TOWARD A LARGE-SCALE ENVIRONMENTAL PERFORMANCE

by
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Abstract

The theatrical experience can no longer be limited by the confines of a conventional performance space if it is to continue being fresh, lively and spontaneous. Today the developments in electronic imagery systems have broadened the language in the theatrical arena. As a result, performance can even reach beyond earthly communication.

In order to understand the role of performance outside preconceived notions of theater, it is important to see it in a larger framework. My proposal attempts a step toward the fusion of performance and environment. I hope to state the potential for "gestural statement" (within a performance framework) on a large scale.

One part of the thesis will be a written historical account of large-scale performance which has been integrated in the environment. The second part will be a performance of my own design-- the Woods Hole Inflatable Performance Sculpture (WHIPS).

Thesis Supervisor: Otto Piene
Title: Director, Center for Advanced Visual Studies

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WHIPS is dedicated to the memory of Charles S. Johnson, Nellie Lee Bok, Bessie Keller and Vincent Ruzicka.

Introduction

One: The merging of two disciplines

When David Smalley, my former sculpture teacher suggested that I venture to Cambridge in 1981 to see the Sky Art Conference, I was trying to develop my own work as a sculptor within the confines of traditional media at the Pennsylvania Academy of Fine Arts in Philadelphia.

When I left Briggs field at the Massachusetts Institute of Technology after seeing the lifting of Otto Piene's Blue Star Linz I realized I had witnessed the merging of two disciplines which I had spent my life pursuing; theater and all it elements had combined with a visual spectacle
and the result was a participatory theatrical event.

Here an audience was no longer the passive digestor of movement action and language, but had become an integral part of the process of animation so vital to those distinct element of kinetic sculpture.

Here for the first time I could transpose the theories of my acting teacher Morris Carnovsky, and combine them with theories of kineticism in sculpture.

Carnovsky instructed me in his approach to the

three elements central to the craft of the actor: the self; the object, and the action. Incorporating these three tenets within the structure of the event I had seen at M.I.T. brought my understanding of the relationship of kinetic art and performance to a higher level.

This was due, in part, because once airborne (aided by a combination of "the helium loops" and the human interaction) the object became dynamically small within the context of the sky.

A paradox was formed between the graceful movement of the sculpture, the power of the atmosphere and its meagerness in relation to the universe behind it; as a result the experience cultivated an environmental awareness...

My movement away from the confines of the theater-oriented performance and toward the large-scale performance stems from my need to create events which allow an audience to develop their own expectations which conventional theater
limitiations virtually exclude. Blue Star Linz presents an element of performance which is open, free and celebrative in nature; consequently, it is a real step in the direction of public art

By re-orienting the theatrical experience to a larger environmental context and thereby removing it from the artificial enclosure of the

physical structure of the theater, the artist can re-institue those characteristics so vital to expression on a grand scale; the celebrative element.

Two: Straddling the line between life and art

While I was in London , England in 1979 studying stage direction and stage design, I found myself uneasy about some of the fundamental principles contained within the structure of the theatrical process.

I began to wrestle with certain basic conventions such as the physical limitations of the "imaginary fourth wall" and the tacit undercurrent of Aristotelian drama the "willing suspension of disbelief".

By suggesting that the theatrical experience be expanded to an environmental scale I am supporting a tradition which has concentrated its focus on that element of the communication process centered around enlightenment.

It has been my experience that when an audience becomes directly involved (as in the case of the political demonstrations, religious, spiritual or ritualized gatherings) their collective level of consciousness/ enlightment is heightened.

Unfortunately the audience has become so conditioned in the expectations of conventions that entertainment (which granted is a vital part of the theatrical experience) not enlightenment has superceded any valuable communication that might be established.

This element of enlightenment is historically more associated with the realm of celebration than to the traditional theatre. It became evident to me that in the act of celebration there existed an element of performance and a hieghtened sense which more realistically straddled the line between life and art.

In 1952 when John Cage staged the "Untitled Event" at Black Mountain in what was later recognized as the first Happening he re-oriented the audience/performer relationship and thereby extended the performance framework into a potential vocabulary for the artist and, re-established an important link to innovative tendencies of the turn of the century.

Traditionally the artist working within the performance medium has abandoned the need for direct association with the literary-based trends in dramatic structure. In many cases, such as in the early work of Allan Kaprow, the differences between life and art were undistinguishable.

I have titled the thesis Toward a Large-Scale

Environmental Performance because large-scale performance is a process which develops in many levels over long period of time, and it is in the reaching for the goal of the final performance that the ideas begin to blossom. The body of work lies in the development of the ideas, not in the final performance. The Woods Hole Inflatable Performance Sculpture was in many ways a personal journey and a process of individual growth. And although the image I set out to obtain is one of the most important goals, it is only part of the whole process. In fact in many ways, it is in getting to that final image that is the most rewarding. To me the most valuable element of this project was learning how to work within a social organism, the village of Woods Hole. Finding the access to facilities, equipment, personnel and information was an important process and thus constitutes the emphasis on the developmental aspects of a large-scale environmental performance.

#1. Tidal Gesture, 7' x 41½" Oil pastel on paper

Establishing the Roots of Performance in Ritual

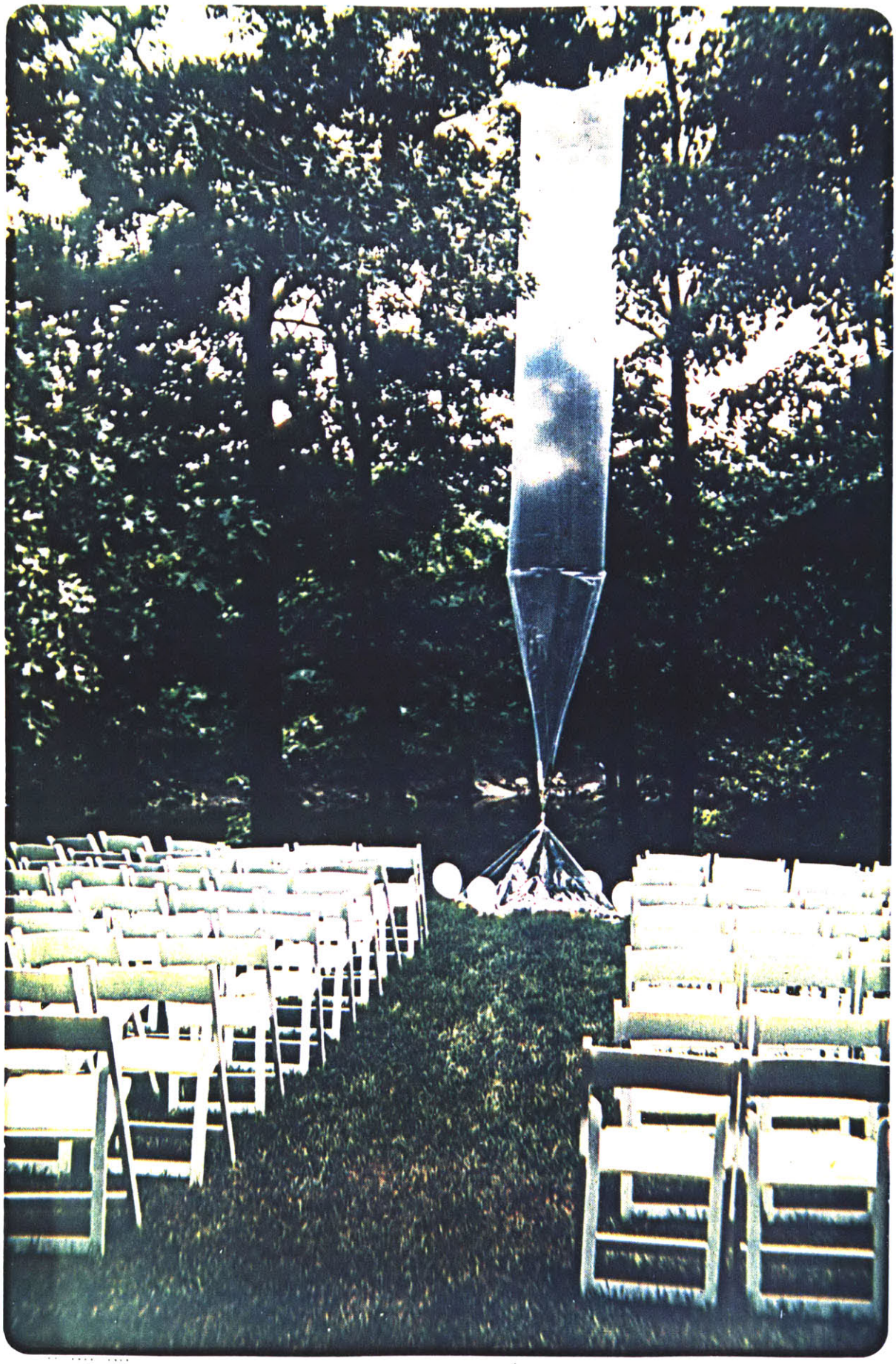
> What is the life-value of a gesture?... The gesture alone expresses life: but is it possible to express life?[1]

Life Ritual

As people go through the various stages of life, they are presented with a series of challenges which engage them in a unique relationship with others. These challenges include all rites of passage, for instance birth, adolescence, marriage and death. It is through the gesture, a simple act of communication, that we learn, develop and pass on to other generations the ability to understand these challenges as well as to perform them.

Our first rite of passage is our own birth. Not until we are able to recognize our role in such rites, do we begin to understand ourselves as performers before an audience. As infants, we are unconscious performers, improvising solely based on need. Our existence is predicated on attention from our parents, our first audience. The first ritualized celebration we will ever become a part of is our birthday.

Gradually we start to recognize ourselves as actors. we become more aware of ourselves as part of a family, a community, a world. Our birthday event connects us not only to previous generations, but it also affirms our own perception of our identity. Crucial to our perspective of the world, our birthday celebration ties us to the cycles of the calendar and connects us to habits of ritual. By connecting us temporally, the calendar enacted event helps define our relation to our immediate



#2. Chupa 20' tapered polyethylene tubing, helium, mylar tetrahedron, white latex balloons (land-based)

world, our past and our future.

The artist has traditionally been time-oriented and even perhaps time-obsessed (hence the art historical need to rely on mythical illusion). As Robert Smithson said in 1968 "the deeper an artist sinks into the time stream the more it becomes oblivion; because of this he must remain close to the temporal surfaces."[2] Joe Davis, A CAVS fellow, has said: " If the aim of the artist is to tell the truth, and if I use technology 500 years old, how can I tell the truth for my time?"[3]

Social anthropologists identify the complex of ritualized passages in terms of the individual's ability to achieve, develop and ultimately survive in a social framework. The ritualized activities and the customs that surround them provide a proving ground for the self. In these processes based in cultural, religious, social and personal development the individual's sense of self is elevated. Intellectual and spiritual elevation or enlightenment is most evident in two realms of spirituality; religion and art.

Emile Durkheim, the eminent French sociologist, suggested that religion shows the individual how to act. From religion, and its thoroughly developed system of moral codes the believer obtains the "necessary strength for right actions."[4]

According to Durkheim, this need for guidance in action is the crucial substance of the ritual, even in the circumstance when the ritual is not directly connected to the system of moral codes. In his view the ritual was a "heightened expression of the

interdepence of men living in society."5

Ritual may be described in many ways. In tribal cultures as well as technologicaly accelerated ones, the ritual may be seen as the means of organizing socialized customs, whether sacred or mundane, and connecting them to the ordinary world.

The ritual can be defined as the prescribed series of gestures or actions which in some way describe a code of behaviour that regulates social conduct. These gestures can be performed collectively or individually and can be presented in a ceremonial context.

Performance evolved along lines parallel to the ritual and the individual's need for personal enrichmnet through enlightenment. In seeking the origins of performance, one can speculate about prehistoric man engaging in the act of role-taking to increase the possibility of a prosperous hunt. It was most likely through some ritual that the first theatrical experience was born: The actor was the hunter and the audience was the unseen forces who, by seeing the performance would aid his needs.

The origins of the theatrical experience lie somewhere between the need and ability to render an illusion in order to imitate life, the need to communicate and the quest for enlightenment through some system of ritualized expression. Within the performance framework, the gesture is the key to enlightenment.

> Perhaps the gesture--to use Kierkegaard's dialectic-- is the paradox, the point at which reality and possibility intersect...the gesture is the leap by which the soul passes from one into the other, the leap by which it leaves the always relative facts of reality to reach the eternal certainty of forms. In a word, the gesture is that unique leap by which the absolute is transformed, in life, into the possible.[6]

The following elements are at the heart of the communication process: inspiration (I have an idea); an interchange between two entities (I tell it in some way to someone); and most important, a degree of enlightenment gained from that interchange.

In fact, if left to themselves, individual

> consciousnesses are closed to each other; they can communicate only by means of signs which express their internal states. If the comunication established between them is to become a real communion, that is to say, a fusion of all particular sentiments into one common sentiment, the signs expressing them must themselves be fused into one single and unique resultant. It is the appearance of this that informs individuals that they are in harmony and makes them conscious of their moral unity. It is by uttering the same cry, pronouncing the same word, or performing the same gesture in regard to some object that they become and feel themselves to be in unison.7

Given that the theatrical event is devoted to these principles of communication, it becomes quickly evident that the historically passive theater audience has been largely a non-participant in this communication process.

I am one of many who have been disillusioned by the conventions of a stagnant theater. "Starting around 1977, I began to distrust the theater a little bit, " said Meredith Monk in a recent New York Times interview. "All that hiding behind 'the fourth wall...'"[8] Out of this deeply felt distrust, artists have developed the strength to challenge stagnance and to re-establish a much needed connection between the audience and the performer.

> Performance has been a way of appealing directly to a large public, as well as shocking audiences into reassessing their own notions of art and it relation to culture.... Performance draws freely on any number of references--litereature, theater, drama, music, architecture, poetry, film and fantasy--deploying them in any combination.
>
> Performance manifestos, from the Futurists

> to the present, have been the expression of dissidents who have attempted to find other means to evaluate art experience in everyday life.9

There is equal importance in the ritual which exists in the non-illusionary context of day-to day life. Peter Kiddle coodinates the English "Public Works" a group with which he produces large-scaled performances using a "many-leveled combination of myth, archetype, theater, and populist entertainment."

He produces imaginary rituals such as "The Stones and the Share" (1979) using the people who live in and around the area of the performance as performers. "We take on the forms of ritual, ceremony, and spectacle in an attempt to share in and with the possibilities of the people's relationship to themselves, their geographic and social landscape and the active and imaginative world within which these relationships are contained."[10]

In the performance of rites of passage which concern the individual on a day-to-day basis such as those centered around adolescence, audience-participant responses vary in relation to societal, religious, cultural and personal needs and pressures.

In the United States, for example, the automobile is a symbol of success, both socially and personally. When a teenager is given a driver's license, it becomes a symbolic act, an open recognition by society of his/her identity. In the same vein, when we perform, whether in a

ritualized, theatrical, or day-to-day framework, we formulate ideas, images, and behaviors derived from our identities. Understanding identity provides a key to understanding ourselves within a performance context, and through the gesture information about ourselves is generated and transferred.

We also examine, assess and reassess our world not when we are performers but when we are members of an audience.

> Who is this Spectator? Also called the Viewer. Sometimes the Observer, occasionally the Perceiver. It has no face, is mostly a back. It stoops and peers, is slightly clumsy. Its attitude is inquiring, its puzzlement discreet. He-- I'm sure it is more male than female-- arrived with modernism, with the disappearance of perspective. He seems born out of the picture and, like some perceptual Adam, is drawn back repeatedly to contemplate it.[11]

Kurt Schwitters, in Merzbau attempted to deteriorate the separation between the spectator and the participant. By combining vast amounts of found materials on an environmental scale (all of these items, filled his apartment between 1923 and 1937) he created what he termed a "total theater"[12]

When Schwitters was placed into a British detention camp for enemy aliens he created for himself an area under a table which was to be his living quarters.

> Like pieces of Merz the trivia of sub-tabular occupancy, curtained by moving feet, are transformed in time, by

> day-to-day living, into ritual. Could we now say this was partly a performance piece in a self-created photo-gallery?13

Schwitters wrote about Theodore Van Doesburg and his dada performances of 1923-24 saying that the Dadaists would "do something unexpected."[14] Consequently Schwitters stood up at a dada program at the Hague and began to barklike a dog. He repeated this action with Van Doesburg several times, each time performing an act in response to Van Doesburg's challenge, each time changing an expectation of the audience. One time he blew his nose, for example, another time he recited a nonsensical pamphlet of Dadaist literature.

> The gestures are precise and could be briefly interpreted--'I am a dog, a sneezer, a pamphlet.' Like pieces of Merz they are collaged into a set situation(environment), from which they derive energy. The indeterminancy of that context is favorable ground for the growth of new conventions, which in the theater would be smothered in 'acting'.[15]

The first Happenings and the spaces in which they occurred were primarily non-theatrical arenas such as the warehouse, the loft, the vacant factory and old stores. The emphasis on a non-theatrical architecture helped the artist bring a focus to a non-illusionary, real-life performance.

> Happenings mediated a careful stand-off between avant-garde theatre and collage. They conceive the spectator as a kind of collage...his attention split by simultaneous events.[16]

I have always understood and analyzed performance in relation to the literary-based theater. But it has become important to create a distinction

between the literary-based theatre and its contemporary, Performance Art.

The early futurist performances of Alfred Jarry and F.T. Marinetti were based in large part on the dramatic structure set by the Aristotelian principles of "mimesis" (the imitation of an action). They still used a literary-based orientation complete with conventions of characters and scenes. What made them stand out as a challenge to what Erving Goffman has called the "social occasion"[17] was the attack on traditional social behaviour

When the main character of Jarry's Ubu Roi (played originally by the actor Firmin Germier) spoke the opening line: "Merdre", the audience was immediately challenged[18]. In a sense similar to the outrage that Igor Stravinsky had created in 1913 in Paris with his opening of the ballet suite Le Sacre du Printemp, Ubu had shocked an audience and created a new awareness.

When Peter Handke's Offending the Audience (Die Publikumsbeschimpfung) premiered in Frankfurt in 1966, a challenge was presented to the audience by the playwright. Handke has a series of performers addressing the audience in a way that would directly affect their expectations.

Although Offending the Audience was a play designed for the stage, its author's intent was to re-orient the relationship between the audience and the performer/participant. He attempted to shock the audience out of its normal passivity.

This ability to jar the audience out of its conventional attitudes first became evident in the early performances of the Futurist painters Marinetti, Boccioni, Carra, Severini, Russolo and Valentine de Saint-Point. They saw in the medium of performance a direct, immediate means of audience awareness.

> Performance was the surest means of disrupting a complacent public. It gave artists licence to be both 'creators' in developing a new form of artists' theatre, and 'art object' in that they made no separation between their art as poets, as painters or as performers.[18]

The basis of their manifestos was the instinctual need for the performer to have a great contempt for the audience. Handke's Offending the Audience is in the same tradition; he showed a need to reshape the audiences expectations as, in a similar way, Bertolt Brecht had attempted to cultivate a thinking awareness through his theory of 'verfremdung.'

Brecht felt very strongly about the traditionally passive audience, and with the use of his dramatic device of 'verfremdung' or alienation, he sought to alter audience awareness. Using descriptive banners, masks and signs he would create an environment in which the audience would be made aware that they were in a theater, seeing a play performed by actors.

To Brecht the most important element of the theatrical experience was that it led the motivation of the audience toward social action,

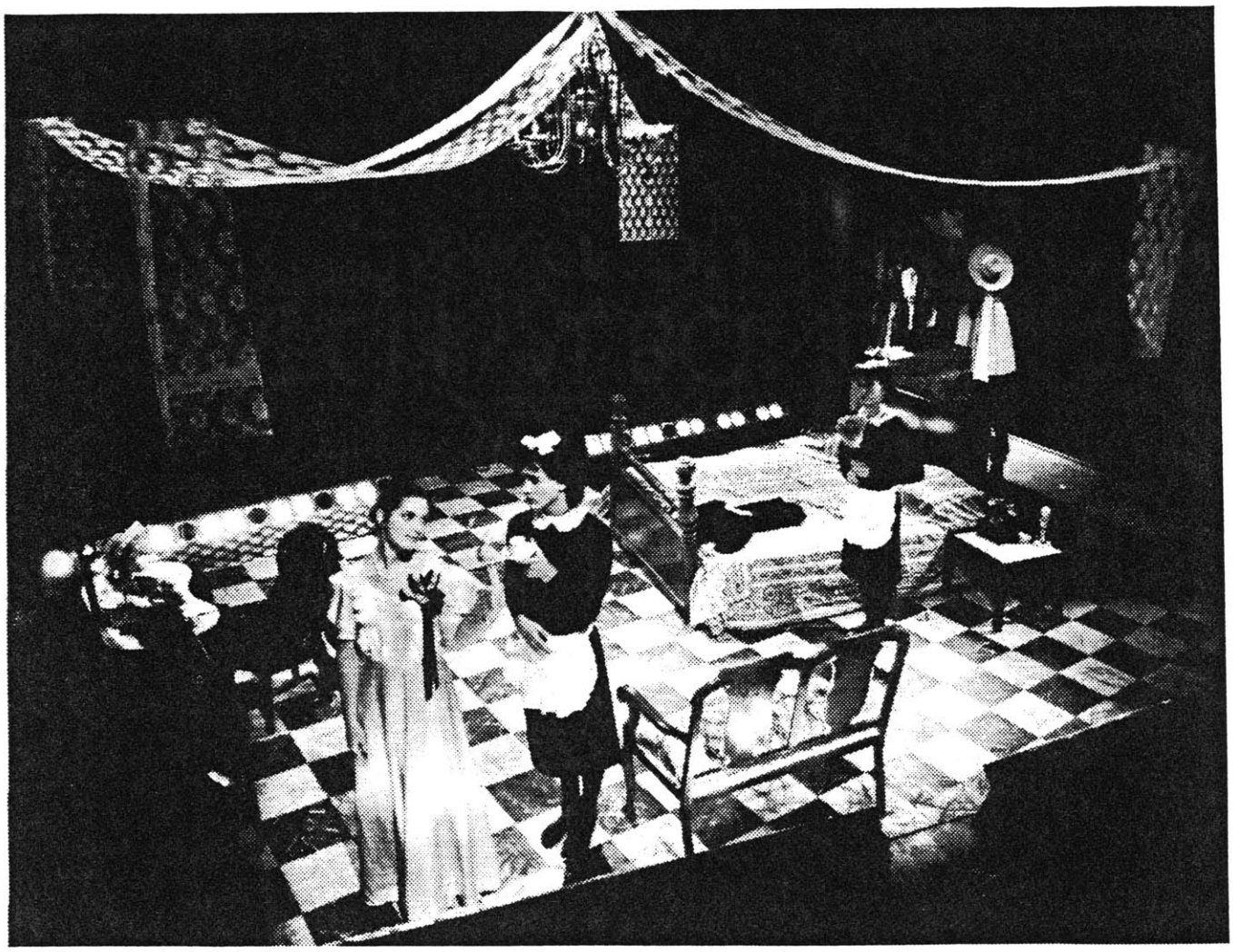
instead of the release of its empathetic feelings during catharsis. "I am not greatly interested in anyone makng an emotional investment in my plays," he said.[19]

Jean Genet took a step toward extending ritual into dramatic form in his play The Maids. This brief historical drama is based on the ill-fate of two French maids who conspired to murder their mistress. During the opening scene, Genet insisted on duping his audience into believing that one of the maids was actually the mistress. Contrary to Brechtian philosophy, Genet relied on the theatrical conventions of illusion as well as the gullibity of the audience to to explore deception and cruelty through fantasy.

