small and elegant projection rooms I get to see an Italian advertising film for the mineral water 'Acqua Sangemini', which Frank Konigsberg, through a feat of detective work located and brought to New York. Last July in Italy I saw it over and over again on TV and was touched by the ethereal tableaus in the 30's style of children and the catching sweetness of their song. This will be the high point in the section about the 'orgasm ray'.

On the other hand, I fail time and again, in spite of reliable contacts, to reach Timothy Leary, the LSD prophet. I want him to tape record an exercise in breathing meditation. I receive a tip and rush down to the Village Theatre with a tape recorder, but there is only a group of young people, his apostles, or as a young girl says with deep affection 'we are all his children.' Eventually, I learn that Leary spent the night in jail and is expected to be released that afternoon. I am able to get back to the theatre only to find Leary has taken a plane to Anchorage, Alaska where he is going to speak in front of a P.T.A. meeting, and later, utilizing

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20 - ARMORY 20P-5A and 20P-5B

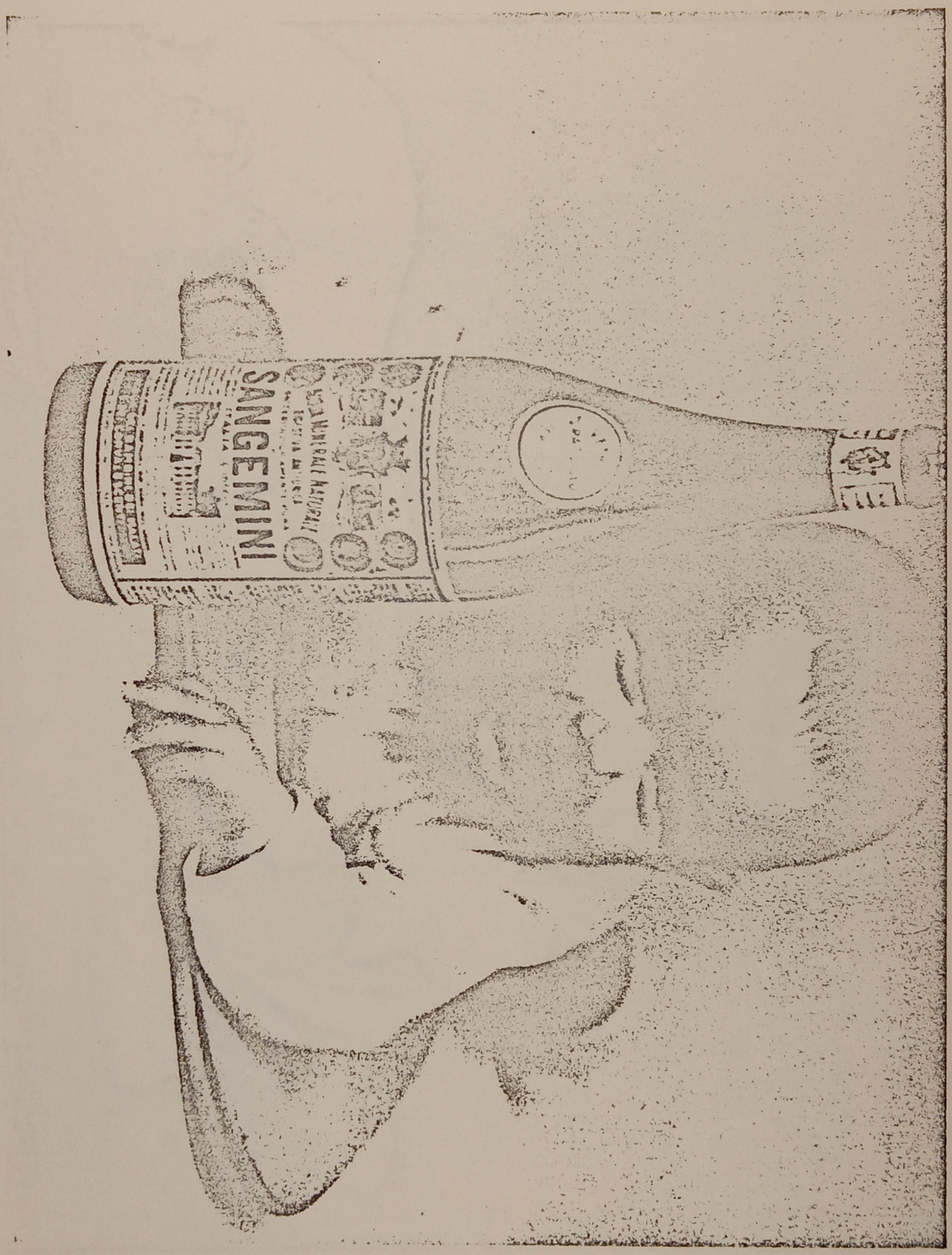
~~Text~~ Text 20-10

CAPTION: Italian advertising film for mineral water 'Acqua Sangemini'

PHOTO: "Acqua Sangemini", Ditta Agrippa, Rome; 16 mm

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gather at his house, all equally anxious about the strangely definite state of his affliction. He has printed on a card which he sometimes holds up: 'NO SYMPATHY PLEASE'. He guzzles gigantic drinks but looks just as shy and uneasy as he does in photographs from the early fifties. When I come in he writes on a scrap of paper: 'CAN I BE IN YOUR PIECE WITHOUT TALKING? I CAN MOUTH AND LET SOMEONE ELSE TALK.' During the next day he regains his voice.

I have been a night person for 15 years but now I am awakened before eight in the morning by a gnawing in my stomach and I see where the bottlenecks and the weak points in the production are. During the day, the many hours by the telephone lead to an almost intoxicated state of mind by 4 and 5 a.m. (I also realize that in the United States one can do and does almost anything and everything over the telephone. Compare McLuhan, and Goebbels on the July 20 conspiracy to assasinate Hitler as a coup with the telephone.)

The United States has no diplomatic, tourist, or commercial ties with China but during one hour every day one can telephone from here to Shanghai. Day after day I sit by the telephone connected to a tape recorder (which in turn is surely being listened in on by the FBI) and I hear the telephone operator in Oakland, California ask the telephone operator in Shanghai for the Office of the British High Commissioner, 33 Chung Shan Lu, telephone number 114-89. I would like to ask him what the weather is in Shanghai, and then use the tape in 'Kisses...'. Each time I and the FBI hear through the starry sphere of radio static the Shanghai voice, unaccustomed to English, deny the existence of such an office or any like it. Didn't she understand her American colleague's mile-long string of alpha-

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betics: A-able, B-baker, C-charlie etc.? Was she just generally unwilling to cooperate? Or, had the Red guards made his highness the Commissioner pack his bags? At any rate, I was unable to reinforce McLuhan's and Cage's theses that technology bridges political barriers.

On Sunday after the first three performances the stage manager goes to the hospital to be operated on for bleeding ulcers. Her assistant backs out. Another participant forgets for the first time, and for three days in a row, to take 'The Pill'.

On Tuesday I contact Leary's closest co-worker who has been lying low in New York State to evade the police. Though he doesn't know me, he lets me visit him in his one-room apartment accoutered with low couchers, oriental postars and seductive cats. He composes and writes a breathing exercise which he then reads with inimitable clarity and ease. He invites me to his pipe. I draw some puffs but feel nothing. He points out that the more used to smoking you are the fewer puffs you have to take. I try not to consume too much of his costly wares.