The maids were originally played by women, against the wishes of the author. "If I were to have a play put on in which women had roles," Genet said, "I would demand that these roles be performed by adolescent boys...."[20] In my production of the play at Connecticut College (1980), I cast young men in drag as the maids and had them engage in an orgiastic ritual centering around the process of becoming "the madam."

It was not until the Happenings, formally staged, but without a developed Aristotelian dramatic structure, that the theatrical experience and the relationship between performer and audience was reassessed.

The nature of the avant garde movement, whenever it exists, is that experimentation is paramount.



#3. The Maids by Jean Genet, Palmer Auditorium, Connecticut College, 1980

> Just as quantum mechanics and the theory of relativity sought to explain events in terms of both space and time as dimension, so the painter blew out painting and theater by extending the idea of space from a flat canvas into a performance area where actions manipulations of objects (including humans) transact sequentially.... Robert Rauschenberg and Robert Morris trans- connect time-space as theater events in which paint, objects, light, sculptures forms and human beings all become objects or transformers.[21]

In many ways it seems logical that the artist extended his/her ability and need to communicate into the realm of performance.

> In 1961 after years of comparative neglect Len Lye was given an evening at the Museum of modern Art, New York, where he displayed 'his tangible motion sculptures' in performance. Like Scriabin's keyboard and Wilfred's Clavilux, they bridged the dwindling gap between art and theater.[22]

According to Douglas Davis in Art and the Future, Lye's pieces such as The Loop and Ritual Dance had qualities which because of their kineticism created a sense of sculptural drama. This drama was not related to literary drama, but, instead focussed on movement, placement, shape, form and time. Reorientation of an object which could exist in its own framework allowed the kinetic sculptor to create pieces which, through their animation, took on a life of their own. "At the end of each day, the entire group was programmed to quake and roar together, as a chorus."[23] It has consistently been the role of the artist to challenge conventions. In the theater, however, the impetus toward profit-oriented stabiltity--the development of the spectacle (for spectacle's sake) as well as the

persistent reliance on the conventional dramatic structure--is very wary of innovation.

The innovative nature of the Happenings and other related events begun in the 1960's represents the attempt by the artist to break traditional expectations associated with the theatrical experience. Artists such as John Cage, Allan Kaprow, Joseph Beuys, the members of the group Fluxus, Charlotte Moorman, Wolf Vostell, Manzoni, Yves Klein, Meredith Monk, Otto Piene and others have deteriorated the need for literary connotation, meaning, rationality or cohesion in theatrical presentation.

The happening replaced the conditioned passivity of an audience with an active immediate response system. "Many Happenings had preset instructions to indicate a course or program of events and often 'roles' were assigned to the participants."[24] Structure therefore, was not absent; it was in integral part of the process of the event.

Instead of depending on a theatrical series of constructs, which are tied to a literary base Happenings created a cicumstance whereby the participants, through spontaneous interaction "generated relationships during the performance."[25]

The Happenings relied on a large degree of improvisation which, like the renaissance Commedia del Arte troupes, could only be effectively used within the structured outline of events.

> When improvisation is used within a field of fragmented (specialized) variables, the

> result is a trans-literal and trans-technical effect, because the way the variables are assembled changes with each performance, as does the structure between the form and content. In this way indeterminate points of view or interpretations are viable rather than eliminated ,thus, performing is structured like a game with unspecified results; in this way the range is open, public and plural rather than specific and private.[26]

Theater audiences have traditionally been "specific and private." Certainly today commercial theater is more private than public because of the prohibitive price of the entrance ticket.

Electronic media (television, video, radio and cable system programming for example) has become more accessible to the world-at-large in the past decades and, as a result has removed our need for theatrical enrichment outside of our livingrooms. It is through the large-scale environmental performance that we can begin to revitalize the celebrative qualities from which the theatre originally stemmed. It is by looking at Performance--an element of the theatrical experience --and Ritual that we can develop a greater understanding of ourselves, our environment, our beliefs, our customs, our world.

The Procession

What is an environmental journey?

All of the events that make up an individual life constitute a journey. In the recollection of the events of our personal journeys we construct and reconstuct feelings. We remember our individual journeys in conjunction with the environments that surrounded us.

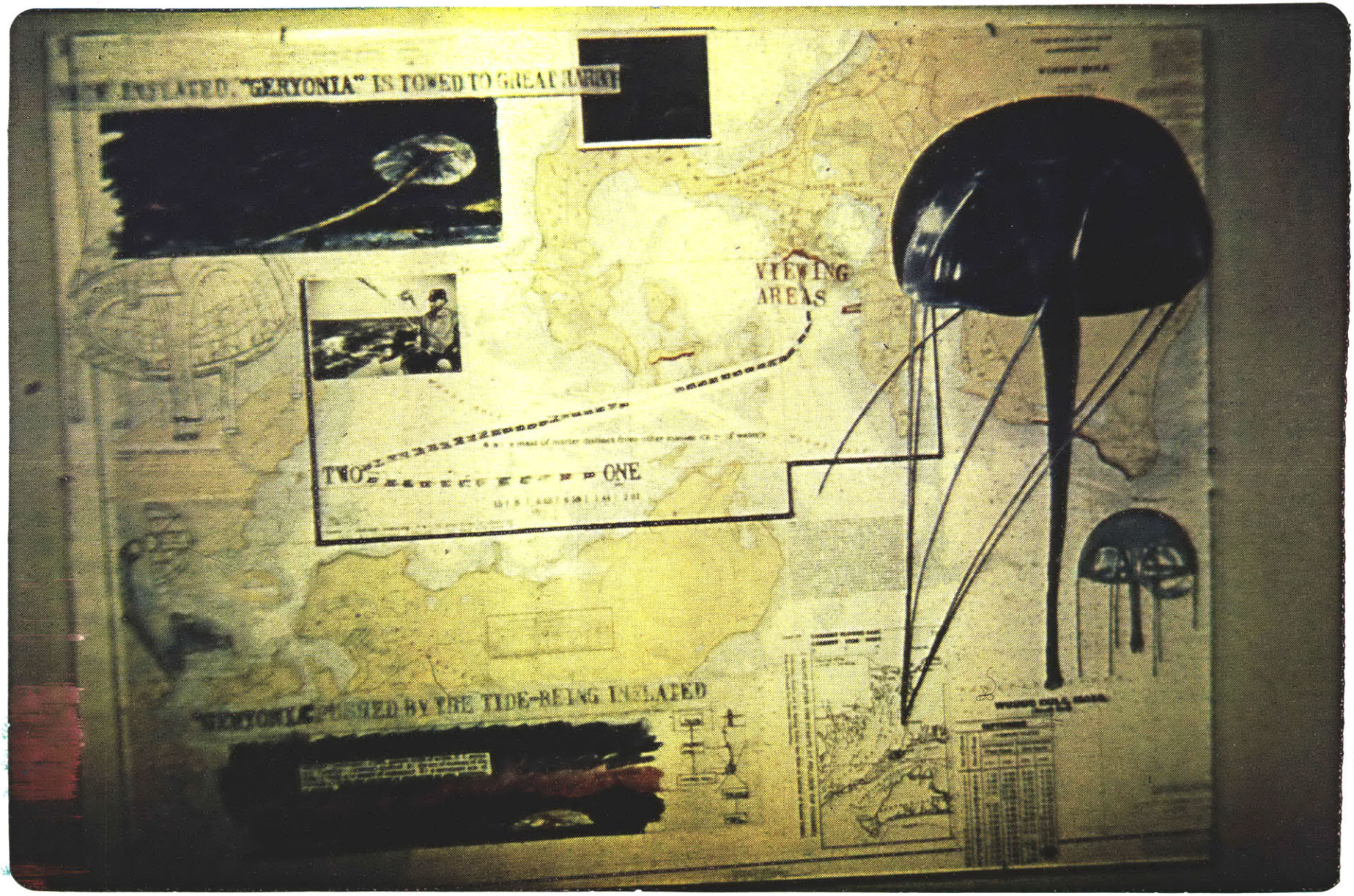
> The environment that is of concern to us is not itself located anywhere, it is the background to all locations directly accessible to us.[27]

On an environmental journey one becomes aware ofthe surrounding forces that encompass us. The Woods Hole Inflatable Performance Sculpture (WHIPS) represents such a journey for me. I used the tidal currents of two interconnected bodies of water and the surface winds above them to focus on the kinetic interaction between these two environmental elements. I chose the Woods Hole Passage for sentimental and metaphoric reasons ("Love of one another is closely related to love of place.")[28] and with my Cyclosalpa sketches have begun to address issues concerning gestural statement on an environmental scale.

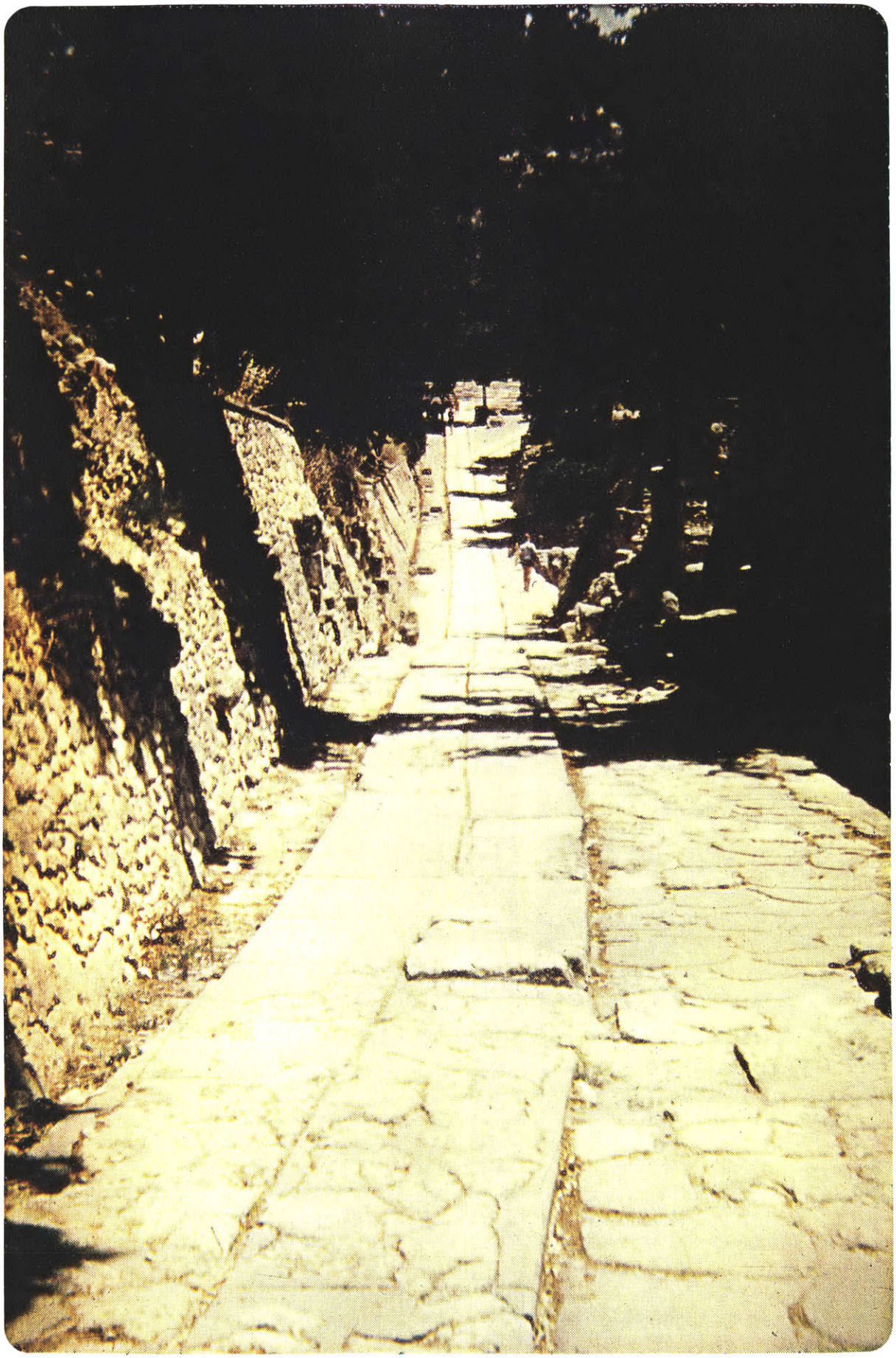
Richard Demarco, a Scottish artist "turned arts administator/organizer/spiritual tour guide" leads a yearly voyage to explore sites whose historic relevance uncover the origins of European culture. "The journey 'seeks to relate spiritual dimensions to those of time and place....[in order to] reclaim the spirit of the place.'"[29]

I used the nautical chart of "Woods Hole and Approaches" as a visual script for WHIPS. In the WHIPS CHART I formed a collage combining images that I had compiled from different sources including Dr. Larry Madin's photograph of geryonia probiscidalis (xeroxed images of the neurological structure of the jellyfish) drawings I had made of the event; demarkation of potential viewing areas as well as for the performance course; tidal charts specifying which day the event would take place and which cycle of the tide would be used as a kinetic element (a metaphor for transition); photostatic copies of dictionary defintions such as that for body "a mass of matter distinct from other masses (as in a body of water)"; an aerial photograph of my grandmother's house on one of the abutting pieces of land; and finally a picture of myself sailing my father's boat "Nepenthe."

The procession has historically been a form of an environmental journey, often enacted on a large scale. When I had the opportunity to visit the Cretan Theater at Knossos this past summer I was very interested in the great architectural differences between the Cretan design and the more well-known amphitheater of Greece. The Cretan theater was primarily a processional, with a seating arrangement at the end of the processional focussed down the path of the processional route. In contrast, the Greek amphitheater, such as the one at Epidaurus which is still in use, has a circular orientation. (Pageants probably originated in the linear movement created by early theater sites such as this.)

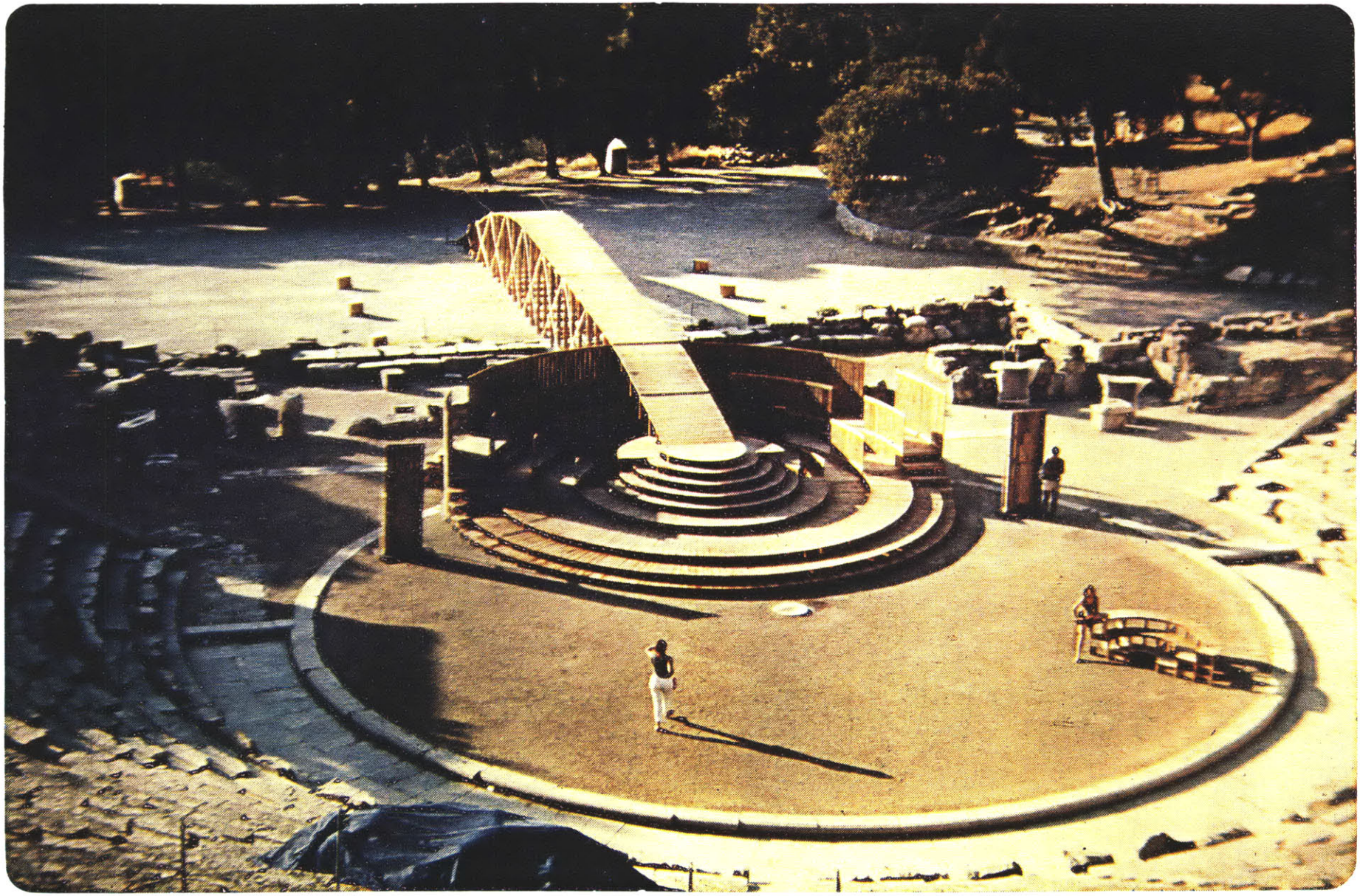


#4. WHIPS Chart 36" x 46" collage of photos, charts, drawings, xerography



#5. The Cretan Theater at Knossos, near Heraklion, Crete

#6. The Approach to the Temple of Athena, the Island of Delos, Greece



#7. The Amphitheater at Epidaurus, Epidaurus, Greece

The earlier one, the Cretan, was presumably designed for ceremonial offerings to royalty; the latter, about which much is written, centered on the development of structured drama. In both, however, there exists a celebrative element. The dramas performed in the amphitheater had highly structured form which dictated conventions for costumes, entrances, action and characters. Masks called onkoi helped the actor project over the difficult distances, and platformed boots known as kothornoi increased their size,and, therefore, visibility.

The Greeks also had processionals and they too were oriented toward the large celebration. On Delos, a small island west of Mykonos in the Aegean Sea, there would be yearly competitions. As a precursor to the Olympics, these large competitions would gather people from all over the Mediterreanean area. At the highest point of this island there was a temple dedicated to Athena. Every year, to mark the opening of this competition, a long ceremonial procession up to this temple would occur. The distinct difference between the Greek processional and the Cretan precursor was in orientation toward the audience. The Cretan focussed toward royalty, the Greek toward the diety.

The Director and 600,000 performers

In a modern version of the procession, film director Richard Attenborough accomplished an incredible large-scale environmental journey when he filmed Mohandas K. Gandhi's funerary procession.

The Rajpath, New Dehli's major ceremonial thoroughfare, was the site for this large scale performance which occurred exactly 33 years after the death of India's great spiritual leader, Gandhi.

"The preparation itself started six weeks before the actual shooting," according to Terence A. Clegg who was the production chief for the film. "We invited the public to come and take part. We advertised on radio, television and in the papers. We also sent actors around to the various cities to help broadcast the invitation. Everybody is passionately interested in the cinema of India, so we counted on that to attract the numbers of people to shoot the scene."

At 6.a.m. there were 10 camera crews at set up along the Rajpath, which was offically closed that day for the performance of the funeral procession. By 11 a.m. it was estimated that a mass of 600,000 people had gathered. There was a "controlled crowd" of 98,000, all of whom had rehearsed for seven weeks before the filming, as well as, 20,000 paid participants playing mourners, pall bearers and other members of the procession.

The crowd's costume had to be in accordance with 1940's style Indian attire, so although the dress had not changed too much, those whose shirts were too modern had to be re-dressed before shooting. When working with a crowd of this proportion, however, such an exchange becomes an overwhelming task. "We had them go through pens and take off

everything that didn't fit in," said Attenborough in a recent interview. "We had to buy the stuff they were wearing....When it was over, we gave the clothes we collected to charity."

The real difficulty came in the orchestration of the moements of the 600,000 people. "We put everybody connected with the production including Attenborough and myself into costume so we could blend into the crowd, "says Clegg. "Attenborough was an army general and I put on an army bush shirt and took charge of a camera crew made up to look like they were shoooting a newsreel. We comunicated with each other using concealed walkie-talkies. We were actually able to control things that way without too many problems."

Incredible as it may seem, this funeral procession was completed within a single day. We'd move the procession a short distance," says Clegg, "then we would have to stop it while we reorganized for the next sequence of shots. As the procession passed by, the camera crew would move around the back of the crowd to their new positions ahead. But we were able to move a mile and a half during the whole course of the day to get the shots we needed."[30]

Light and the Environmental Journey

Light has always been a vital element of the environmental journey. Let us examine the architectural uses of lighting in the context of the sacred journey.

The approach leading up to Queen Hatshepsut's mortuary temple at Dier el-Bahari is set perpendicular to a 300 meter cliff. Its placement into the face of the cliff is significant, because of its integration with the natural setting. One is not merely entering a temple, but taking a journey into the earth, moving from a lit open environment into an a progressively darker, more enclosed architecture.

The major approach ramp is an axis which symmetrically bisects three colonaded terraces. There is an attempt to imitate the majesty of the abutting cliff with the horizontal and vertical rhythms of the pillars of the collannade. But most important is the lighting of the processional route into the sanctuary.

The importance of lighting is also true in pylon temple where the processional route is a bisecting axis through the center of the temple, focussing movement from the lit world outside the temple to the sacred enclosed unlit interior of the inner sanctuary. Only the pharoah and the priest were allowed to enter the inner sancutary; very few were even allowed to enter the intermediate colonnaded hallway called the "hypostyle" hall; the majority of the people were only allowed as far as the open court, just within the pylon wall. The pylon wall

itself was a very high wall at the entrance of the temple which stands as a separation between the sacred and the profane worlds.

The ziggurat is an earlier example of the architectural integration of the procession. Since religion was the dominating element of Mesopotamian life, its religious architecture became the central focus within the plan of the city. At of the apex of the ziggurat at the end of the processional stairway, is the sanctuary.

Unlike the Egyptian pyramids, where the processional focus was internal as opposed to external, the ziggurats were designed to connect the individual with the deity. This religious-architectural entity connected the earth to the sky with a series of tiered stairwells ending at what were used as spiritual waiting rooms or 'rooms one passes through.'[31]

The internal focus of the pyramids at Gizeh excluded the world of light. The nature of the tomb is one based on privacy and permanence.

> The Egyptians were so uncertain of their celebrated (and intensely desired) eternity of life they had to make sure that (at least) their celebrative media (pyramids, "monumental" statues) would last 'forever.'[32]

These monumental tombs were similar to the earlier the ziggurats because of the architects' concentration through material permanence on the eternal. Through the spiritual doors of the ziggurat temple was the god of eternal life In the pyramids eternal life was achieved by architectural encapsulation. The processional

entrance complete with its deceptive false chambers and (at least in the Pyramids of Khufu and Khafre) with the connecting causeway between the valley temple and the mortuary temple emphasized the permanence of burial. Light in the interior of the valley temple would be at a minimum; it would filter in from any inconsistencies in the masonry. and, therefore, a degree of solemnity would be created.

Lighting has always played an important part in the ritual. In certain primitive forms light is created with fire: the sacrificial fires on top of Mayan temples, the burning bush and the carving of the Ten Commandments, American Indian funeral pires, the menorah Shamas, the Eternal Light over the grave of John F. Kennedy, and the torch of freedom held by the Statue of Liberty at the entrance to New York Harbor ("I lift my light beside the Golden Door...) .

In other circumstances, the light may be celestial as in the archaeoastronomical perceptions of the Mayans:

> At Copan, one of the most enchanting Mayan ruins, astronomer-priests carefully marked the sunset of the day the farmers were to start their agricultural calendar....The people of Copan believed that when this annual solar event occurred, it signaled the god's permission to the people to cut and burn the bush left over from the previous years's harvest. Only then would all be in order for the planting ahead....On a date conveniently arranged by the gods to fall within 20 days of both solstice and zenith passage, the agricultural season officially commenced. The buildings in the valley were also oriented in the sacred direction[West]. Thus the religious center of the

> terrestial world could function in harmony with the spiritual world of the heavens.33

A primary principle of Quakerism, founded by George Fox, is that contained within each person is an individual "light." It is through this "light within" that the individual communicates to God, is inspired and during the weekly gathering passes this information to others.

For Jews, the eight-day celebration of Hannukah is the Festival of Lights commemorating the rededication of the Temple of the Maccabees and its Eternal Light following their victory over the Syrians. The Eternal Light represents the presence of God and as a holy symbol is never to go out. Therefore, it was considered a miracle that the oil in the lamp at the Maccabbean temple was not extinguished over an eight day period during which it was impossible to get more oil. To symbolize this occasion, a nine-stemmed candelabra (a menorah) is lit.

While developing light as a kinetic art form, Otto Piene experimented with performances called "Light Ballets" in Germany in 1959. Other members of the group ZERO such as Mack and Uecker, as well as Schoeffer, Malina, Wilfred, Turrell, Eldred, Hauptand those from the earlier Bauhaus, have developed the possiblities of light as a kinetic medium.

Boston based artist Michael Timpson designs and builds environmental journeys as installations. In his recent installation at the Boston Institute of Contemporary Art entitled BE THE BOYS!, he created an installation for worship which conveys a strong feeling of sacred space.

The viewer enters the installation along a gravel path in an enclosed hallway with a cathedral ceiling. Both ceiling and pathway are elements of an architectural vocabulary he uses frequently. At the end of the hallway, one turns right and realizes that the path leads to what seems to be an altar. On either side of the path is a tiered amphitheater-like structure upon which are placed large stones atop small clutches of straw or hay.

The small amphitheater faces a wall in the center of which is a wide-meshed wire opening which acts as a proscenium. There are a series of loaves of bread placed beneath this 'proscenium' on a shelf. Behind the screen are two cloaked people sitting beneath dripping buckets of water. For a lighting element, Timpson uses simple safety lights made of red plastic (another consistent part of his vocabulary) and, as a result, they cast a red glow in the sanctuary creating a powerful theatrical effect.

He relies on objects and associations which have a direct symbolic relationship to his own religious upbringing in Ireland. The architecural language he has created centers not only on symbolism, but on the importance of movement through space; in BE THE BOYS! it is an inexplicable sacred journey filled with a ritualized reverence for the earth,

for man and for his built-in fears. Here the "natural environemnt" is witness to the phobias of mankind.

Sacred Scale

The dynamic human image in the landscape.

Images represented in the landscape can be dynamic especially when rendered on a large-scale. Size has often been a charateristic of deification. The Bible insists that man was created in the shape of God, and at the same time tells of God on a scale and size seemingly unimaginable.

The Egyptians rendered icons of their emperors on a scale that was truly phenomenal. Abu Simbel is the physical deification of the Emperor Rameses II. As a large-scale image integrated into a natural setting, this gigantic sculptural icon challenges the viewer to reassess man's size, strength, durability and permanence to a degree that suggests that he is greater than a man and closer to the gods. With this sculptural apotheosis Rameses II had attained, through the test of time, an immortality second only to the gods themselves.

On a mythological basis the gods have always been descibed in dimensions that span galaxies. (Uranus, Jupiter, Venus, Mercury, Pluto,etc.) The Hollywood myths such as King Kong and his Japanese counterpart Godzilla are examples where fear is a part of our perception large size.

At the same time, something very small can have a

significance which elevates it to a level of the sacred. When I travelled to the small mountaintop temples on the island of Naxos, I was very effected by tiny objects placed next to pictures of Jesus such as buttons, little trinkets or figurines of little men one or two inches high. Or by the road side shrine (slightly larger then a breadbox) containing small burning candles, photographs, money.

One of the seven wonders of the world was the Collosus of Rhodes. This imposing statue supposedly stood several hundred feet high at the entrance to the major harbor of Rhodes. It too represents gigantism in the environment, due to its supposed awesome dimensions. Like the English large-scale land form the Wiltshire Man, the Easter Island heads, and, on smaller scale, the collosal heads of the Olmecs the Collosus's god-like size was a large-scale image placed in the landscape as if by sacred forces. The large figure at the entrance to Rhodes must have seemed miraculous from the perspective of the distant sailor; one thinks of the mystery that surrounds its placement and construction with a feeling of the sacred act which could ony have been created and completed by the Gods themselves. (The integration of religion into those early societies made possible those beliefs.)

In our own culture, there are traces of attitudes toward the sacred surrounding our presidents. The portraits on top of Mount Rushmore, for example, have become monuments on the scale of a mountain and in that view of monumentality these men through time and leadership have attained a certain

'untouchability.'

On an even greater scale is the dimension as well as scope are the celestial 'Heavenly Bodies.' The stellar arrangement of Orion, for example, reveals the human image on a scale that was originally understood as an embodiment of those who through mythology were deified .

C.A.V.S. graduate student Walter C. Dent's THE ANNUNCIATION is a photographic image which explores the power of the sacred world and the invisible scale of the broadcast television. By placing a levitated girl in relation to televised evangelist he raises interesting and important questions the scale of the air waves and the electronic broadcast message.

With a similar orientation towards the sacredness of the television, another C.A.V.S. graduate student Jennifer Hall has created TV ORIFICE , one in a series of altars. "I see the televison as an American shrine, so the television has been gold-leafed and sits up on a pedestal the way all good shrines should....Watching T.V. is like seeing through a window into another space... you can go inside it or it can be coming back out at you, either way you look at it the pulsating 'clots' are really a quantum leap betweeen those two realities." Her TV ORIFICE consists of a gold-leafed monitor showing pulsating computer-animated sequences on a video loop.

To understand scale one must see beyond the relationship of physical size and dimension. Scale can imply scope as well as size. In a recent exhibition at the Institute of Contemporary Art in Philadelphia, Laurie Anderson displayed an installation which raised visual questions about the nature of scale.

Ever since the sculpture as an object was taken off the pedestal and placed on the floor, it took on a different relationship with the viewer. By sharing the same space, no longer separated by a convention which alienated the object from the viewer, the sculpture becomes accessible.

Anderson placed a small clay figurine of a woman seated in a chair on the floor of a darkened room. The sculpture is approximately four or five inches high and is immediately opposite a small film projector. This projector shoots an image of a woman (Anderson herself) onto the figurine six or seven feet away.

By projecting the filmed image of herself talking in an arm chair onto the clay figurine, Anderson had animated an otherwise stagnant object. Animation, however, is secondary to the interesting juxtaposition that she creates in terms of the viewer's orientation toward scale.

The viewer towers over this five-inch sculpture. But because it is a moving human image, we are thrust into a situation that forces us to re-evaluate dimension and space. The relationship between the audience and the performer is very powerful in terms of dimension. Instead of the

performer being placed into the larger physical arena of the conventional theatrical space, and therefore, made to be larger than life in an epic sense, Anderson has transformed a real sense of scale and reversed it into an imaginary almost surrealist one.

This clever placement of performer and audience is merely one in a series of techniques which allow the performer to communicate his or her ideas.

Film and other projection media have been used with in a performance context in many instances. Although primarily known for his opera scenography, Josef Svoboda has in many ways pioneered the use of cinematic techniques for integration with large-scale (theatrical) performance. In his 1979 production of "Coquelico" in New York, he used film in a way which creatively combined two and three dimesional performance.

The opening scene is a film projected onto a scrim and takes place on a fjord. The camera follows a large egg on its way down the fjord. Slowly the egg comes closer and closer to the camera, until it is right up to the lens where it cracks open. As the egg opens, two clowns appear through a thin slice in the scrim which is unnoticeable to the audience. This division parallels the crack in the egg creating a captivating illusion.

What scenographer Svoboda accomplished was to combine a two-dimensional imagined theatrical boundary with a three-dimesional realism. The story for "Coquelico" is an allegory about the fantastic lives of these two clowns. In using this

device for creating the illusion of fantasy, Svoboda has been able to bring a level of continuity and believability to performance as well as be able to extend a degree of fantasy into a scale which prior to it was limited primarily to the cinematic medium itself.

Svoboda has also worked using laser projection systems for his production of Mozart's The Magic Flute . In fact he was the first to use the BL 70 stage laser (the first of its kind) for the production which was staged at the Munich Opera Festival in 1970 at the Bavarian State Opera.

> Accordingly, a stage picture...must develop dynamically in the time continuum in the same way as the stage action. and it is just this requirement which is ideally met by the stage laser. The images develop dynamically. The freeedom the instrument has in the shaping of detail appears just as desirable to me as the freedom the actor has in every performance to shape the details of his part.[34]

For the videotape The Face of the Earth is Much Like Mine, I worked together with a poet,Matthew Gilbert, to combine a poetic statement with visual imagery concerning an earthly scale. In The Face of the Earth, I constructed a 25" plastiline mask of a man (inspired by and compiled from La Caricature Journal [no.71] Masques de 1831) and placed the mask in an antique bed. I also built a body for the man made out of an Egyptian caftan stuffed with newspapers and magazine clippings of radar images of the earth.

I then began to animate the man with the help of C.A.V.S. fellow Betsy Connors and others from her Video Animation Class. Using the animation function of the Cezar Editing system we could make this man fall asleep and then have him enter a surreal dreamscape. With the electronic methods of chroma-keying, we could interface images of the earth from Shuttle Infra-red photographs and superimpose them onto the face of the man.

One of the most exciting parts of this visual experimentation was that I could align certain elements of the man's face with detailed elements of the infra-red photographs. The mouth of the man would, for example, line up with a curving river.

What I had been attempting to do with Gilbert was to create a written framework, a poem, which I would place into the final videotape. By avoiding the traditional forms of drama, where in countless examples the text dictates the entire direction

the piece, I was trying to make an assemblage or collage using the script as one of the formal elements in a visual/ aural tapestry.

In our pursuits, Gilbert and I decided to use those elements in our language which directly or indirectly imply an anthropomorphizing of the earth especially figures of speech relating to body. For example, "all over the face of the earth," or "in that body of water", "finger lakes", or "a bald mountain." With this in mind, together we wrote the poem The Face of the Earth is Much Like Mine:
(Excerpt)
My iris blue pools
stir gusts of salty air ;
seductive and immense.
And, in the simulatneous sigh,
we seem to say
the face of the earth is much like mine

The Face of the Earth is Much Like Mine is a work in progress. As it stands now, there are several scenes which have been compiled and consist of an initial sketch of the original sequences. I had storyboarded the opening animation sequence but found that some things changed when I began to work in the Experimental studio at M.I.T.'s Educational Video Production facilities. The opening sequence is of the man falling asleep, and subsequently waking up, disturbed by flashes of himself.

When this restless sleep finally ends, the viewer sees the man slipping into the world of his electronically generated dream. The changing of the sequences is highlighted by the use of the internal keying function on the switching control

panel. The viewer sees the face slowly disappearing in a blue haze.

The next series of images shows the face in different angles (from a frontal view to a profile) and it is once again keyed onto macro and micro images of the earth. The man's eyes blink in slight disbelief and awe as his face jumps between the two environmental scales.

There are images of the face with the parched earth; of the earth in black-and-white as if the viewer were peering from an ionospheric height; of the faced superimposed on a basal section of Calcite (compiled by Professor Kepes in his book The New Lanscape) onto a profile of the face. There are recent images (which have yet to be added) in which wooden masks from Mexico ca. 1958 and a woman's face [Sarah Gietz] is superimposed onto the black and white image of the earth.

The sound track started from an idea that I had of combining the sound of a sigh with the hush of the wind. By manipulating one of the editing systems at E.V.P.,I recorded soundtracks from an original video backwards. I tried to create an aural sensation that was close to what I was after through a process of layering .

The sound of the wind sighing is ultimately how I wanted the words "the face of the earth..." to sound. I had recorded onto videotape Uriel Levi's voice saying the poem and when I had layered it enough, I finally achieved my desired effect. When I did discover this sound, however, it was almost a frightening experience.

#8. The Face of the Earth is Much Like Mine Video Still

It brought to mind my own childhood memory of a nightmare: I had dreamt of a monster of such immense size and scale that I was forced in a to run out of my room and down the hall to my parents, where I kicked open their door and, in the horror that can overcome one in a sleeping and panicked state began to wave my arms up and down. With my paralyzed mouth I began to make groaning sounds. I knew subconciously what I was saying; it was a description of the terror that was pursuing me. All that came out though, was a frustrated blur of gesture and noise.

In many ways The Face of the Earth... was an important step for me in dealing with large-scale performance. As a medium capable of broadcasting, videotape has the potential for large-scale application both in real dimension (as rendered on an collosal architectural scale in the science fiction film Blade Runner,or more accessibly in video and laser projection systems, or even in digitized scoreboards like those used for large-scale concerts), and in its possibilities of expansion over great distances (seeing the astronauts from the Moon).

At the same time, using images of the earth as a medium, has enabled me to think about size, scale and distance as real performance entities.

Understanding the scale and size of the earth varies with each perception of it. The earth can be seen as 'a small world,' as when travelling we meet someone connected to our home lives; or it can be considered vast, in light of networking systems

#9. The Face of the Earth is Much Like Mine Video Still

such as modern telecommunicatons. Gaston Bachelard's discussions on space reveal his interest in the miniature perspective and strike a certain similarity to the orientation in the man in The Face of the Earth:

> ...being-in-the-world and world-being are too majestic for me and I do not succeed in experiencing them. In fact, I feel more at home in miniature worlds...And when I live them I feel waves that generate world-consciousness emanating from my dreaming self. For me, the vastness of the world has become merely the jamming of the waves. To have experienced miniature sincerely detachs me from the surrounding world, and helps me to resist dissolution of the surrounding atmosphere.[35]

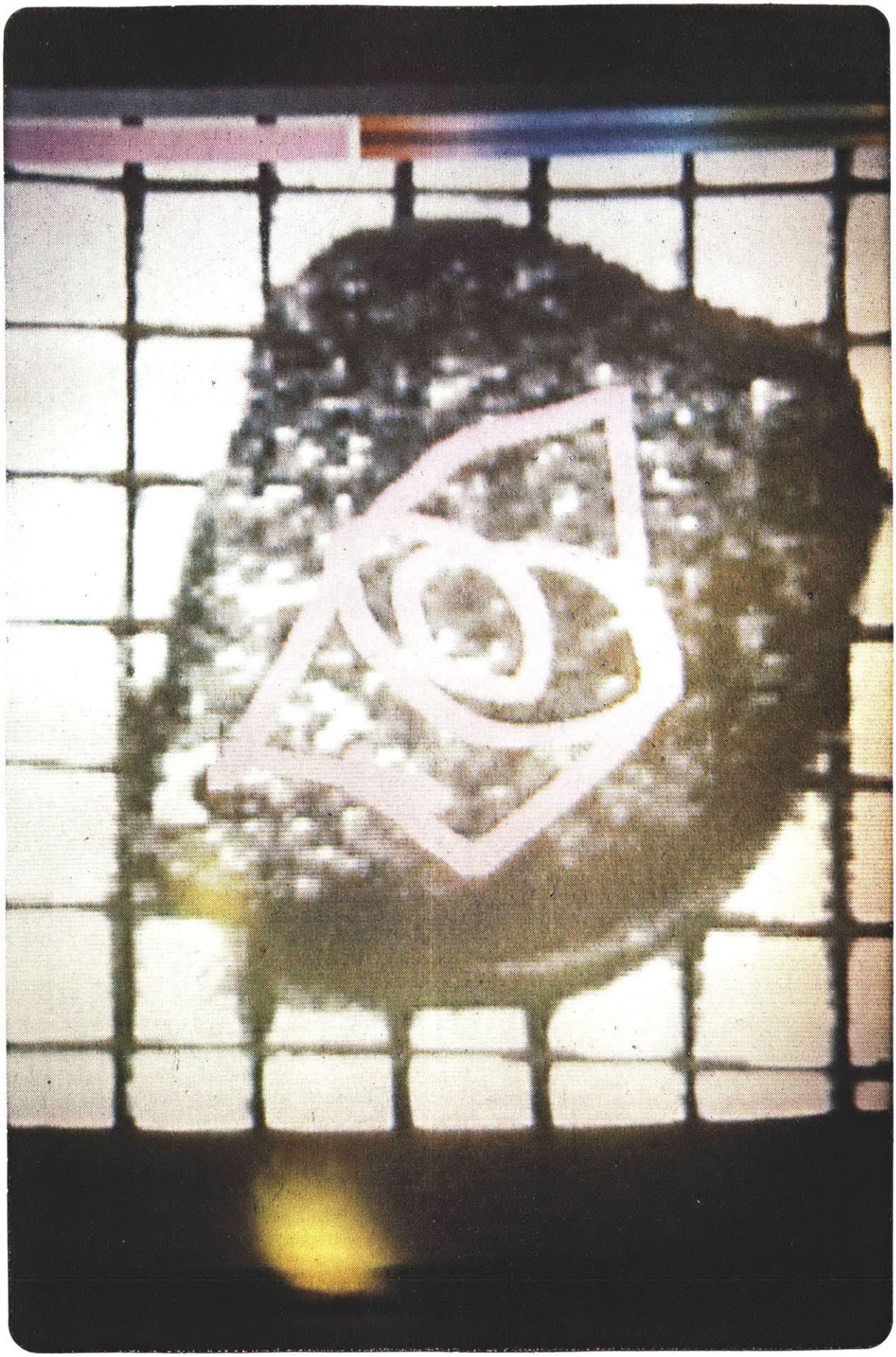
In the spring of 1984 I had the unique opportunity to work with C.A.V.S. fellow Joe Davis on the first long distance remote laser carving. In this undertaking Davis linked two cities via the telephone: Milwaukee, WI and Cambridge, MA.

Using the computer system at the Visible Language Workshop (V.L.W.) at M.I.T., Davis with the help of many others including Lee Silverman and Ron MacNeil, created a system in which a stone would be placed on a laser carving table at a Milwaukee stone-cutting quarry and, through a series of machine commands exchanged from the V.L.W. computer to the Milwaukee computer, a stone would be inscibed by a laser corresponding to the image drawn with the computer in Cambridge.

The process would begin like this: a stone would be placed on the table in Milwaukee, and an overhead video camera would send a composite (RGB) signal image of the stone using a slow-scan transmitter over the telephone line.

When the image was received by the slow-scan transceiver in Cambridge, it would be scaled in relation to a one-inch grid, so in effect one would be dealing in an accurate scale of the object. Then, once received and properly scaled, the image would be placed in the frame-buffer and someone from the Cambridge team would draw onto the frame-buffed image of the stone using the mouse.

Once the team member had completed what he wanted to inscribe on the stone, the new image was sent back across the phone lines to the system in Milwaukee where it was converted into a machine



#10. An Early Remote Laser Carving Frame Buffer image at V.L.W. of stone, scaling grid and computer-aided image of laser path

language and the laser would make the cut.

Davis's inscription for the first stone to be carved was the original Proto-Canaanite script for the sixth commandment: Thou shalt not murder.

The idea of this inscrption was a powerful statement about the use of new technologies. Davis, employs such systems in the hope that lasers and other high technology tools will not be used to a detrimental end. This philosophy is centers on a need to 'humanize' technology and is a strong motivating force for much of the work at C.A.V.S. .

In many ways this work with laser cutting and the current work that Davis and his colleague Eric Begleiter are formulating (the first man-made aurora for artistic purposes: "New Wave Ruby Falls"), coupled with recent concentration by the U.S. Department of Defense on space weapons, brings home the potential accessiblity and immediacy of the negative uses of technology. "It's twelve-hundred miles from here to Milwaukee," says Davis,"it's only a hundred or so miles to space."

Nonetheless, systems such as these make evident the fact that the earth is being perceived in a more accessible, human scale.

In his essay in You are Here: Environmental Art Kenneth Baker talks about the need to de-objectify the earth. According to Baker we must reacquaint ourselves with the earth through our immediate environment; only then will we be ready to give importance to those non-human scaled photographs

of the earth from the Apollo mission.

The fact that I can communicate with somebody in Tokyo, Koala Lumpur, London or Johnstown Pennsylvania in a matter of seconds should not allow me to neglect the vast amount of distance covered during my communication. The immediacy of the communication in many ways stretches my ability to cover vast distances in "a single bound." I may not be the actual physical size of the earth (although Stanley Kubrick's image of the StarChild in 2001: A Space Odyssey may be one of the most beautifully rendered images of a man to earth scale) but it is the rare individual who gets to really experience the size of the earth; the astronauts are the only ones to directly experience this fact.

Baker is persuasive in his argument that the image of the earth has been trivialized because it has been made into a marketable image. The cover of The Whole Earth Catalogue is perhaps the best example of this. By events such as Earth Day or the series of recently released nuclear and other World-oriented holocaust films, such abuses can begin to generate awareness of earth-exploitation.

His 1976 essay "Thoughts on the Earth" neglected, however, the potential for expression on a scale later to be realized in such work as Tom van Sant's "Reflections from Earth"(1980). In "Reflections" a series of mirrors in the shape of an eye reflected the sunlight illuminating a combined distance of 1.4 miles. This sculptural array of light was photographed by an orbitting satellite. The digitized image of this 'earth eye'

looking out reflecting light into space is an important step toward humanizing our image of--or anthropomorphizing--of the earth.

The "Reflections" image as well as the projected one for Davis's "New Wave Ruby Falls" are of the scale which begins to reckon with the size of the earth. In the latter project, Davis intends to ionize inert gases in the upper ionosphere in order to create a 4,000 mile auroral discharge. This will inevitably be the largest piece of environmental artwork ever done, and will immediately put into perspective an image within the larger context of the earth (not to mention man's ability to understand and imitate gestures that previously were considered only the priviledges of the gods).