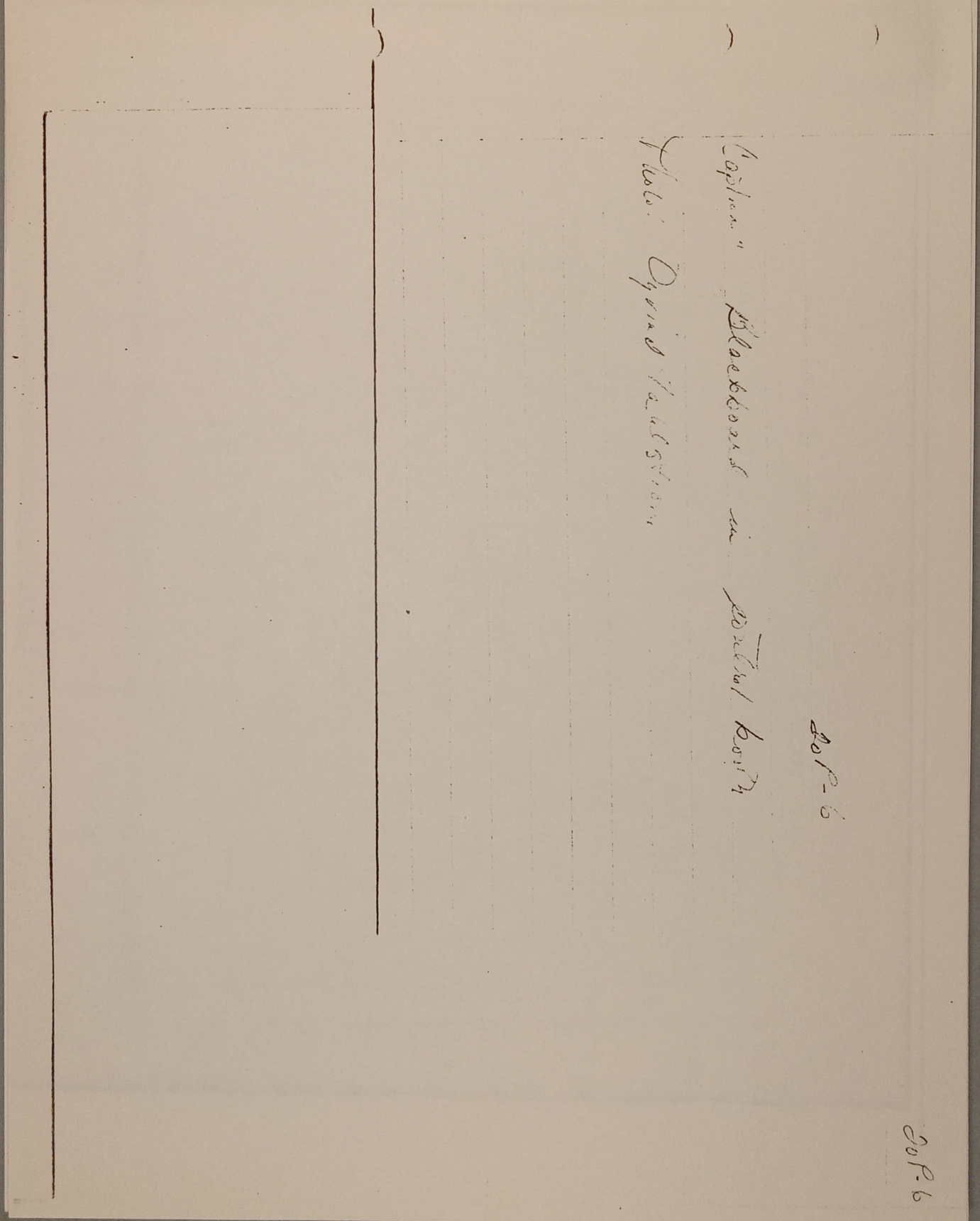
At the Armory technicians are overworked and family conflicts develop. Jim McGee tells that he and his wife have cleared the air with a fearful quarrel because his girl believes that 'Papa doesn't exist any longer.'

I hear Jay, the rigger, in talking about my piece has said He's going to put all his eggs in my basket. Nothing could please me more because what he means is that he is going to force 'Kisses...' to come first on the program both evenings which is a tremendous advantage.

The second rigger, a red headed Irishman, falls down and breaks one bone in his hand. He occupies his time in the next few