Soon the opportunity will exist by which the electronic performance arena will generate information on a scale which will be beyond any scale we have known. The fact that we can communicate over distances far greater than those previously known like the distances between the probe Voyager and the earth,already suggest that our understanding of distance is constantly growing.

Public Art versus Art in a Public Space

Traditionally pubic artwork has been object-oriented, as in such common examples as monuments which are erected to commemorate veterans, heroes, etc.. In many of these situations the artist has built an object or a model of an object (the maquette) and placed it within a larger context: the public territory or common space known as the 'the site.'

> The site is a theatrical space: it dislays the monuments. Through its lay-out of roads approaching and encircling the monument the site organizes and shapes perception. The best monuments such as the Arc de Triomphe in Paris, one sees already from far away. It takes a long time to reach it. As one approaches it it is always there on the horizon, hardly coming closer. Its presence become oppressive. This makes the monument a dramtic object: a precisely orchestrated display of historical past as timeless value. (it audience is the nation.)[36]

A monument such as the Arc de Triomphe is a public work of art primarily in its accessiblity, visibility and importance of the artwork (emotional, sentimental or intellectual) to the public. The images of the Nazi stormtroopers parading beneath The Arc's arches during the takeover of Paris as opposed to the celebrations down the Champs Elysses at the end of World War II are events of such magnitude which inevitably create a public focus on this monument. The Arc has become a symbol of nationalism because of its central placement on a prominent thoroghfare, just as its neighbor the Eiffel Tower has become a internationally recognized image of Paris.

Every city has its identifying monument. New York

with the Statue of Liberty, San Francisco with the Golden Gate Bridge, St. Louis with the Arch, Philadelphia with generations of Calder family sculpture down the Benjamin Franklin Parkway beginning with Alexander Calder's mobile in the Philadelphia Museum of Art ending with his grandfather's sculpture of William Penn on top of City Hall, the Liberty Bell (or even more recently the Oldenburg "Clothespin") Washington with its masonic obelisk the Washington Monument, etc. .

Placement and size (maximum visibility) are not the only characteristics of the 'Public' in public art. Because large monuments are so visible, we begin to take them for granted as objects, and consequently they lose their relevance except in a historical context.

There is an increasing number of examples, however, of art work that has been placed into the public space, but is more recognized because of its relevance in social, political and personal frameworks.

The large scaled Vietnam War Memorial in Washington D.C. and the controversy surrounding this piece may shed some light. The large "V" implanted in the ground allows one the opportunity to embark on a personilized (and yet collective) emotional journey. One is immediately struck by the stark presentation of thousands of names. The actual visual impact is overwhelming because a connection is created between the event and the amount of people being memorialized.

Because the Vietnam War Memorial involves a

journey, one that leads the viewer into the earth and out again, one that engages the viewer directly (on a personal basis), it breaks down the passive barrier that might be created by a monument that does not consider the scope of the issues concerned. Such a monument that ignores public interation remains merely a piece of artwork placed into the public space.

A prime example of art in public versus public art surfaces with the recent controversy concerning Richard Serra's minimalist 120-foot-long "Tilted Arc" (1981) which has been placed on Federal Plaza in Lower Manhattan. The Federal General Services Administration is considering removing the piece because "this piece for three and a half years, has made it impossible for the public and the Federal community to use the plaza."[37] According to the agency's regional administrator William J. Diamond, concerts, displays and outdoor ceremonies have been conducted in places other than the Federal Plaza.

As is usually the process, a public hearing will be held in order to determine the fate of the piece. The superimposition of an object onto a public space is often unjust. The placement of Serra's 73-ton steel sculpture into the site without consideration of the people who use the site and what they use it for might under certain circumstances be thought of as an act of totalitariansim.

In the Vietnam War Memorial in Washington, D.C. a simple statement is made through the content of the piece and in its integration into the landscape. Though it too is not ith out its 'public' problems.

Some of the Vietnam veterans felt that the piece only honored those whose lives were lost during the war. In reaction to this an addition piecewas installed. Three lifesize male figures in combat fatigues were placed in a lightly wooded area on The Mall near the "V" as if to suggest that they too were looking for the names of their lost comrades.

The important lesson to be understood regarding this piece and any public art design process is that a dialogue between the artist, the public and the administrative forces will allow for a healthy development of an idea.

Another example of public accessibility to the large-scale creative act (and one in which the dialogue is one of the openly acknowledged crucial part of the design),can be found in Christo's work. His early steel oil drum "iron curtain"[38]"Wall of Oil Drums"(1962) on the Rue Visconti in Paris is an example of a confrontational act where pubic access is challenged. Movement through a street and its connecting streets is forced to be temporarily rerouted by a fourteen foot multi-colored wall of stacked oil drums.

> "In 1961, I was doing the exhibition in Cologne, and at that moment they built a wall in Berlin, and ther was a very tense moment in Germany and in Europe. It wa almost the outbreak of a world war. I came back to Paris. During that time Paris was in an incredible political uproar because of the end of the Algerian conflict. It was very exciting.
> I proposed in September 1961, to build a Wall of Oil Drums, an iron curtain, in a small street on the Left Bank in the Quartier Latin, Rue Visconti. I did the photomontage, I did some drawings and I

> started to ask for permits from the prefect and the governemtn in Paris. That process was very long, almost a year; I had to go to court and to the police and never got permission. But I did the project anyway, in June of 1962.39

Christo, in his recent work which uses fabric on an architectural or environmental scale, takes a sculptural idea and places it into a social context. He takes the creative impulse, which is a private act and places it into a public realm on a scale which demands at least a brief realization on the part of the audience. Permanence is secondary to the realization. This is evident in his early oil drum stockpiles as well as in his most recent "Surrounded Islands"(1984). In light of this, he has termed these pieces "temporary monuments."[40]

The installation of his pieces is an integral part of the process of the realizaton of the piece. But before he organizes the countless numbers of people, the materials and the technical support systems that are necessary for the piece to be constructed, he must consider and cope with the legal elements surrounding his final piece.

Similarly, Claes Oldenburg has recently designed a monumental fishing rod for Boulder, Colorado which because of its catch--a gigantic aluminum beer can-- has caused a great deal of controversy. The public has voiced great dissatisfaction with this image because the sculpture was supposed to represent an area known for its devotion to the wilderness. Consequently more public hearings are underway.

The dialogue that occurs because of these

large-scale ideas whether they exist in the courtroom, in the home, on the street or in city halls, has allowed the artist to extend the creative act into a process-oriented ('real'-life) performance.

In a literal comparison to drama, the cast of characters are: the artist; his object, image or idea; the audience (the public); the arena is defined by the boundaries of the process itself.

Christo has on several occasions made a distinction between himself and artists such as Allan Kaprow who work in Performance. "Everything in my work is very literal. If three hundred people are used, it is not because we want three hundred people to play roles, but because we have work for them....My work may look very thearical, but it is...not a relaxed, joyous feeling as in a Kaprow Happening."[41]

Perhaps one of the most ambitious, courageous and controversial pieces Christo has conceived is the wrapping of the Reichstag. By attempting to cover this symbolic architectural entity, the artist is immersing himself in a multiplicity of levels concering public art. Ther are many levels included: the socio-political context; the historical; the legal; and the physical engineering of the project. All of these factors raise a new awareness toward the complexities of public scale.

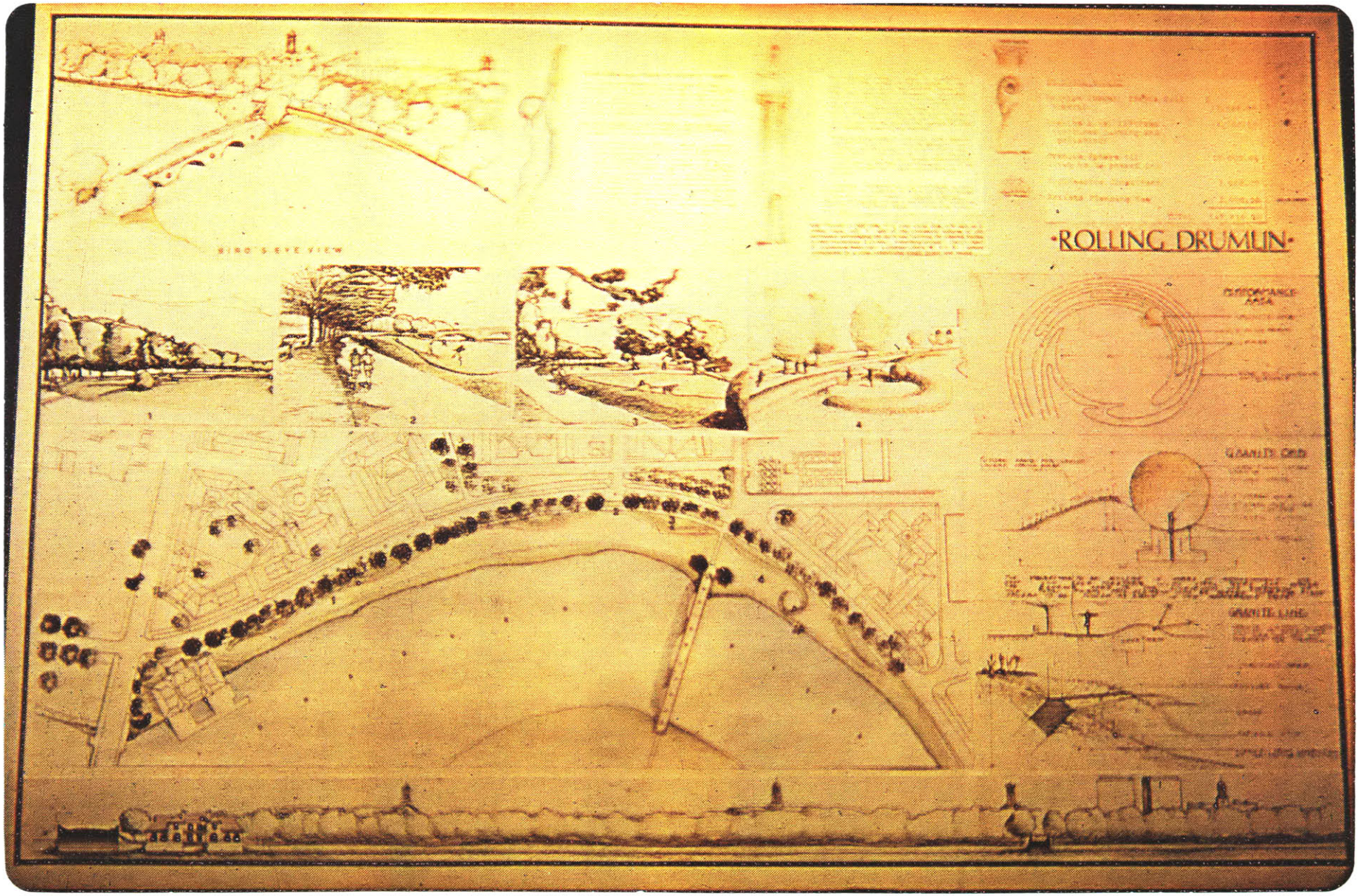
Together with landscape architect Dennis Dale I designed a large-scale public art piece called Rolling Drumlin for the Cambridge Public Art Competition in 1984. The piece consisted of a gently curving berm which was placed to conform

with the curve of the Cambridge Riverbend Park next to Harvard University. We were interested in creating several elements for the park. On the one hand, the park was largely without any formal focus. By installing a 1300' berm we proposed to separate the different modes of traffic (bicycle, pedestrian, automotive, roller skaters , etc.) from the park. Within the slope of the berm would be a slab of granite running the entire length, lowering in to the entrance paths and rising again where the berm began to rise again. The facing of the granite would be either highly polished or coated so that when the sun hit it a reflection 'line' would be created. In addition, the granite line would serve as much needed seating element on the perimeter of the park.

The Competition required a historical perspective for the entry so we placed three 7' spheres of granite in relation to the granite line to suggest the geological phenomenon known as the drumlin which is prevalent throughout New England. The placement of the sphere would be done in such a way as to create a visual connection bewteen the two granite entities, implying that the Spheres had rolled onto the site, carving the berms, and implanting in their course, a granite trail (the reflecting line).

The public would be incorporated in their use of the street side of the berm where plantings could be made, as well as in the spiralling end of the berm intended for use as a performance area for yearly festivals.

The piece originated as an environmental sketch



#11. Rolling Drumlin: A Proposal 19" x 30" Pen and Ink on mylar

#12. Rolling Drumlin (Detail) 5" x 7" Pen and Ink on Mylar

#13. Rolling Drumlin (Details) 5" x 7" Pen and Ink on Mylar

#14. The 1260' Dotted Line (Detail) 220 9" x 70" Silvered Mylar sheets stapled to a guard rail, Cambridge, MA

#15. The 1260' Dotted Line (Detail) 220 9" x 70" silvered mylar sheets stapled to a guard rail, Cambridge, MA

called "The 1260' Dotted Line" in which 220 9"X70" sheets of silvered mylar were stapled onto the river side of the Memorial drive guard rail.

Mass Spectacles

In order to understand the relationship between the artwork and the public in the cases of non-object public artwork a focus is necessary on the the forms that deal primarily in the celebrative act.

One of the largest mass spectacles created as an art event has occured in China as political rallies which utilize an entire audience to render portraits of Chinese leaders such as the late Chairman Mao. In keeping with the doctrines of Communism, these large-scale portaits are, in essence, a very literal interpretation of the public art act.

Albert Speer's "Cathedral of Light" (1934) used light as a symbol of Nazi supremacy for manipulative, political purposes. This piece of "luminescent architecture," as Speer himself called it, was constructed for Nazi rallies. 130 carbon arc searchlights were focussed skyward, reaching heights of 20,000 feet and at times illuminating the undersides of clouds passing by.

Other celebrative acts such as the rock concert, the political conventions (in which municipalities and states rejoice in their choices for candidates), activist parades (such as gay rights, women's rights racial equality) traditional and calendar-enacted parades (Mummers, St. Patrick's and Macy's Thanksgiving Day) anti-traditional parades (The rag parade), religious parades (the

Pope's Calvacade, The Mardi Gras, Italian patron saints parade, The Philipino Turumba, Puerto Rican Feast of the Epiphany parade), Ron Hays's Star War Concerts, Otto Piene's "Olympic Rainbow" (a large-scale inflatable rainbow which he flew over the Olympic Stadium at the 1972 Olympics in Munich), the Sky Art Conferences, 4th of July Fireworks displays (in this country it is through the images of war that we celebrate--"Bombs Burtsing in Air"), are examples of multi-media events on a large-scale which directly or indirectly invovle the public. In these non-objective forms the public is an integral part of the whole structure of the celebration.

It is through the celebrative act, the non-objective public artform, that the "mass man" is transformed from "his isolation and lack of normal social relationships," to one of unity and sense of belonging.[42]

> The fiesta is just as religious as the pilgrimage, the dance is just as spiritual as the prayer. In fact, for thousands of people for many millenia, the festival was the main religious event in their lives. And mimic movement and ritual gesture were the principle ways of communicating with the holy....The rebirth of festivity in our time is a sign of hope when we desperately need it both politically and spiritually. Therefore, let the revels begin![43]

Tidal Movements and Other Memories

The Woods Hole Inflatable Performance Sculpture was an idea born from a fascination with a certain body of water and its interesting relationship to the wind above it.

Ever since I can remember, my family and I went to Woods Hole to spend time at my grandmother's. My brothers and I would attend the Children's School of Science, learn about microbiology and how to swim, sail, play tennis and dance, as well as fall in love for the first time, experience sex, break the law and learn how to fight. The usual fare of 'growing up'.

My parents had met there. My father was studying marine biology at the Marine Biological Laboratories. My mother, on the other hand, was on Cape Cod during the weekends while at summer school at Harvard. They were eventually married in "The Big House" at my grandmother's. (I think one always speculates about one's beginnings, in relation to the stories heard about the courtship of parents.)

When I was a boy, my father would take me sailing in Woods Hole Passage. Sailing with him, especially through the Hole, was always an adventure. The act of sailing through "the hole" was always a very special journey for me; it meant having to deal directly with certain difficult variables. My ability to deal with these variables and accomplish the complexites of the journey, constituted the completion of one of my own passage rituals.

In the fast moving waters of Woods Hole, one has to know how to navigate around a treacherous course; one has to be versed in reading tidal charts, knowing about buoys, the rules concerning harbor entrances, not to mention how to manage a boat under these conditions.

To move with the current was a captivating kinetic experience. Sailing is a relatively slow, deliberate, peaceful way to travel. This is not to say that it does not have its moments of terror or boredom, it certainly does. But in comparison to other modes of movement it is soothing.

Once in the grip of the turbulent Hole, however, when sailing with favorable currents, a boat speeds forward as if aided by a huge hand (See the first Illustration: Tidal Gesture). In contrast, when sailing against the current one is dependent on a combination between a consistent wind and a steady tiller.

Sailing against the current, the water moves so quickly along the gunwales that it would appear, if one only had the water to judge movement by, as if the boat was speeding forward. When one looks up at the land to measure distance travelled, however, it is easy to realize that forward movement has been very slight.

Sailing against the current in Wood Hole, I am caught between the wind and the water. It was like sitting in a fast moving river of glue, held there in some symbiotic balance between the wind and the water. One can only reckon with this surreal equilibrium of environmental forces by using

intuitive ability and acquired skill. It is the act of reckoning with this equilibrium that is the heart of the performance aspect of the WHIPS project.

I found myself struggling to balance two very powerful environmental forces. It was from this struggle, that I was inspired to formulate ideas for Woods Hole Inflatable Performance Sculpture. I wanted to direct a focus on the relationship between two fluid environments. Using the tide and the wind as kinetic elements I set out to design a performance based on the themes of transition.

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When we sailed through the Hole it was usually to get to the Weepecket Islands or to sail around in Buzzards Bay over to Quisset or perhaps to Wareham to get repairs done.

Our first boat was called "Quidnunc", which was the Latin phrase my father used to describe my brothers and I . Roughly translated it mears "what next" or "what now"; we were known as "the quidnuncs."

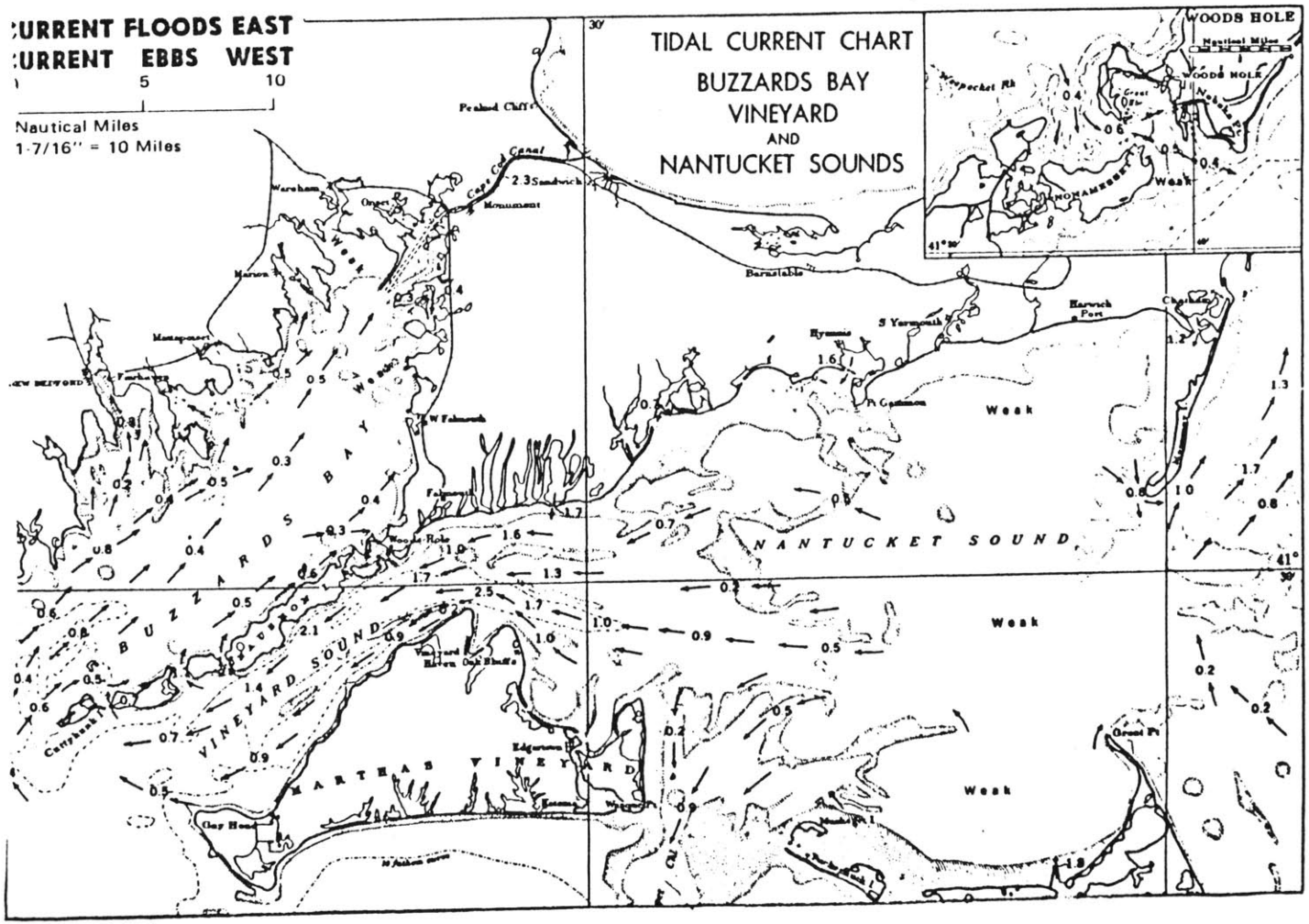
The "Quidnunc" is a Rhodes 18, and it was on this boat that I learned how to sail. My father would painstakingly teach me each part of each sail ("Quidnunc" is a sloop); all the names for the rigging, to read the compass, to hold a course, how to make things "ship-shape" etc. It always fascinated me, and when we sailed through the Woods Hole Passage I was always doing something to contribute to the process of reaching our destination.

We would only be able to go through the Hole when the tide was favorable, which meant that when we wanted to go to Buzzards Bay, we had to know when the tide would be favorable for our return, as well as for our departure.