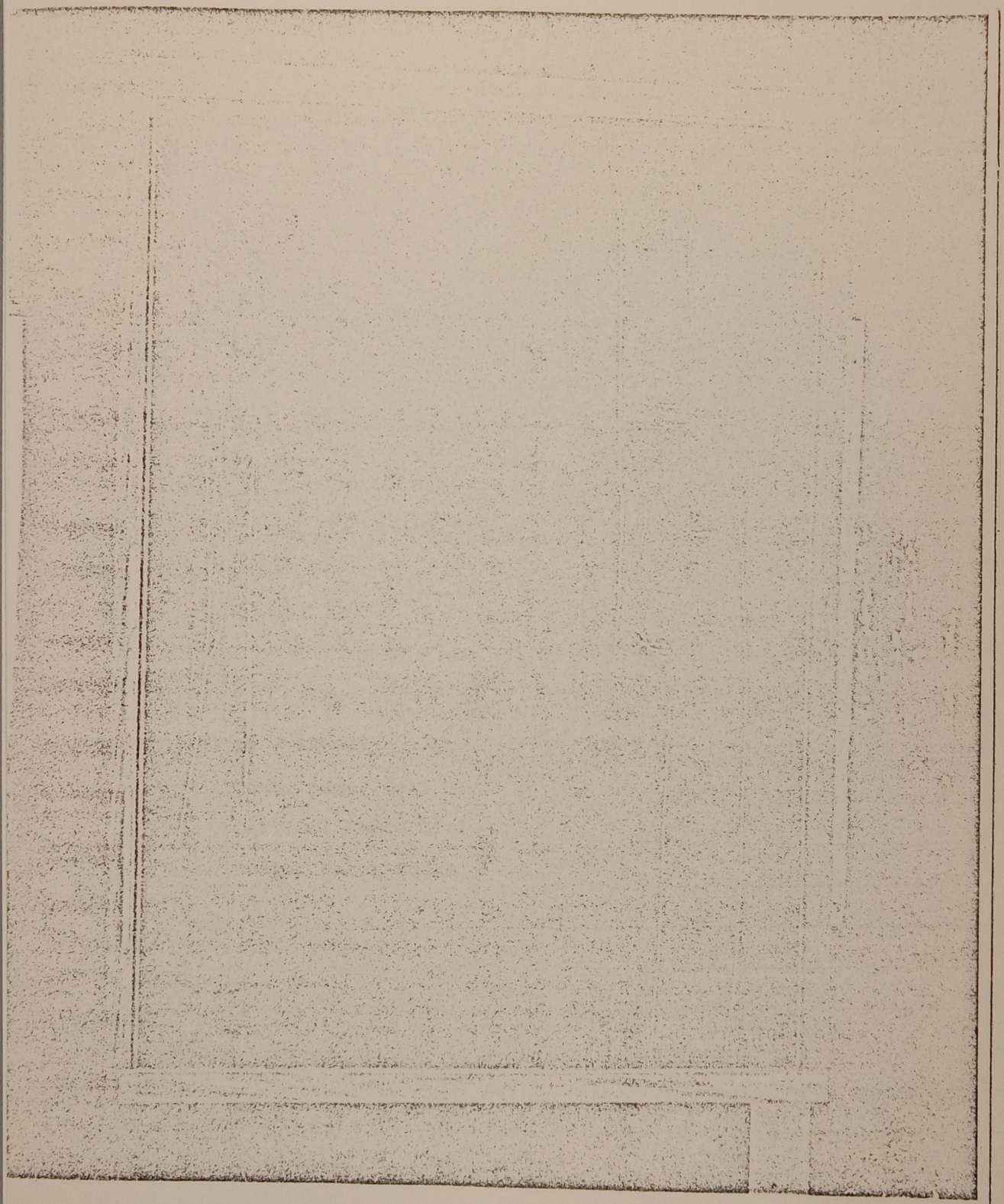
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20P-7

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20 - ARMORY 20P-67

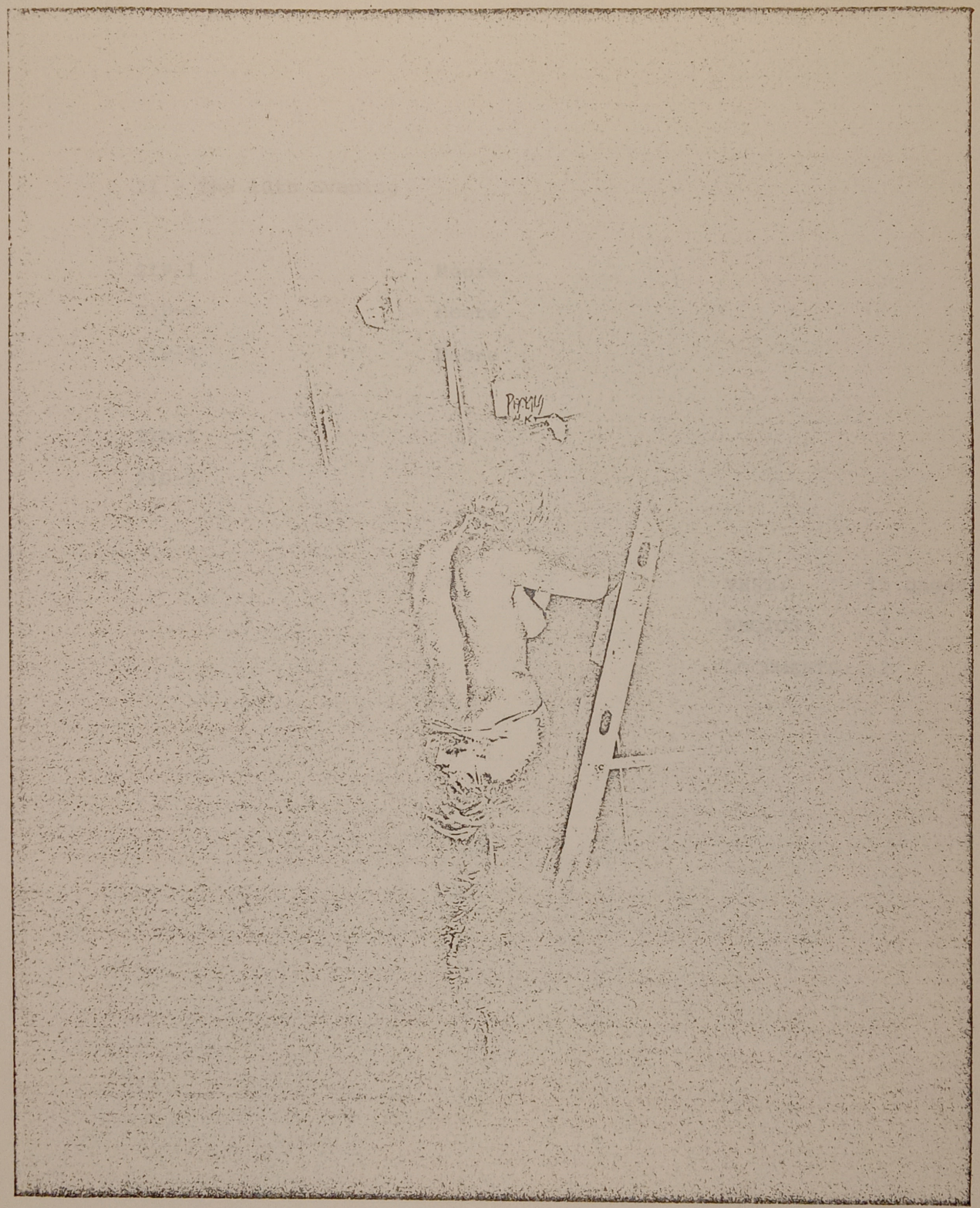
Text, page 20-15

CAPTION: Space Girl

Photo: Peter Moore

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21 - The 10th Evening

21P-1 Moore

21P-2 Moore

21P-3 Moore

21D-1

21D-2

TEXT: 11 pages

PHOTOS: 3

DOCUMENTS: 2

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247-1

(C) 1966

11/30/66
B-28

21 - 10th evening

21P-1

Within text page 21-4

CAPTION: Cecil Coker, Lucinda Childs, Billy Klüver, Fred Waldhauer during Central Plaza meeting

PHOTO: Peter Moore

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21 - 10th Evening 21P-2

Position within 21-8

CAPTION: Panel of artists and engineers: from left Deborah Hay, Bob Kieronski, Cecil Coker, Lucinda Childs, Billy Klüver, Fred Waldhauer, Alex Hay, Robby Robinson, Oyvind Fahlstrom, Ralph Flynn, Steve Paxton, Dick Wolff, Bob Rauschenberg hidden by raised hand.