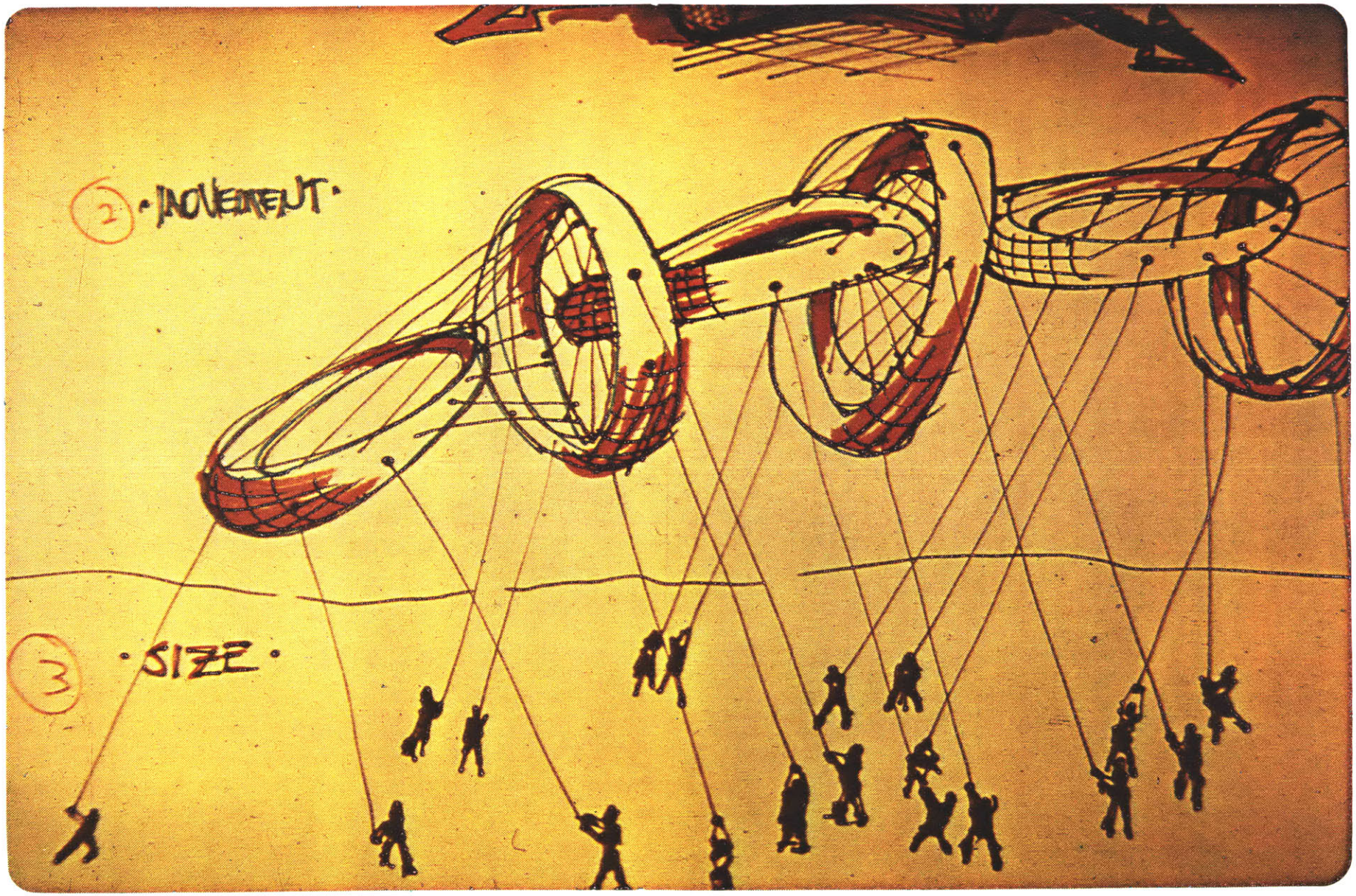
It was not until later on, when my father got a larger boat, a 30 foot Cape Cod "Bluechip" called "Nepenthe" (named after the Goddess of Forgetfulness of Evils), that I really began to know the mysteries of the Hole. We would eventually sail to Maine via the Woods Hole Passage on "Nepenthe." She was recently sold from her most recent home in Rockport, Maine. Her departure brought to an end a series of personal as well as collective sentimental journeys.

As a young boy, a friend and I pirated "Nepenthe" and decided to sail her through the Hole. When we got to the mouth of the Hole fog crept in, daring us to rely on our skill as sailors. We looked with incredible anticipation for the red nun "number 4" which in the turbulence of the current was bouncing back and forth. (A several-ton buoy that is bobbing on the surface of the water can be a frightening thing to peer threateningly at you, out of nothing, on a dark foggy night.)

We managed to finally break through the currents hold on us and made it around to the other side where more friends awaited us on a remote beach. At the end of the night, we returned her safe and sound to her mooring. I have always loved night sailing in a light breeze.



#16. Tidal Current Chart from Eldridge Tide and Pilot Book



#17. Tethered Woods Hole Rings (Aloft) 8" x 10" felt marker on paper

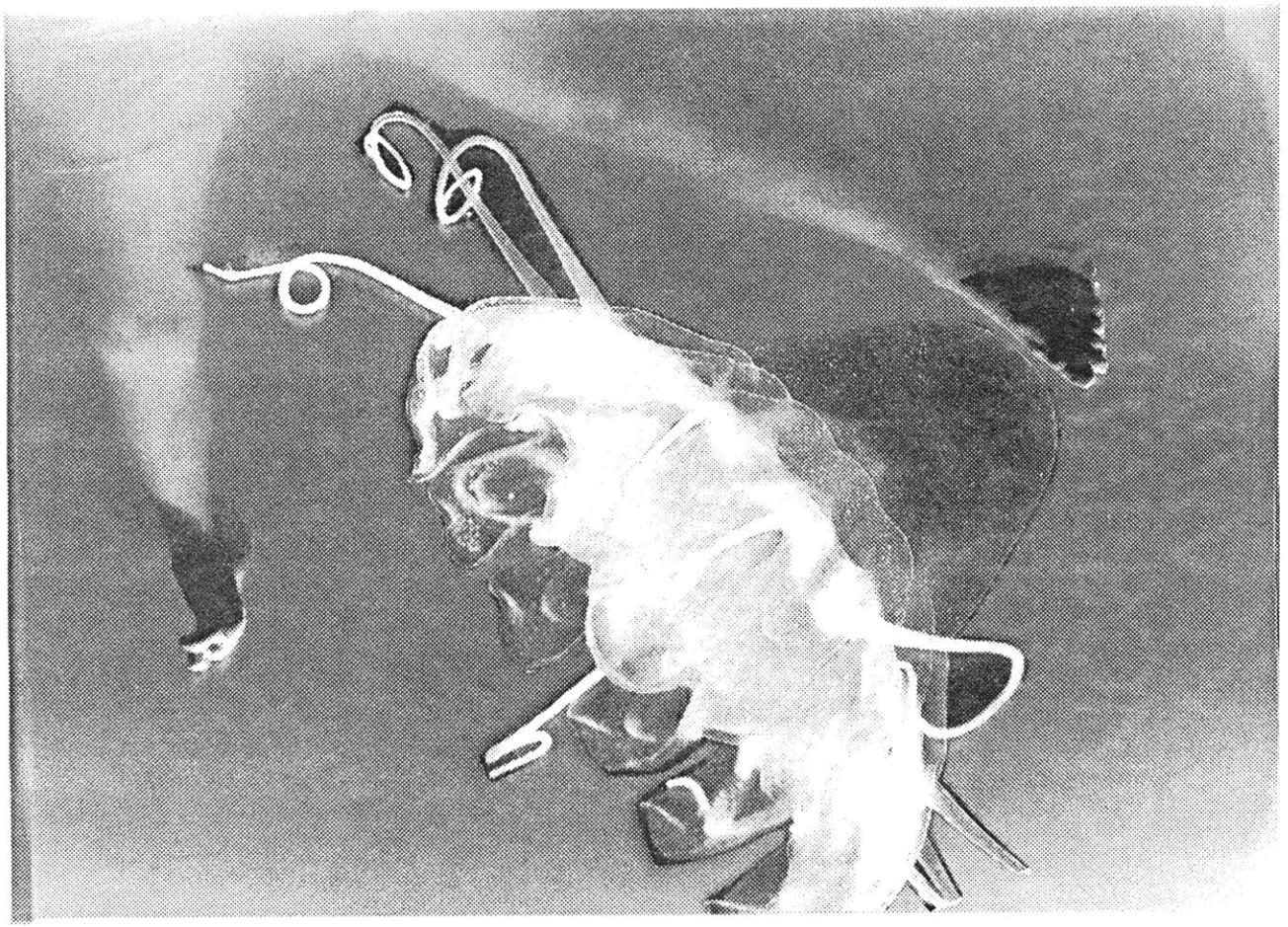
hyalines

awash in full moon tide
a man-of-war camouflaged
among translucent currents
a ghost in salty cold rocking
down to black, up to white
waiting, all sense, to feel
a raw presence
and the swim of belled strokes

when two touch at last
disquises are lost
they are discovered, gaping roses
scarlet in transparent skins

Matthew Gilbert sent me this poem in the summer of 1984 having seen a photocollage I had made Through a Liquid Layer (1983) On top of a black and white photograph taken of my legs, I placed a color image of one of the species of jellyfish that Dr. Larry Madin had been studying at the Woods Hole Oceanographic Institution. I positioned these images so it appeared that the viewer was looking up, from underneath the water, as if my feet were breaking the surface of the aquatic world. More than any other image it symbolizes for me my embarkation into the realm of the jellyfish.

I began the Woods Hole Inflatable Performance Sculpture (WHIPS) in July, 1983 when I was thinking about a particularly dramatic strait of water known as the Woods Hole Passage.



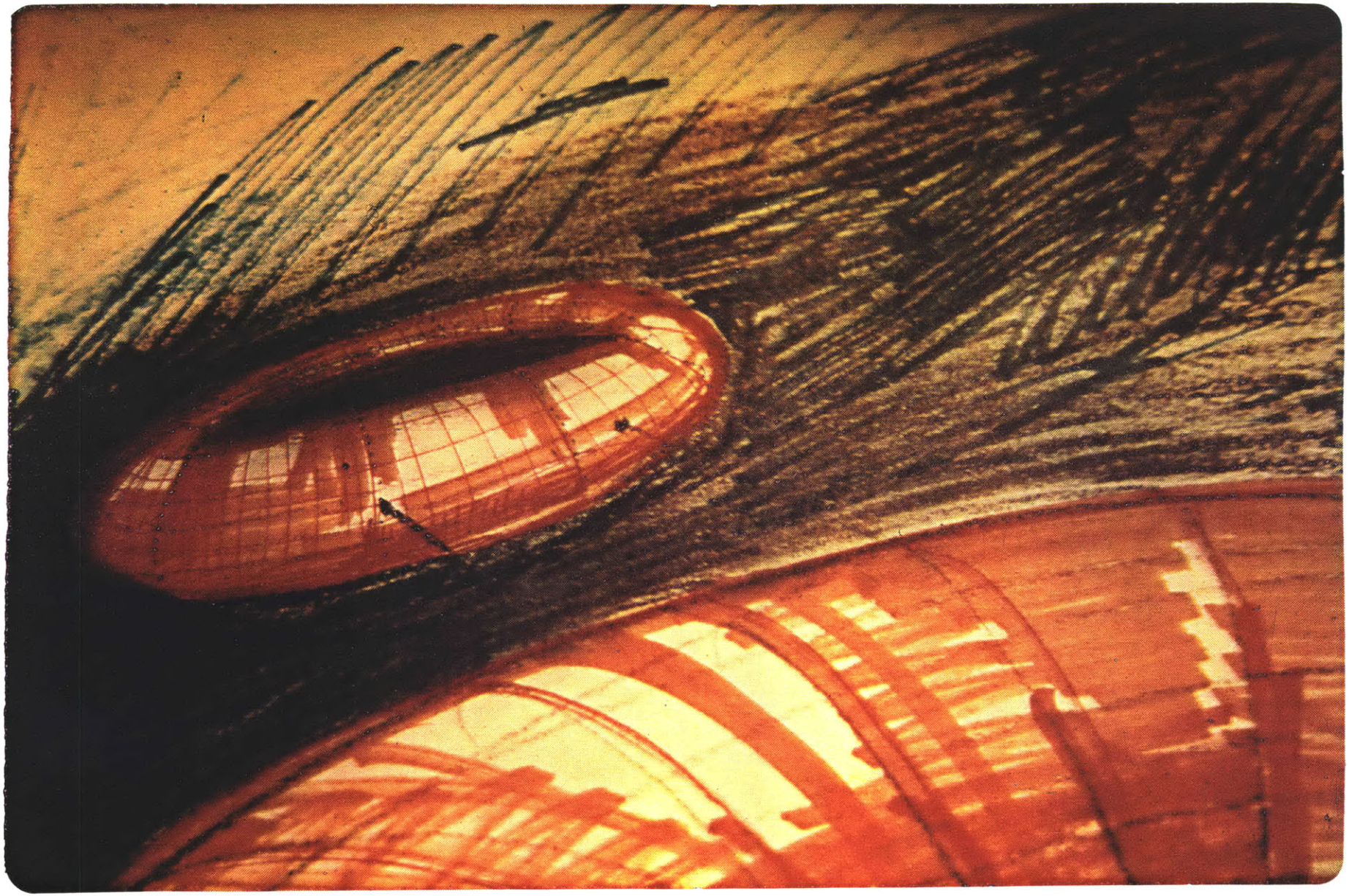
#18. Through a Liquid Layer Photomontage 8" x 10"

The Woods Hole Passage is a stretch of water, connecting Buzzards Bay to Martha's Vineyard Sound and is surrounded by several islands (Naushon, Uncatena, Nonamesset, Ram, and Devil's Foot) and a peninsula (Penzance Point).

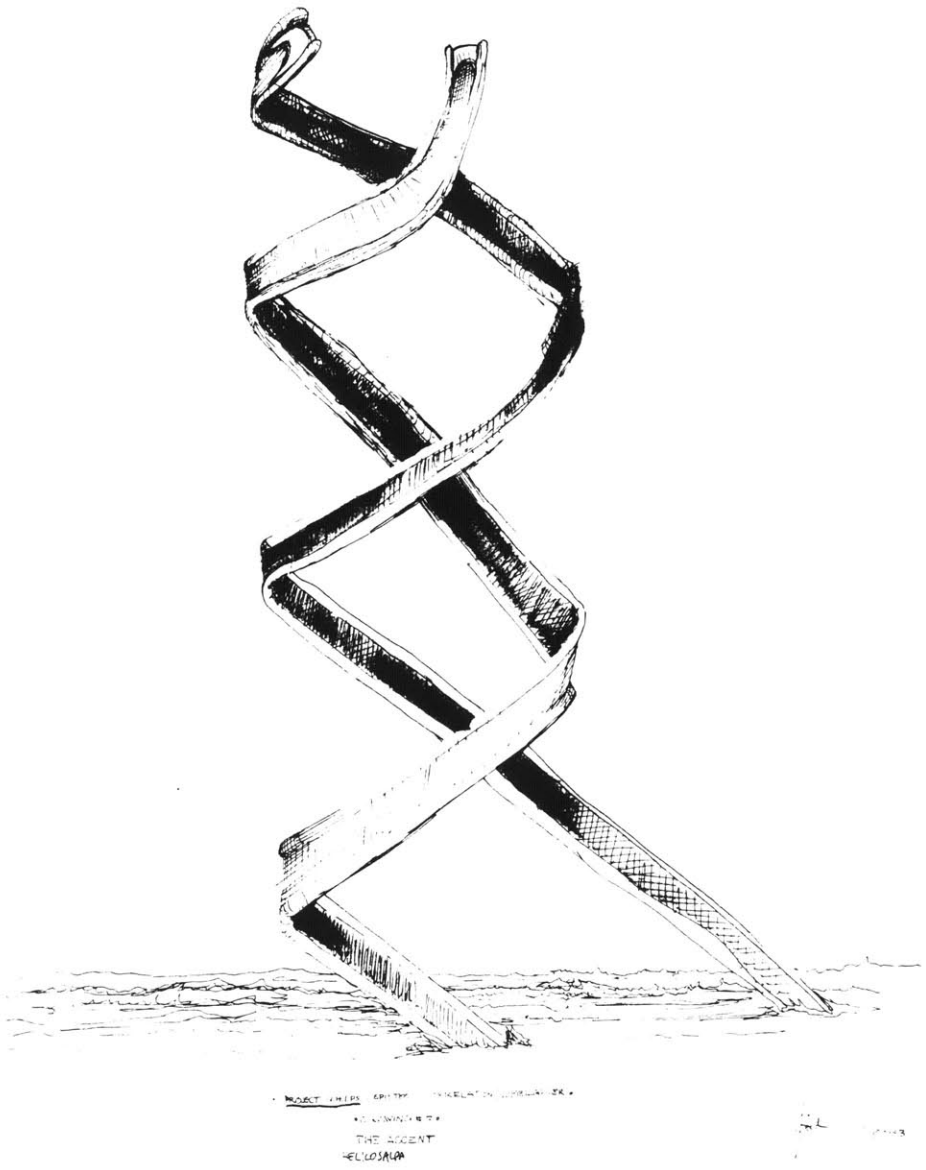
For me, it always repesented an area of transition. A "hole" is an opening in the landscape which allows the passage of water to flow between two larger bodies of water. In the case of Woods Hole, the tidal characteristics vary between Buzzards Bay and Vineyard Sound, causing a push/pull effect in the passage. There are other holes in the abutting Elizabeth island chain such as Quicks's, and Robinson's, but they are much narrower and consequently it is a more harrowing experience to pass through them.

I began thinking about "The Hole", in metaphoric terms, and subsequently made some initial drawings that used a hole as a visual theme. These drawings were of large pneumatic rings. Each ring would be tied together and weighted down enough for the water to push them, while at the same time bouyant enough to float and to be pushed by the winds on the surface.

In one of the versions I intended to connect the audience/ participant with the rings using guy lines for control as these rings floated through the water (a waterborne version of the Macy's Thanksgiving Day Parade tethers). I later thought it would be interesting if the theme of transition could be expressed by the movement from the water to the sky. If I undertook this element of



#19. Woods Hole Rings 8" x 10" felt marker, pastel on paper



#20. Double Helix for Woods Hole: Epistemic Correlation a Life Ladder
10" x 17" pen and ink on paper

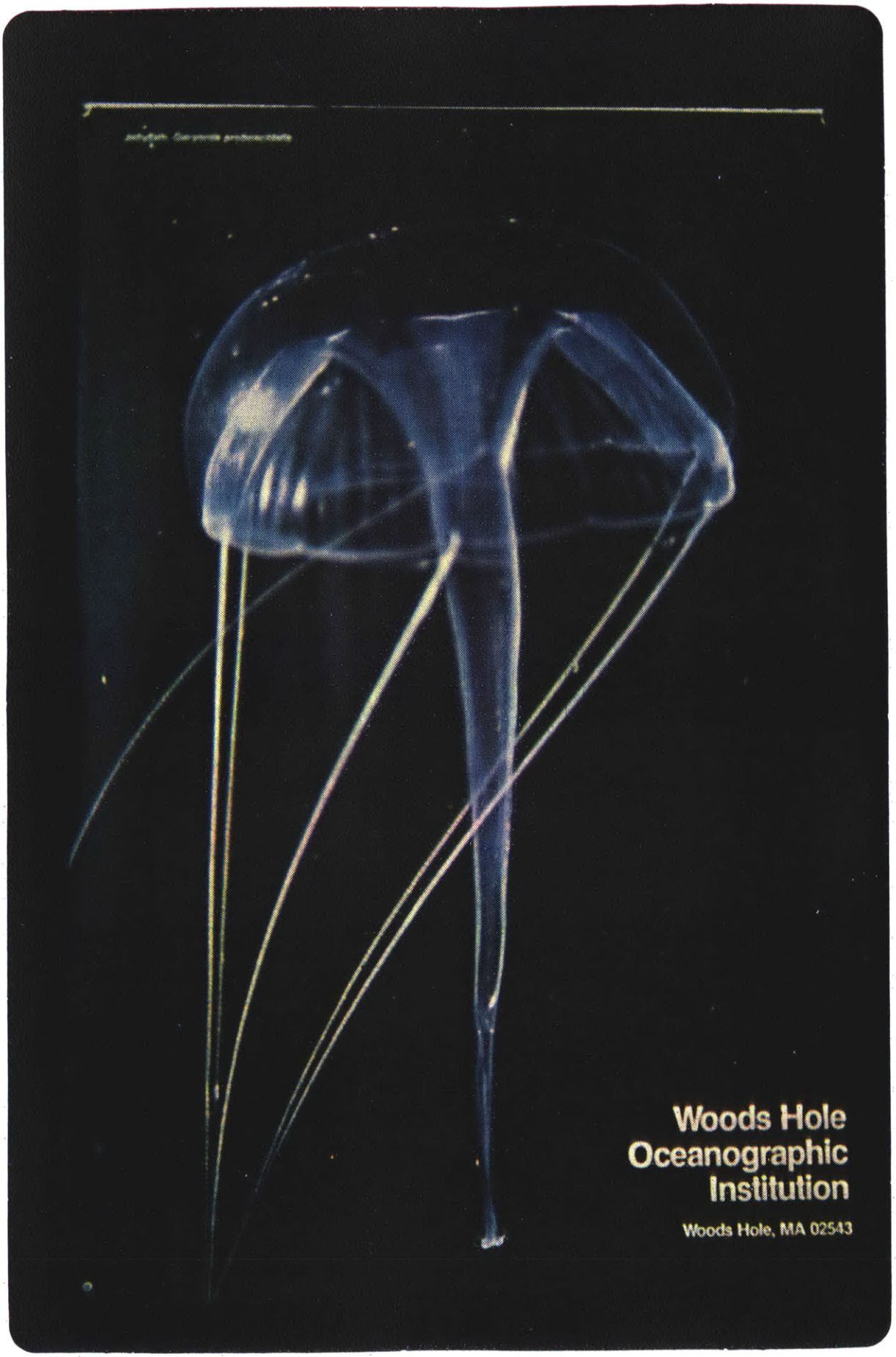
transition it would take the movement out of the control of the water and into the control of the air above it. I could accomplish this with the use of helium. (The use of helium in kinetic sculpture was pioneered by Otto Piene beginnning in the summer of 1966 in Germany. In later pieces such as Sky Lei in Waikiki, Hawaii in September,1970, he used several two-hundred foot lengths of helium-filled polyethylene tubing which flew over a field at the University of Hawaii and over the water nearby.)

It was with the early explorations of the drawings of "Woods Hole Rings" that I began to develop the idea of a performance using the tide and the wind as kinetic elements.

Ultimately, I found the rings did not present enough of a visual interest or a specific relevance to justify the use of that shape for the site.

In site-specific work, I find that the final object, idea or image must be compatible with the environs in which it is to be presented. Although the rings presented an interesting visual pun on the idea of a hole, they were not as directly related to the environs as they could have been.

So I turned to the village of Woods Hole. Much of the activity that surrounds the Woods Hole community is predominately related in some way or other to the scientific research that is conducted there. I decided that the image I was seeking could have the relevance needed if it applied to



#21. Geryonia Probiscadalis Color photograph courtesy of Dr. L.P. Madin W.H.O.I.

the research. I wanted the performance to focus on an object in transit, specifically captured by a current and taken on a symbolic journey.

At the same I was reading The Double Helix by James D. Watson whose personal account of the discovery of DNA had been written in Woods Hole.