Photo: Peter Moore

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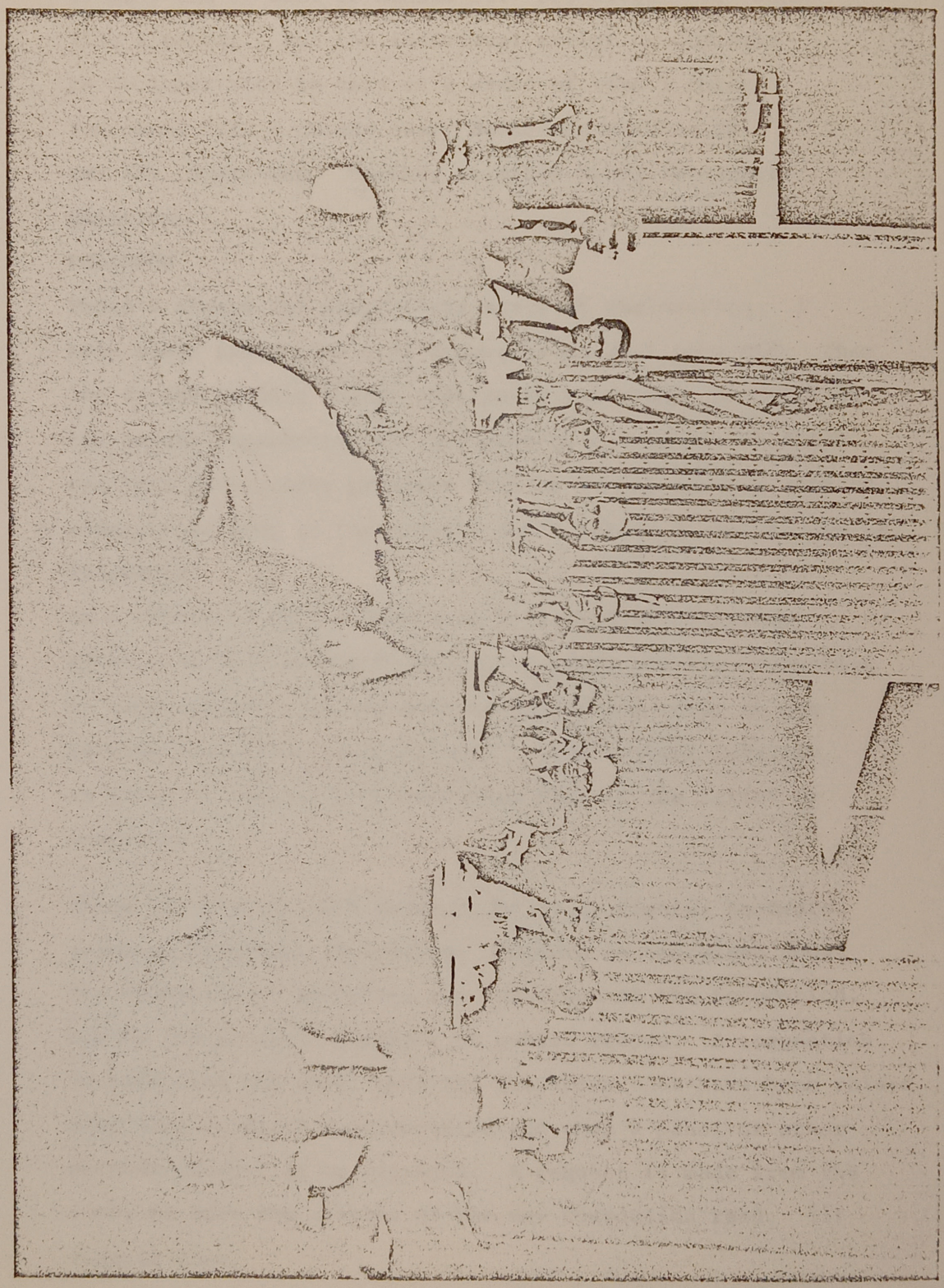
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21P-2

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if they can or want to handle it. Or, forget it. Dont' file a patent. For the individual artist or engineer to be interested in this is a waste of time I think. You could file a patent every Wednesday morning if you are interested. Whether it makes money is another question.