> Some of the ealier chapters were written in the homes of Albert Szent-Gyorgy, John Wheeler, and John Cairns, and I wish to thank them for quiet rooms with tables overlooking the ocean.[44]

Albert Szent-Gyorgy (the discoverer of vitamin C) lives in a house very close to where I spent my summers, and it overlooks the Woods Hole Passage. Convinced that it was there that Watson recanted his remarkable story, I began drawing ideas for an inflatable double helix to be placed in Woods Hole.

At the same time, I turned to the research community for guidance in terms of visual information, and consequently met up with Dr. Larry Madin a biologist specializing in marine invertebrates known as coelenterates (jellyfish). He was kind enough to introduce me to information concerning a certain species of jellyfish. I was particularly interested in one image of a species called geryonia probiscidalis, which he had photographed for the Woods Hole Oceanographic Institution (W.H.O.I.).

In the summer of 1983 I saw in the office window of the Oceanus magazine the photograph by Dr. Madin of the same species of jellyfish and immediately thought if it were translated into a larger scale

#22. Geryonia in Woods Hole Passage 36" x 50" Felt marker on paper

#23. Geryonia Model 35" high, 4ml polyethylene and phosphorescent paint

it could easily be an inflatable sculpture.

It was from this inspirational point, that I did several drawings. Geryonia (36" X 50"), shows the jellyfish inflated in the waters of Woods Hole Passage with Uncatena Island in the background. The original idea for this piece was for it to be connected to and inflated by tanks of helium situated on support boats which would surround the sculpture. The journey, represented in the WHIPS CHART by dotted lines, would begin in relation to the tidal current change (one hour past the time indicated in the tide chart from Eldridge Tide and Pilot Book 1984 edition). The entire entourage would move pushed by the current to an area in front of Hadley's Harbor by which time the entire piece would be hovering above the water, fully inflated.

At that point, with the sunset in the background, the piece would be towed back to a viewing area in Woods Hole (the village) where high powered lights would shine on it causing it to glow. In attempting to render an image of a bioluminescent jellyfish in the nighttime sky I was trying to suggest, in large-scale terms, an experience I had had as a child swimming amidst microscopic bioluminescent organism called ctenophores and other species known as comb jellyfish. Both of these marine invertebrates have a tendency to glow at night when the water around them is agitated.

By shining lights onto the large-scale version of Geryonia I was suggesting touching the jellyfish. This act of reaching out to transfer light from a

#24. Geryonia Model II 12' high (when inflated) in studio

man-made mechanized device (the hand-held lighting unit) to a natural lighting system found in a living creature is the intention of the large-scale gesture in the Woods Hole Inflatable Performance Sculpture.

The Geryonia Model was built out of 4ml polyethylene, with a painted interior of phosporescent paint. After the Geryonia Model I made the larger 10' and later 12' models in the studio. They will be placed in Woods Hole Passage in the summer of 1985.

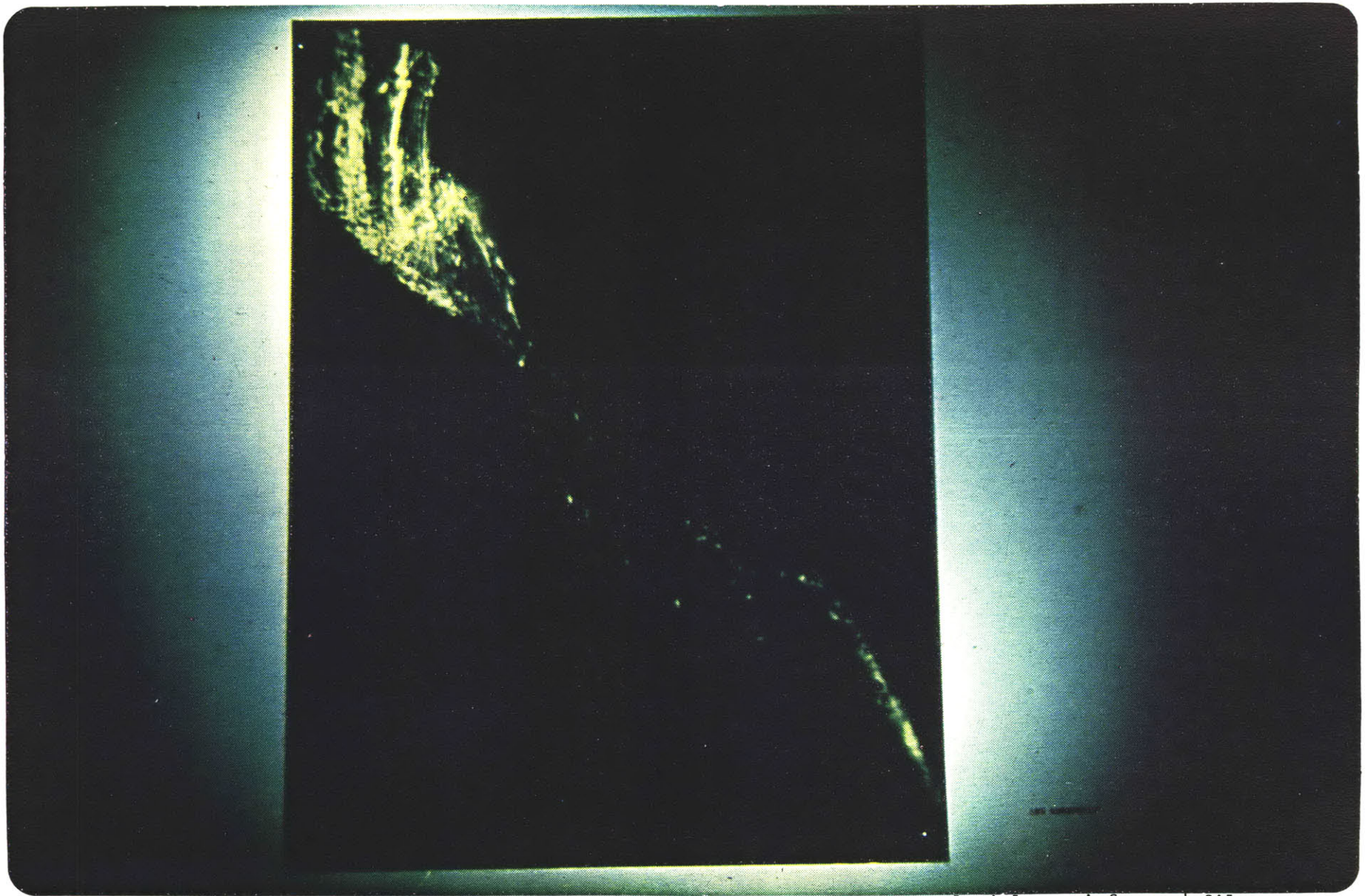
To illustrate some of the ideas for the Woods Hole Inflatable Performance Sculpture, I created several static laser refraction transparencies.

In Life Luminence I used a helium/neon laser and photographed refraction patterns caused by the interference of the beam with a piece of cut crystal. By using infra-red film I could change the color of the final image from red to green. The original was transparency enlarged into a 30" x40" duratrans (which has a translucent polyester backing and acts as a light diffusing device) and mounted it onto a piece of 1/8" plexiglass.

I then designed a shape which was based on the light dispersion of the refraction itself, and had that transferred into 8ml green neon tubing. The neon illuminated the laser refraction in such a way as to suggest a hand or a double helix of light.

Life Luminence was based on one of the original ideas that I had for the Woods Hole Inflatable Performance Sculpture, in which an inflatable double helix would rise out of the water of the Woods Hole Passage. I later realized that the double helix would not hold up except under the most unusual circumstances. Nonetheless, as an integral part of a process toward developing an idea the piece was personally rewarding.

The other piece using neon-illluminated laser refractions was called Geryonia Rising. In this piece I placed two laser refraction transparencies mounted onto plexiglass at 90 degrees to each other and wired the piece of neon to one of the transparencies. The neon tubing also mimicked the



25. Life Luminence 30" x 40" neon-illuminated laser refraction transparency, plexiglass, infra-red film transparency and neon tubing

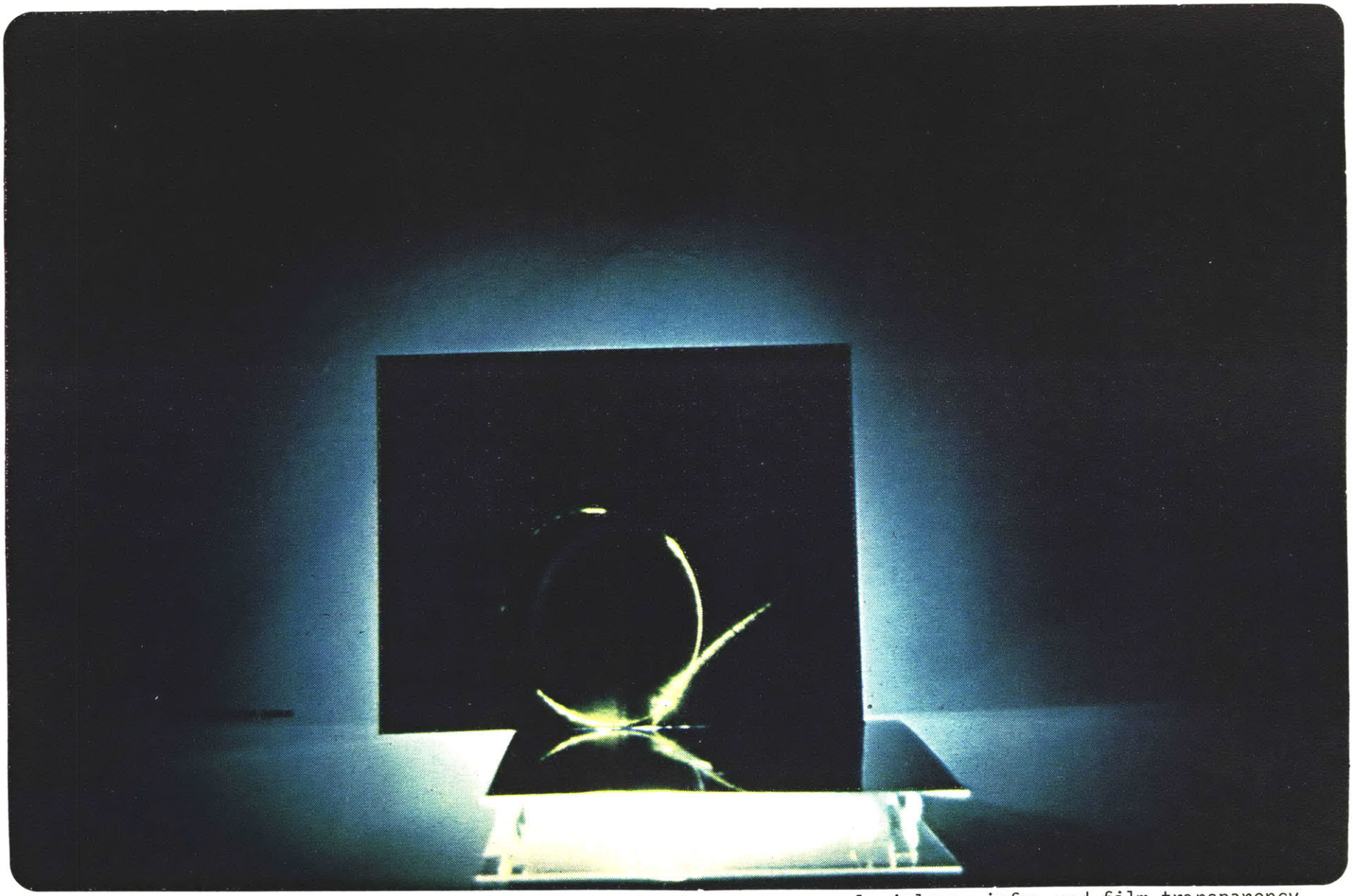
light dispersion in each transparency and consequently was also at a 90 degree angle. Geryonia Rising was a 'light sketch' based on the later idea that I could transpose Dr. Madin's image of the hydromedusan geryonia probiscidalis into a large-scale inflatable sculpture.

In Geryonia Rising, I was trying to visualize the nighttime emergence from the waters of Woods Hole of geryonia. As in the case of the previously mentioned Life Luminence, these laser refractions were shot on infrared film so the final transparency appeared in shades of green.

The change in the color of the laser refraction from red to green was vital to this piece because I was interested in rendering the large jellyfish with an exterior skin which glowed green like certain bioluminescent species do.

In a later model that I built out of polyethylene I actually painted phosphorescent paint on the seams of the bell and photographed it in the dark in order to illustrate my interest in making the final sculpture appear bioluminescent.

In a rehearsal in Woods Hole we actually did apply a phosphorescent material called Cyalume housed in 1/16" diameter plastic tubes onto the exterior of helium inflated polyethylene tubing. When we pulled these series of tubes back to our dock, a beautiful experience occured. I had been trying to discuss the relationship of two fluid environments, the sky and the water, and with these tubes moving behind our faithful vessel "the Seatruck,"we could see the stars very clearly above us, these tubes



#26. Geryonia Rising neon-illuminated laser refraction transparency, plexiglass, infra-red film transparency, and neon tubing

gently moving and glowing in the sky behind our boat and, from the churning of our engines the subtle glowing of the ctenophores and comb jellies beneath us. That experience alone made the entire journey of the W.H.I.P.S. project worthwhile.

The two transparencies I used in Geryonia Rising combined the physical properties that characterize this specific jellyfish. In suggesting that the jellyfish was rising out of the water I had imagined the horizontal element (which was circular in nature) as the part of the jellyfish called "the bell". In the actual performance, the bell would be a seamless bubble which would be inflated with helium, while surrounding support boats would attach guy lines next to the tentacles on the edge of "the bell". These guylines would be managed by personnel in the support boats.

The second element in Geryonia Rising, the horizontal transparency has a cone-shaped refraction which represents the species' "maunbrium"[45] or feeding mechanism. When placed together, these two refractions create a flat yet three-dimensional sketch using the light of the neon tubes to highlight and bring focus to the shape of the refacted laser light.

I originally photographed these refractions in a darkened room from patterns that would appear on a wall. All one can see in these larger transparencies, because of the exposure time, is the green lightshapes.

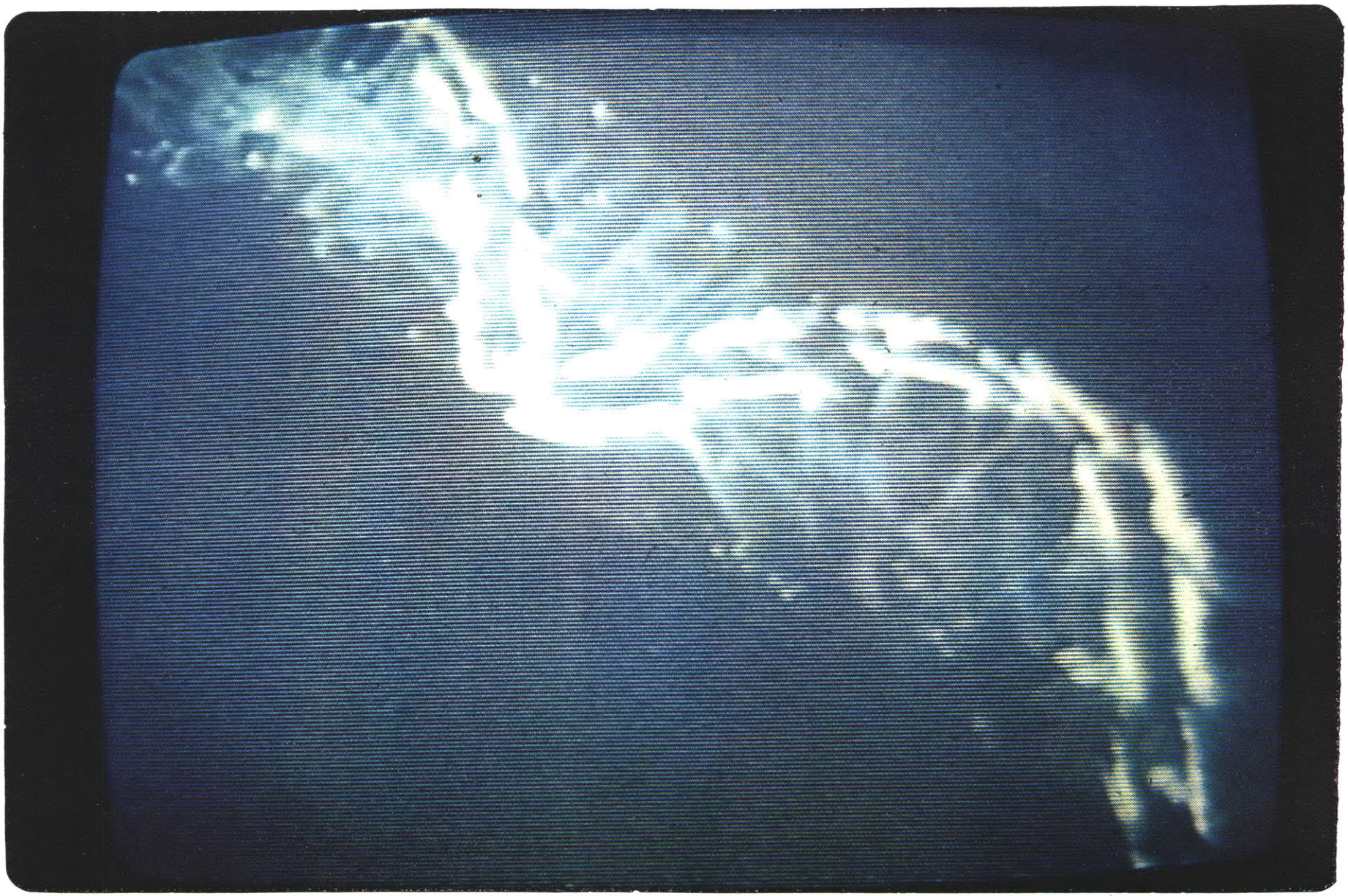
About the same time that I was developing the idea for Geryonia I was also given film footage by Dr. Larry Madin at Woods Hole Oceanographic

Institution (W.H.O.I.). The film he had made was of a species of salp called Helicasalpa whose offspring were formed in this multi-unit organism in the shape of a double helix.

This was quite a unique combination of visual information and inspirational source material. I told him of my original idea to place a double helix of a large dimension (one-two hundred feet high) in the Hole and showed him slides of my laser refraction transparency Life Luminence.

He sent me a version of his film, and from this I made a 3/4" videotape dub. It was quite fortunate that the filming of the Helicasalpa had taken place with a black background, because in making a simulation of the rising double helix, it was crucial that only the image of the salp (or the double helix) would be ssen within the context of the Woods Hole Passage. I had previously shot footage of Woods Hole Passage and intended to superimpose the image of the salp onto that footage. It is a very brief piece, titled simply Helicasalpa in Woods Hole. In it the salp moves in a gently twisting motion, and appears to rise and lower into the water.

This was the first salp that Dr. Madin introduced me to. From another photograph he had taken of a species of salp known as Cyclosalpa I made a drawing called Cyclosalpa (36"X48" oil pastel) from which I built an inflatable polyethylene model using an Audion/Futura heat sealer, two-inch clear Mylar Tape and my own portable vacuum cleaner as a blower. I exhibited this model as well as several other drawings, charts and plans for the



#27. Helicasalpa Video still courtesy of Dr. L. P. Madin, W.H.O.I.

WHIPS project at W.H.O.I. for the Massachusetts Maritime Teacher Association Annual Meeting.

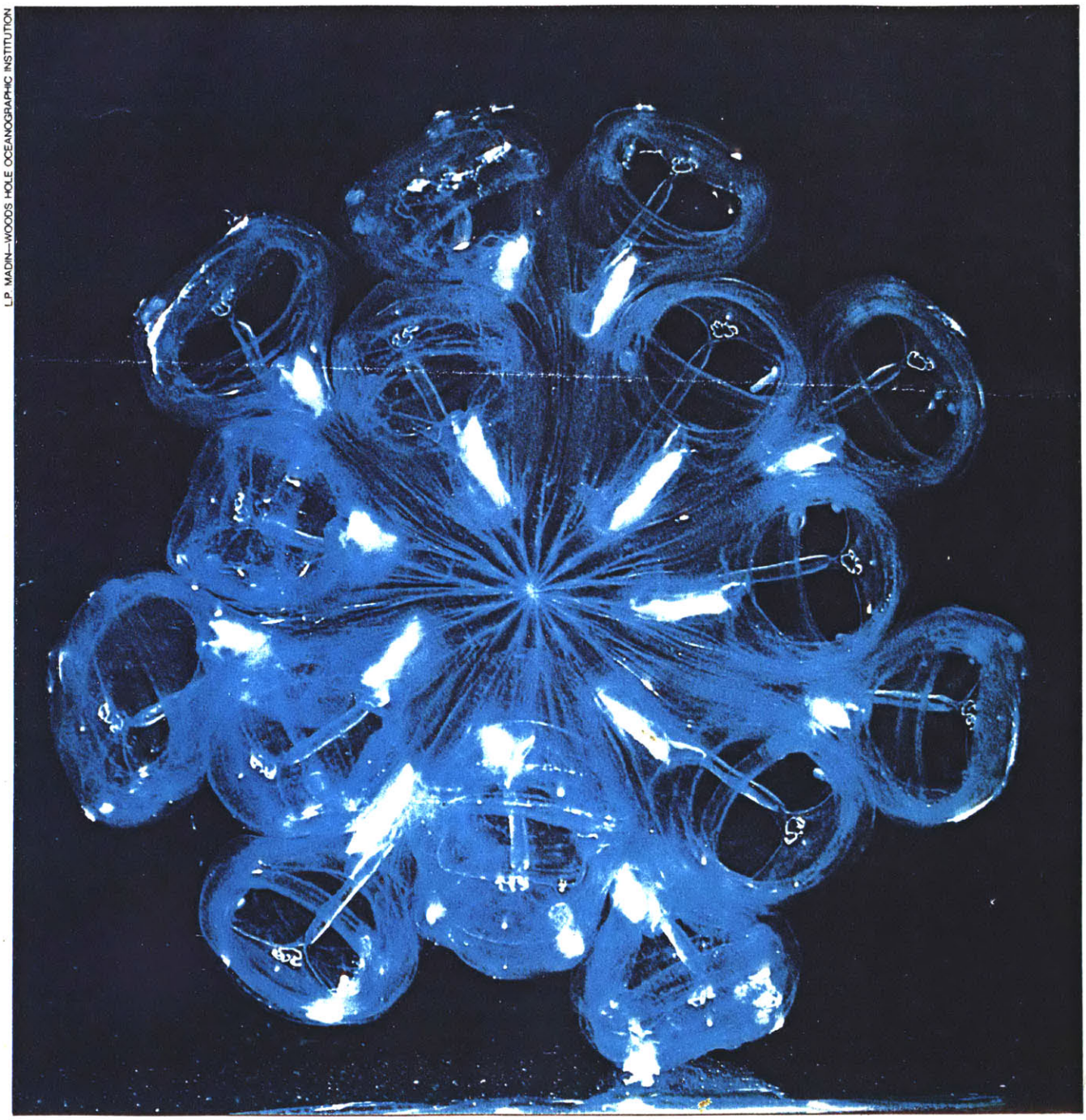
The original model for the piece Cyclosalpa was later expanded from nine clear 14' pieces to two different versions. The original model was never placed in the water at Woods Hole whereas the other two were. The first of the expanded versions used eight pieces: six were black (opaque) 4ml polyethylene tubes at 20 feet, four were 40 foot 4ml clear polyethylene tubes. All were tapered at the base end, attached to a weight and placed in the water.

I tapered each tube in my studio, heat-sealed every edge twice and applied 2" mylar tape over the seals with a packing tape distributor. In terms of construction, this tape distributor was very helpful, although the taping process itself was a difficult one.

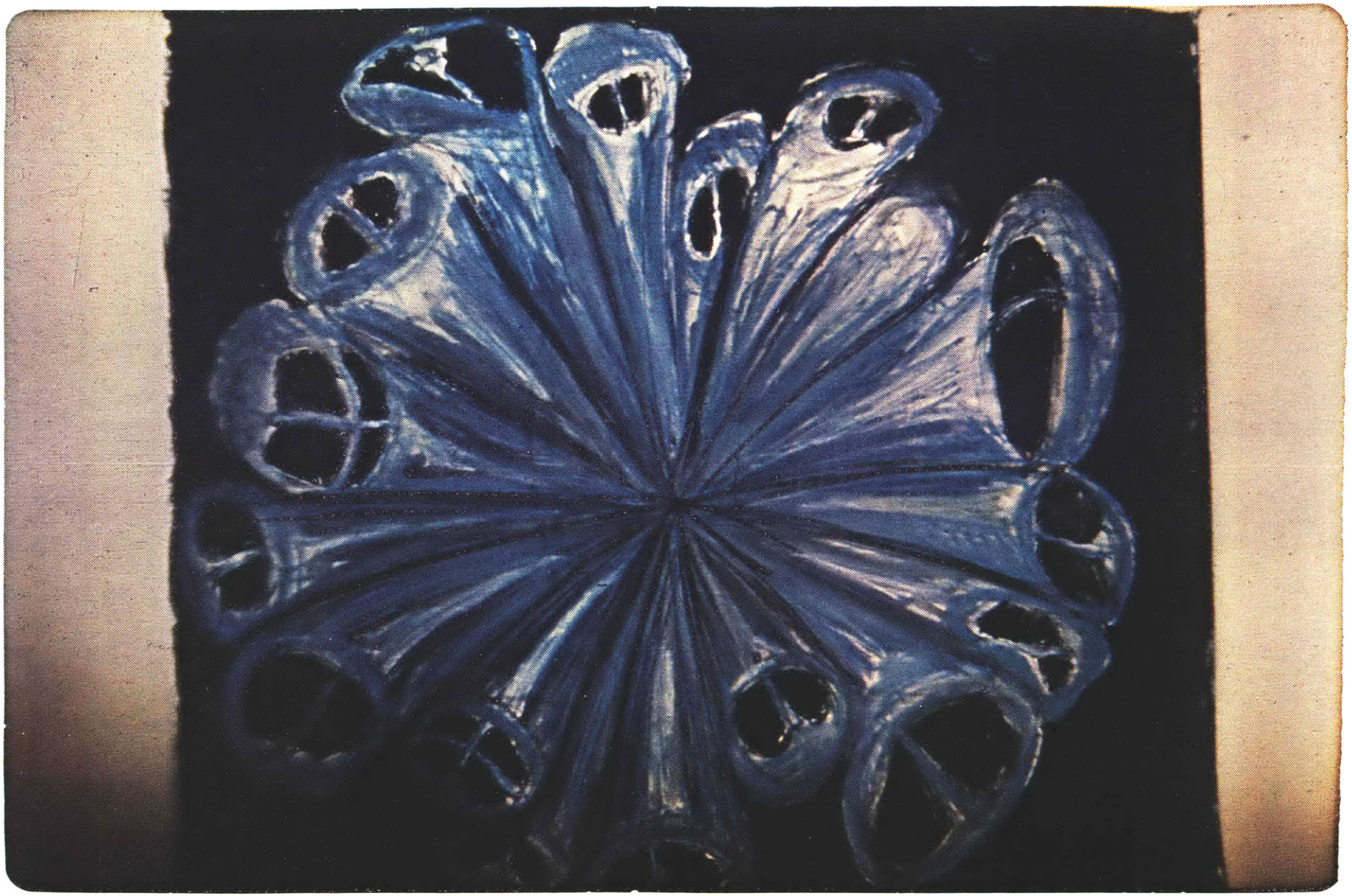
Once taped each tube was attached to a swiveling dog clip. This clip would be hooked onto a three-inch galvanized steel ring. The ring would then be tied to the weight and placed into the water.

These dog clips proved to be useful. At the end of a day when we wanted to separate the entangled tubes, for example, we only had to unclip them, deflate them and then untangle those that were twisted.

The second version of Cyclosalpa was videotaped by two people that I had met after I gave a lunchtime lecture at W.H.O.I.'s "Peanut Butter Club Lecture



#28. Cyclosalpa Pinnata by Dr. L.P. Madin W.H.O.I., photograph



#29. Cyclosalpa 42½" x 32¼' Oil pastel on paper

#30. Cyclosalpa Model I, 13 tapered, clear, polyethylene inflatable tubes at Massachusetts Maritime Educators Conference, April 6, 1984

#31. Cyclosalpa Model I (moving in wind) 13 tapered. clear, polyethylene inflatable tubes at the Massachusetts Maritime Educators Conference, April 6, 1984

Series." Janet Jaffe, a performance/ visual artist living in Woods Hole and Don Flescher a biologist working at the National Fisheries in Woods Hole volunteered to videotape the work.

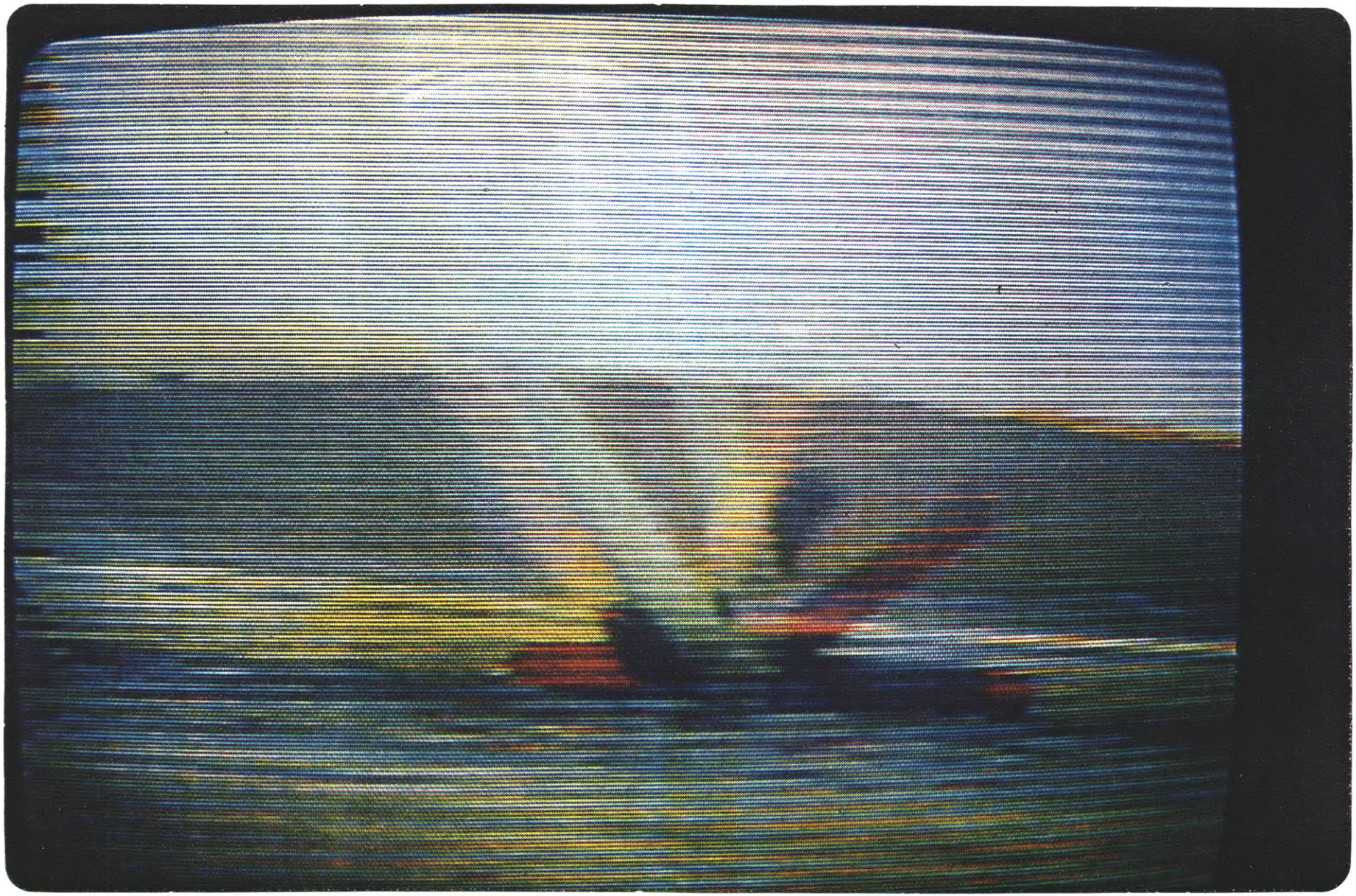
In the first of the waterborne Cyclosalpa versions (July, 1984), Janet Jaffe was taken by my uncle, Dr. Jacob Lemann, onto on an island abutting Woods Hole Passage known as Devil's Foot Island. Don Flescher, was videotaping on board the Boston Whaler we used to pull the sculpture.

It turned out that Ms. Jaffe's footage, although shot on an camera inferior, showed the image of the sculpture from enough distance to place it within the perspective of the surrounding environs.

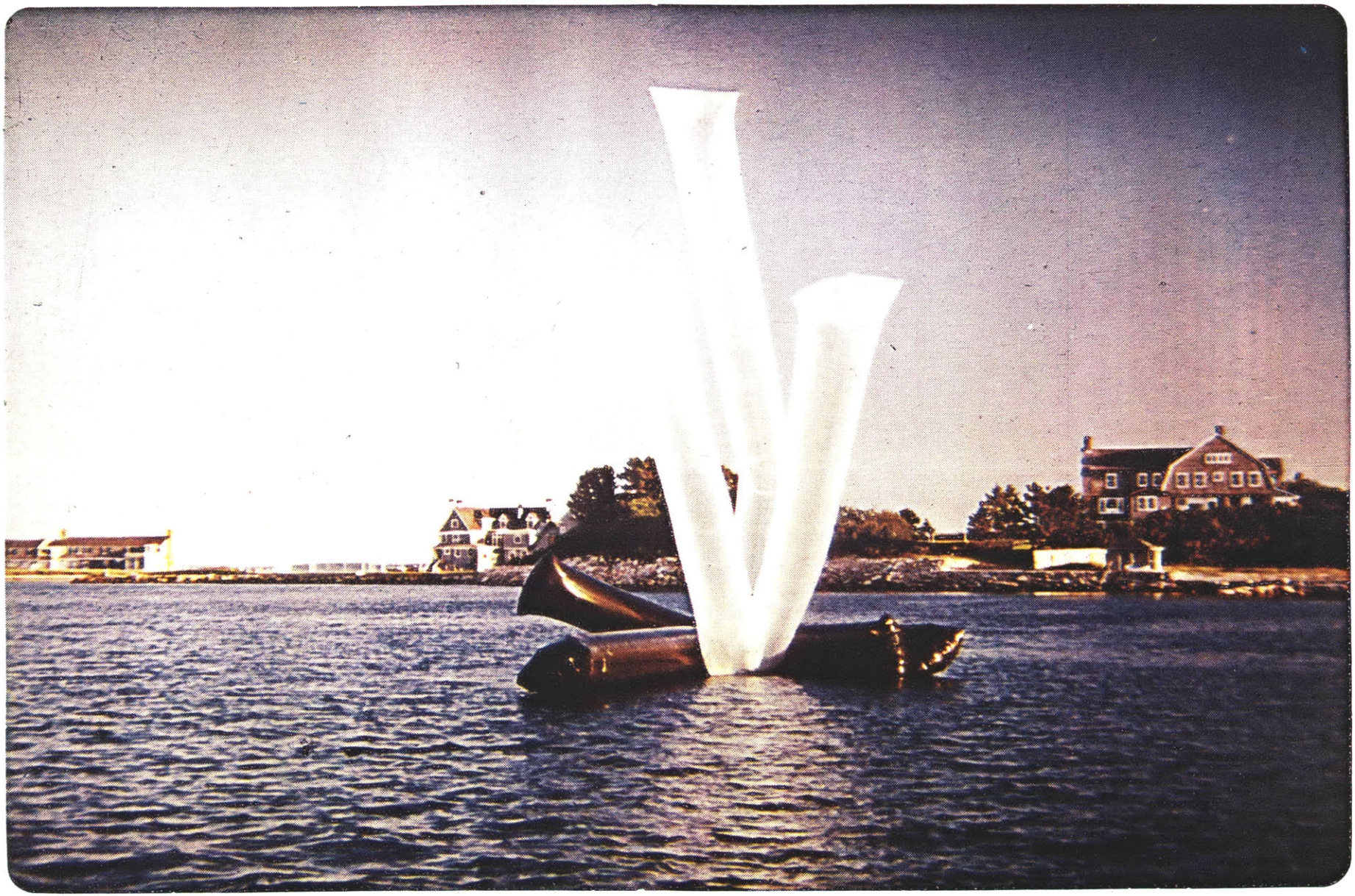
In one part of the tape, for example, the sculpture passed in front of two men fishing. Not only do these two men provide a humorous juxtaposition to the sculpture (one might imagine one of them saying to the other "What the hell is that!"), but they also place the kinetic object in relation to human size.

I do intend humor to be in this juxtaposition of large-scale image into the environment. By placing this kinetic, animate organism into the populated waters around Woods Hole I am creating a situation in which an audience (pehaps not realizing that it is an audience, because it happens in 'real' life) is asked to reassess their visual surroundings.

During the second journey through the Hole (August,1984) the audience, on an incoming ferry from Nantucket, rushed to the bow to try to figure

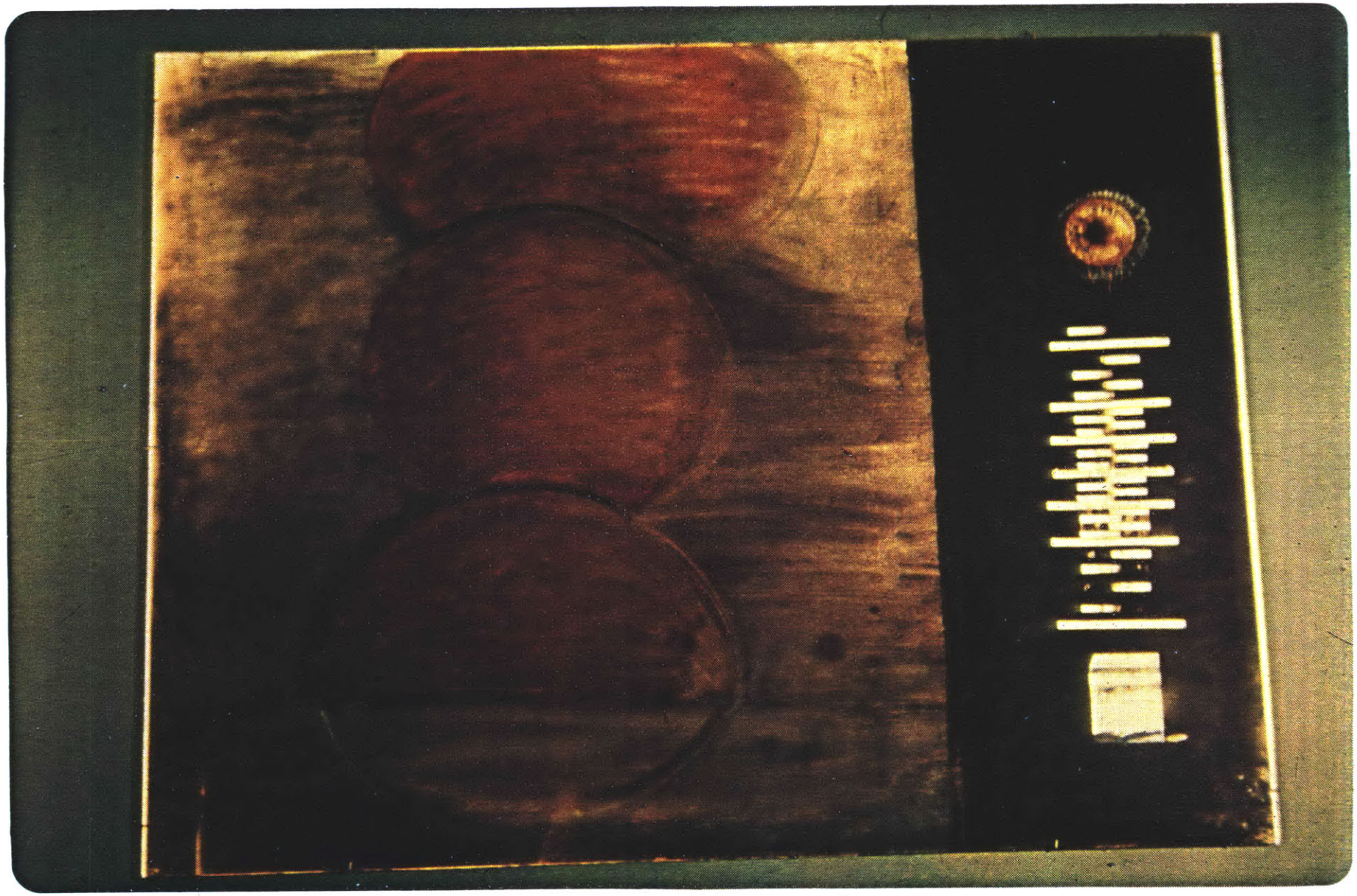


#32. Sketch for Cyclosalpa in Woods Hole Video still of slow scan collage



#33. Cyclosalpa in Buzzards Bay 40' clear and black polyethylene tubing attached to an underwater weight 9/84, photo by Fritz Heide

#34. Porthole I 42½" x 32¼" Oil pastel on paper (M.I.T. Museum show)



#35. Orb Transit 42½" x 32¼" Oil pastel on paper (M.I.T. Museum show)

out what it was they were seeing. In the final rehearsal version of Tentacles (September,1984) people came by their own boats out to the Hole to watch inflation and the journey.

I had originally designated in the collage WHIPS CHART (1983) the small park in Woods Hole around the "The Sundial" as one of the viewing areas, but found it to be too far from the actual performance to be seen. The other viewing areas were Devil's Foot Island, people's individual boats the Steamship Authority's dock (unofficial) and Penzance Point.

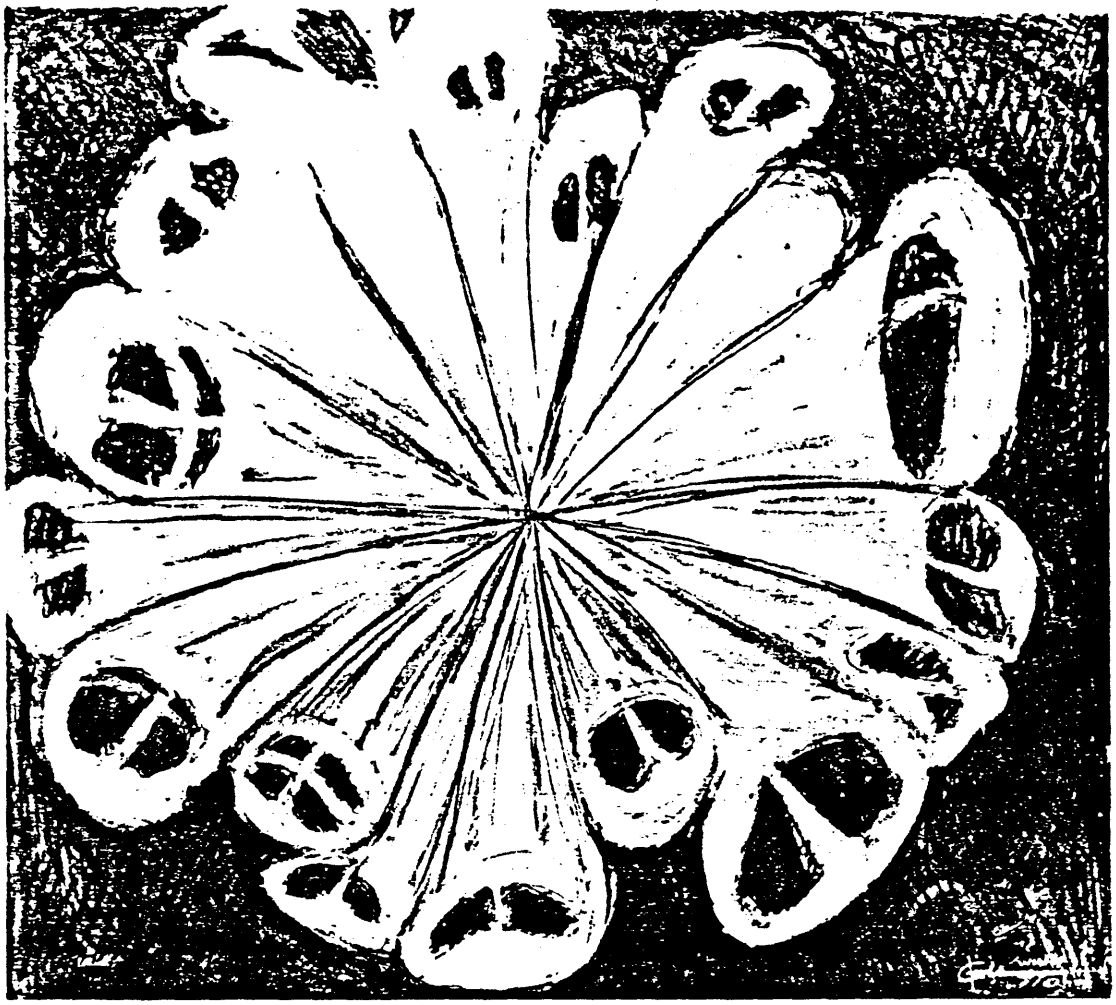
One of the most important parts of the entire WHIPS process was the interaction with the people that helped create it. I had the help of many organizations as well as individuals over the two-year process.

I spoke to Joan Luria of the M.I.T. Museum in 1983 and coordinated an exhibit which would display the proposals, the drawings and the laser refractions in order to develop some awareness toward the project. It opened Febuary13, 1984 and ran through the end of May,1984.

This same exhibit was eventually moved to the Woods Hole Gallery in hopes of bringing more exposure to the work. The exhibitions were originally intended as a vehicle for raising money for the project and from them two commissions were acquired. From one of them materials (plastic and helium) were obtained.