ROBINSON

There's always the proprietary state of engineering. I hope other industries will cooperate as Bell Labs did. They let us use certain things undergoing patenting. We notified the patent department and they gave us clearance. I don't see that proprietary problems will be a wall in this kind of endeavor as long as the artists don't scream I want to own it.

WALDHAUER:

As a matter of fact I happen to be a registered patent agent...In fast moving technology patents are for protection of corporations, and are used as bargaining tools to get patents from other corporations. I don't think industry is going to exploit the individual idea of the artist or engineer.

There is a lot of talk about proprietary rights, hardware, gagetry, technical innovation. Concern is expressed about the selection of projects, the resources of the foundation, making the projects a matter of public record. A suggestion is made from the floor that the questions that have been raised need more in depth consideration and that a panel or other methods of meeting be arranged. A request is made from the floor to have the charter of the new foundation read. (1) That is done.

(1) See Document XII

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21P-3

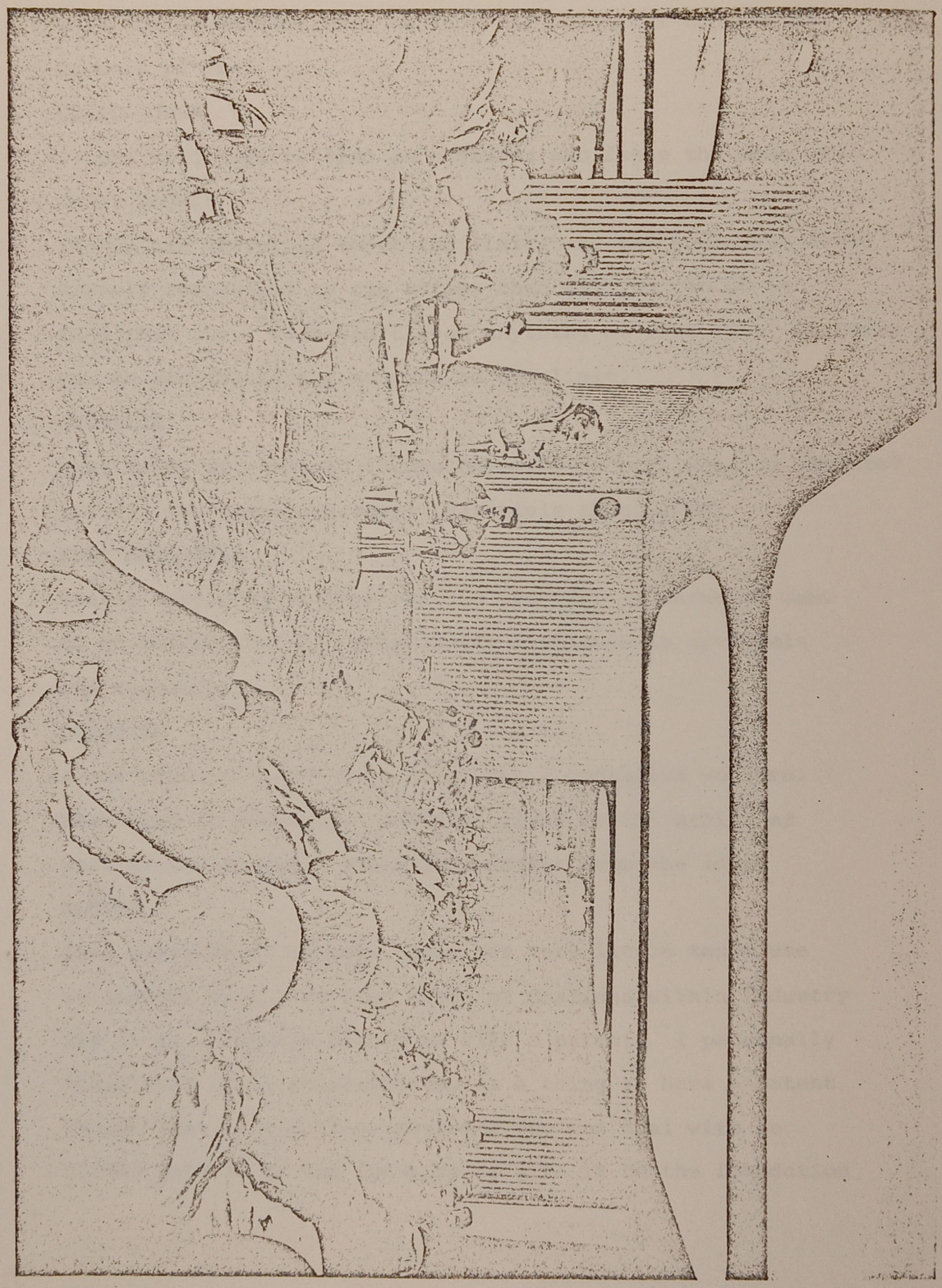
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351 W STINE ST.
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PHONE GRO

21P-3

Caption: Billy Klüver addressing
the meeting
Photo Peter Moore

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Will the foundation want to know the political content of my work of art?

CECIL COKER

...you will have to find an engineer who feels the same way.

BILLY KLÜVER

If you are concerned about the limits and the engineers feels himself threatened by the artist then all you can do is find that out. We haven't seen anything of that yet. Whatever you do you should try to push to the limit.

QUESTION

What types of advanced technology will be available to artists? Laser? New semiconductors? Materials themselves?

FRED WALDHAUER

That's very much what we want to provide. I think we want to go beyond what is commercially available in materials and techniques.

QUESTION

A new product could come out of the cooperative venture. What kind of protection could be given to the artist as well as the engineer who might benefit from the idea?

KLÜVER

This question of patents today has very little use to anybody except in some kinds of dealings within industry and it is extremely costly to file a patent. I personally think that it is uninteresting as a thing to have a patent except that it provides something you can deal with so either give it to the industry or give it to the foundation

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KLUVER:

I think that the basic idea that we wanted to contribute was the simple one of an artist and an engineer somewhere in industry. Plus, the intermediate aspect of the Hoboken situation, a place where equipment could be stored, to make the materials we have available to everybody and to expand the possibilities for the artists. There may be alot of problems about proprietary information, neeting with the engineer, the fear that this way of doing it is leaving it too open...

RAUSCHENBERG

It's really a matter of taste--about how closely you examine it. I think it's a social problem and I don't think it can be dealt with in terms of any plan. The foundaion, if it got involved in these kinds of moral contracts, could spend a lot of its talents, time, and resources by trying to be just; and from my experience with other foundations it is that kind of concern with detail that makes them ineffectual. The red tape is extraordinary but you have to have some kind of structure or you are not a foundation. You're not tax exempt and you can't get help from industry. We are

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going to have to have a very clear, convincing outline of what we stand for. We agree we want an organic organization as possible, ~~which~~ ideally, it would be a mass of engineers, money, equipment and everybody could run and get some.

QUESTION

How will this be related to the existing power structure of the organization. How is it going to evolve? Who is going to choose the rotating board?

WALDHAUER

The organizaton won't grow out of any power structure. It's got to grow organically from what gets done. What engineering and what art gets done.

RAUCHSENBERG

Actually from the needs you have yourselves because we dont' want this thing. That's why we are here. Why you are here. If it became that limited then we'd rather go the Long Island City route, or just call Billy Kluver.

QUESTION

Could we have a meeting between the artists and engineers fairly soon?

REPRODUCE ANNOUNCEMENT OF MEETING TO BE HELD (10-2)

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E.A.T. Artist-Engineer Meeting

A first bullsession and individual meeting between artists and engineers under the sponsorship of Experiments in Art and Technology, Inc. will be held at the Park Place Gallery, 542 West Broadway in New York City at 8 p.m. on Tuesday January 31,1967. You have indicated an interest in our attempt to establish a working artist-engineer relationship. Please come and meet the interested artists. We have at the moment about one hundred interested artist members and need more engineers to handle all the problems and to answer technical questions the artists have. Bring other engineers from your company as well as other companies. Copies of our first Newsletter will be mailed to you within the next few days. If you have any questions please call L.J.Robinson on 201 -582 - 6477. Thanks for your help.

Experiments in Art and Technology, Inc.
Box 253, Canal Street Station
New York 10013

210-2