I made a slide presentation to Lt. T.E. Hobaica (jg), U.S. Coast Guard the Chief of Boating Standards/ Affairs Branch in Boston and discussed the idea for what at that time had been the Geryonia idea. I applied for what the Coast Guard calls a 'marine event.' The event was to take place in a relatively well travelled marine thoroughfare, the Woods Hole Passage. One of the major concerns of the Coast Guard was that this lane would be clear for the New Bedford Ferry, "Schiamonchi." I agreed to those terms saying that the event would primarily take place to the south of a small island (actually a rock bed) called Pine Island off of the island of Nonamesset. the only

W.H.I.P.S.



CYCLOSALPA

Drawing for an inflatable sculpture

WOODS HOLE INFLATABLE PERFORMANCE SCULPTURE

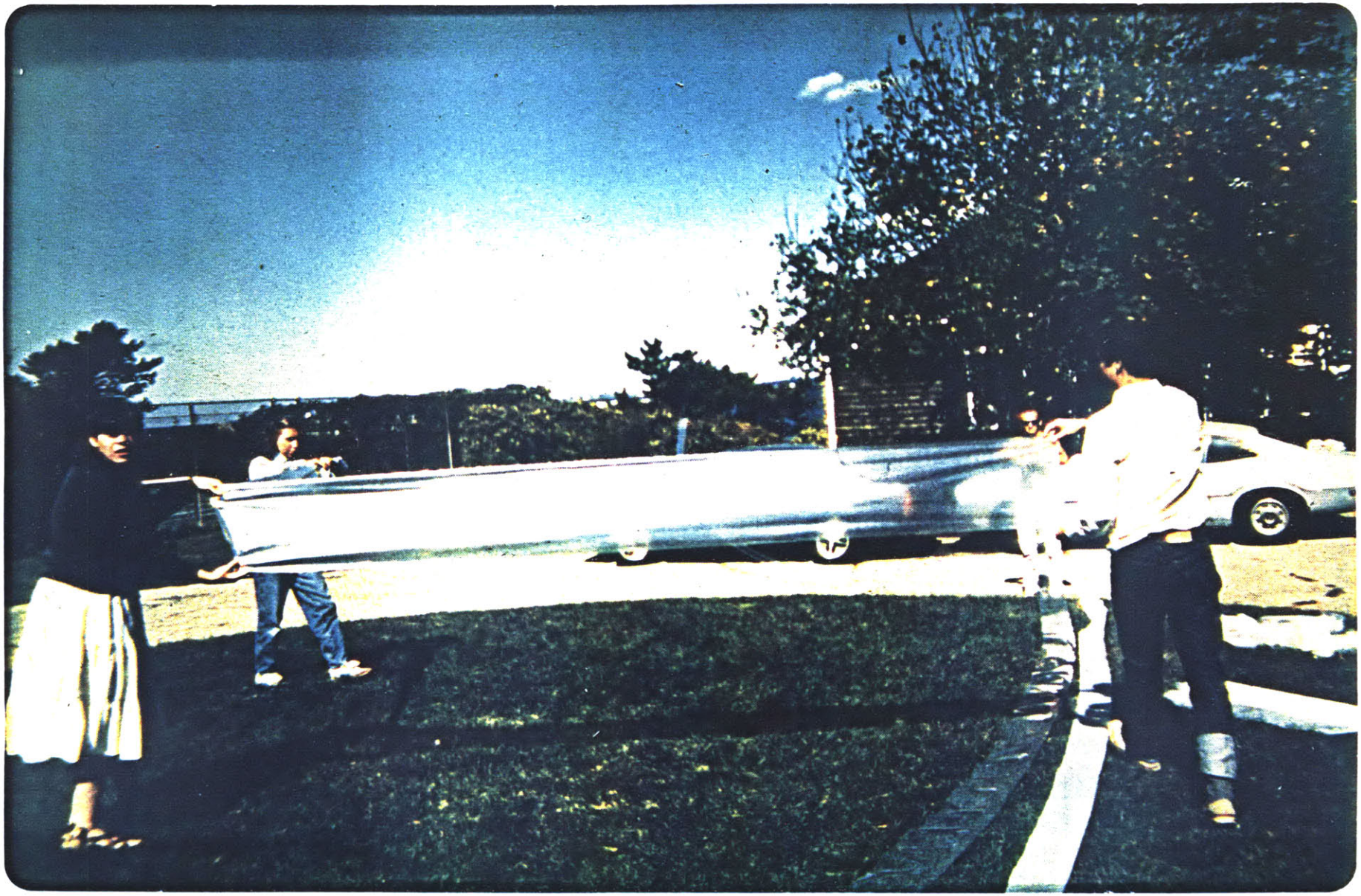
Drawings, charts and laser refractions by Jonathan Goldman of MIT's Center for Advanced Visual Studies for a proposed environmental project

Opening reception
February 14, 1984 5-7PM

Public exhibition
February 15 - ~~March 31~~ May 31, 1984
9AM - 5PM Monday thru Friday

MIT Museum
265 ~~256~~ Massachusetts Avenue
Cambridge, MA 02139

#36. Coast Guard and Crew Photo courtesy of Marty Carlock, 9/16/84



#37. Assembling and Organizing Polyethylene Photo courtesy of Marty Carlock, 9/16/84

other concern expressed by the Coast Guard was that the event take place after Labor Day because of the traffic difficulties they estimated for that weekend. This was a limiting factor in terms of an audience, but I made the concession with the notion that the performance was for Woods Hole community, and those of its lingering "summer" commmunity could stay if they wanted to; otherwise they would have to depend on secondary media (documentation) or future work.

A local notice to mariners was issued by the Cost Guard on the day of the performance to inform those in the area of the event. This bulletin, broadcast over ship-to-ship radio frequencies, was actually pretty humorous. It went something like this: "Notice to all captains in the vicinity of Woods Hole; Please be advised of a large plastic jellyfish located in the waters in and around the Woods Hole/Great Harbor area. Use caution when passing."

Once the permit for the event had been approved I had to meet with the Commander at U.S. Coast Guard Group Woods Hole. By this time I had conducted some of the Cyclosalpa Sketches, so instead of the slide presentation I showed the Commander and the Chief Petty Officer as well as some of the crew the video footage, explaining the ideas behind it and what the activities were to be like on the day of the performance.

They were enthusiastic, although there was the occasional mention of 'gigantic condoms.' From the enthusiasm that was generated, they offered a Boston Whaler with two crew members as an on-site

#38. Loading the Helium Tanks on to the Seatruck Photo courtesy of Marty Carlock, 9/16/84

DEPARTMENT OF TRANSPORTATION U. S. COAST GUARD CG-4424 (Rev. 6-77)	PERMIT FOR MARINE EVENT	DATE APPROVED 24 April 84
NAME OF EVENT: Woods Hole Inflatable Perform.	LOCATION: Woods Hole, MA	DATE OF EVENT: 09/15-16/84
SPONSORING ORGANIZATION: Jonathan Goldman	NAME OF REPRESENTATIVE: Jonathan Goldman	TITLE:

Your application for the following event is approved. Special services to be rendered by the Coast Guard are listed. You are reminded that your organization is primarily responsible for safety in the regatta area and that this permit does not relieve you of such responsibility. Participants shall be adequately briefed and their boats equipped as required by law. A permit may also be required by a state, county or municipal agency. This authorization grants no exemption from state or local ordinances. In the event of any change in the information furnished in your application you will notify this office.

☒ There ***will not be*** a Special Local Regulation issued. No restriction is placed on the use of any navigable waters by other parties. Your event shall not obstruct any channel or normal shipping lane, or interfere with any aid to navigation. The Committeeman in Charge shall control participants to prevent conditions hazardous to other craft in the area.

☐ There ***will be*** a Special Local Regulation issued establishing a restricted area and other controls. You will be provided a copy for guidance. The Committeeman in Charge shall control participants within the restricted area to prevent conditions hazardous to other craft in the area.

☒ There ***will be*** a Local Notice to Mariners issued to inform maritime interests and solicit their cooperation.

☐ There ***will not be*** a Regatta Patrol assigned by the Coast Guard.

☐ There ***will be*** a Regatta Patrol assigned by the Coast Guard. The attached instruction for Patrol Commanders outlines their responsibility and authority. You should work out specific details with the Patrol Commander.

☐ ***Additional safety equipment*** is stipulated below.

Assignment of a Coast Guard Patrol for your event is at the discretion of:

Commander
U.S. Coast Guard Group Woods Hole
Woods Hole, MA 02543
Tel: (617) 548-1700

The total personnel capacity of all the chase boats should be equal to or greater than the number of participants. This is necessary to ensure room for all participants should the need arrive to transfer them to the chase boats.

It is your responsibility, as race sponsor, to ensure that the participants in your event understand that they are subject to the Navigation Rules of the Road, and that they do not automatically become the "stand on" (privileged) vessel simply by virtue of their participating in a marine event. This is especially true in meeting, crossing or overtaking situations between event participants and vessels constrained by their draft or vessels restricted in their ability to maneuver.

You are reminded that you, as sponsor, are responsible for conducting this event in as safe a manner as possible. This responsibility includes control of spectator craft in the area of your event. It is suggested that participants who disregard the rules of the road or who are observed to operate their vessel negligently be barred from this event and any future events your organization may sponsor. In this way, unnecessary tragedies and property damage may be avoided.

Best wishes for a successful event.

T. E. HOBAICA
Lieutenant (jg), U. S. Coast Guard
Chief, Boating Standards/Affairs Branch
By direction of the Commander
First Coast Guard District

PREVIOUS EDITIONS MAY BE USED

☆U.S. G.P.O. 1977-727-864/865

monitor. These two guys were very patient, as was the crew, (most of whom had traveled from Philadelphia to help).

Others, such as Professor Charles Sodini from the Electrical Engineering Department at M.I.T., Stephen P. McElheny, Jeffrey Higgins, and Thom Mayhew came from surrounding areas. Professor Sodini was very helpful in developing the ideas for sound and the inflatable tubes. He had originally sponsored a Undergraduate Research Opportunities Program volunteer to help with the manufacturing and design of the sound system. I had proposed using solar cells to create a trigger switch for an interactive system using hand-held lights which, once focussed on to the jellyfish would cause a tone. From this idea I imagined an audience could literally play the large-scale sculpture. Unfortunately, because of lack of funding support, the undergrad was forced to leave the project. At some point I will complete that idea.

The main support boat the "Seatruck" had been acquired through Hovey Clifford, a biologist at W.H.O.I. and placed under the command of M.I.T./W.H.O.I. graduate student Jim Newman. It was through Newman that I was able to get as far as I did in terms of equipment acquisition. On board the "Seatruck" were John Solomon, Gloria Lee, Marty Carlock a freelance writer/reporter, Katie Albers and Charlie Sodini.

We had placed aproximately 10-12 tanks of helium,

and the variety of plastic tubing supplied by Dana Films on the floorboards of the "Seatruck". On the dock at Penzance Point I explained with a drawn story board my ideas for the plastic tubing and, once inflated, I suggested that everyone tie off the end of each one, hand it to me, where as an amalgam we would attach it to a long line and a weight throw it over board and let the current take it. I expected that some of the tubes float in the air (the 1.5ml X 8" variety) and others to float on the water.

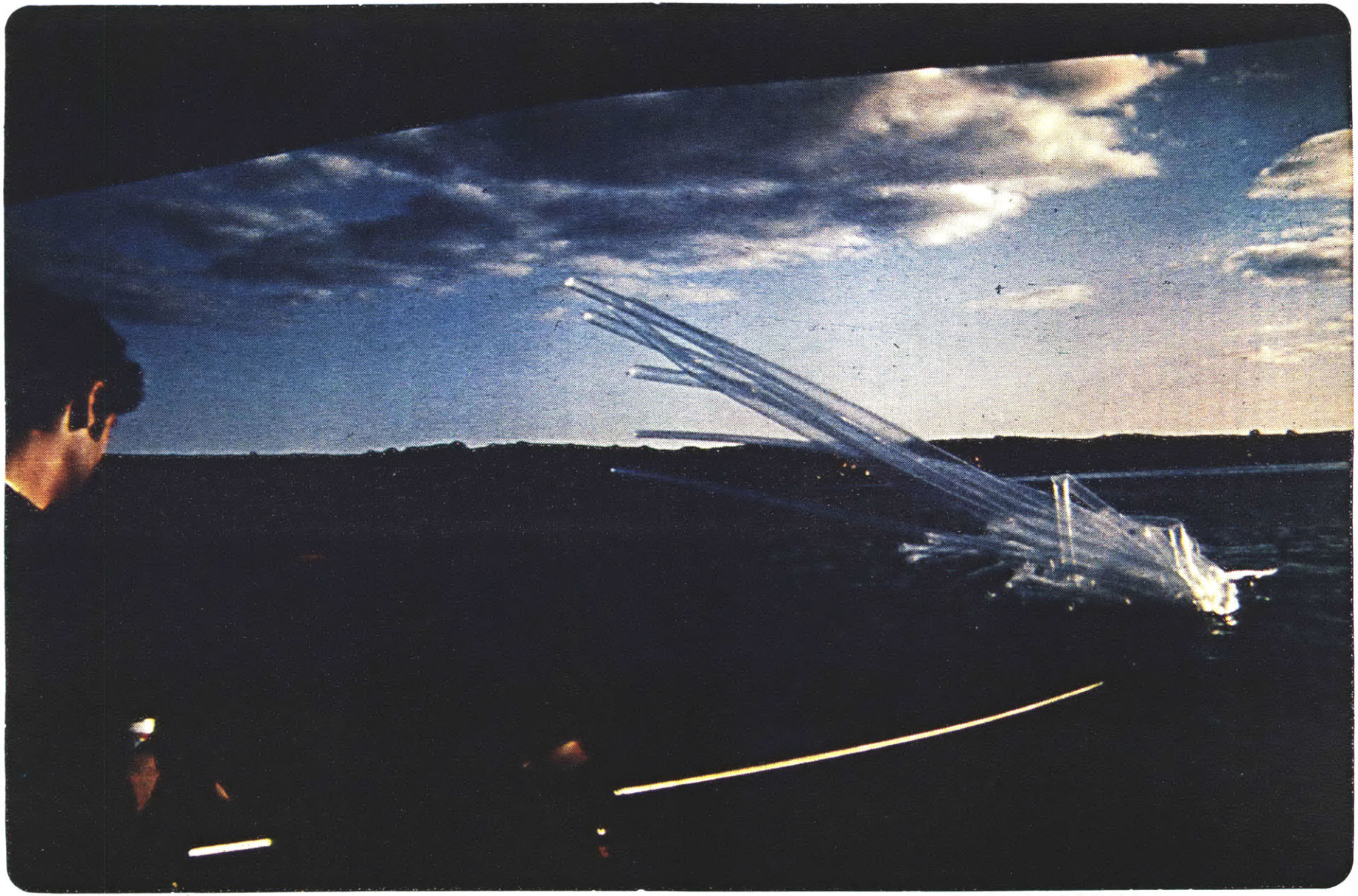
We set out to the Hole via a small inlet called the Gut. (I had arranged with Hovey Clifford to have the same Boston Whaler used for the Cyclosalpa Sketches, but the battery cable had been severed in a hurricane the day before, so I too was aboard).

At the end of the day, with all the crew assembled we all celebrated with a large dinner at my family's house.

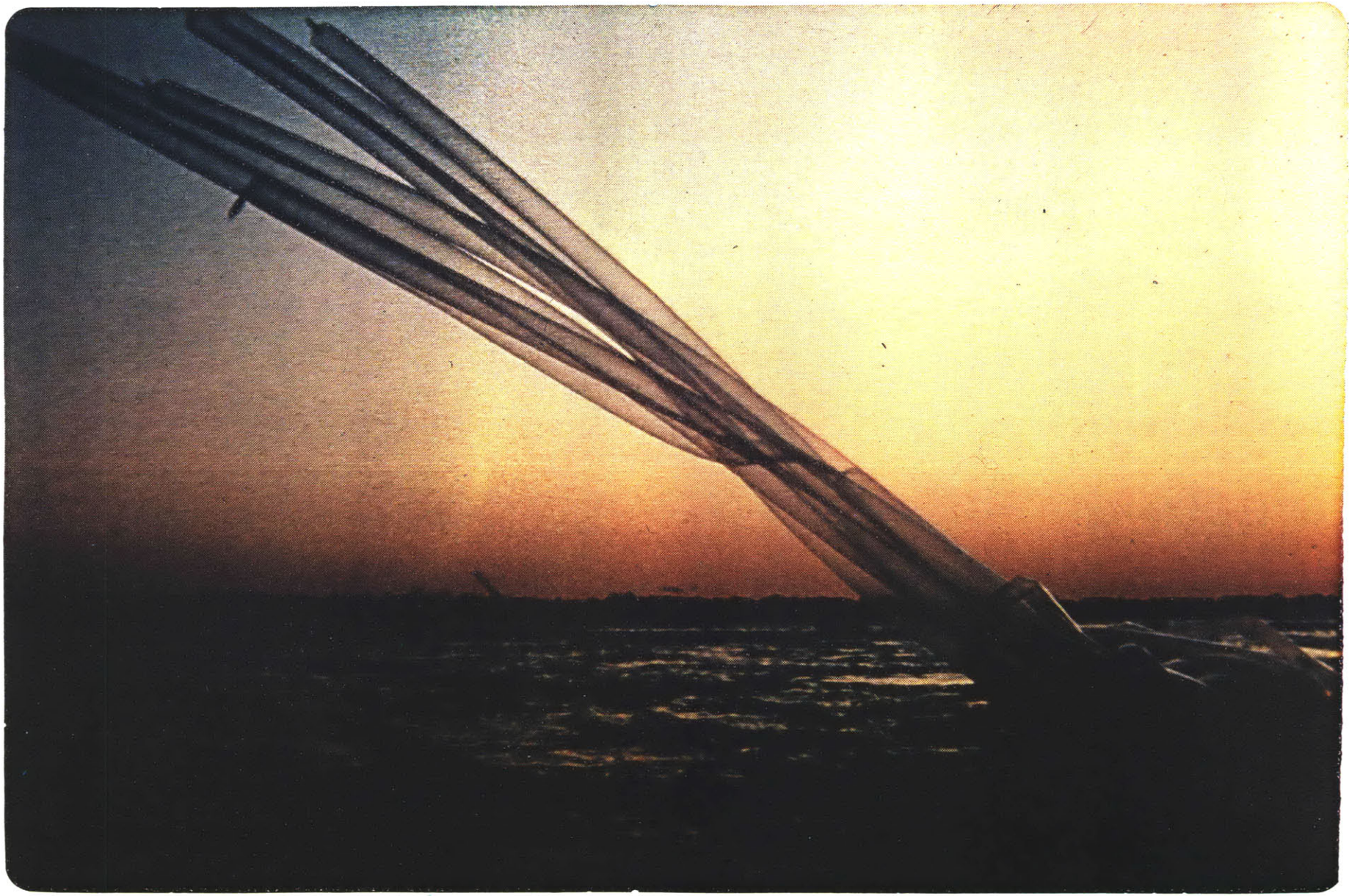
#39. Inflation Silhouette Photo courtesy of Marty Carlock, 9/16/84

#40. WHIPS Tentacles Photo courtesy of Marty Carlock, 9/16/84

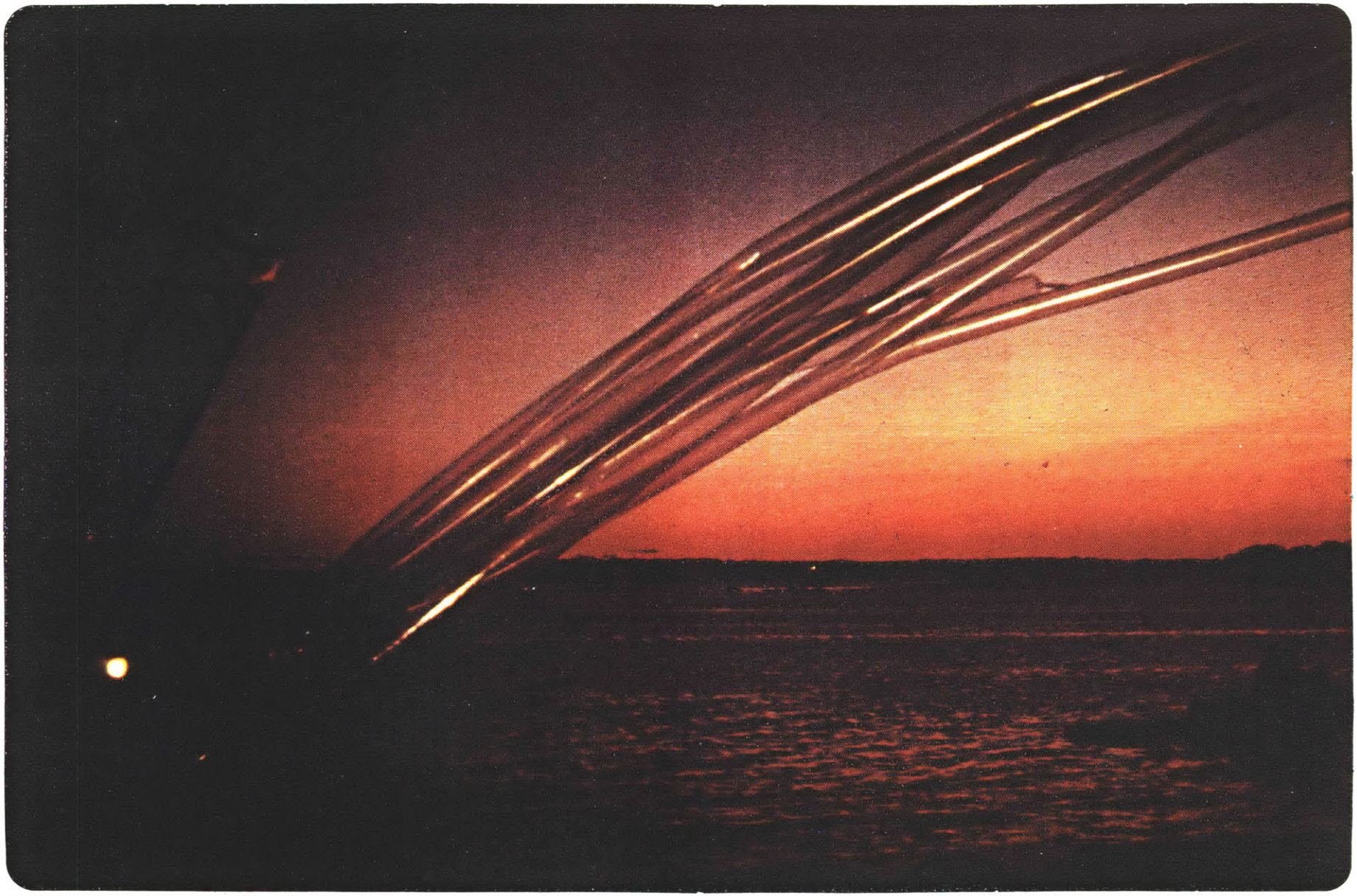
#41. WHIPS Tentacles Photo courtesy of Marty Carlock, 9/10/84



#42. WHIPS Tentacles on Journey through the Passage Photo courtesy of Marty Carlock, 9/16/84



#43. WHIPS Tentacles on Journey through the Passage Photo courtesy of Marty Carlock, 9/16/84



#44. Tentacles at Sunset Photo courtesy of Marty Carlock, 9/16/84

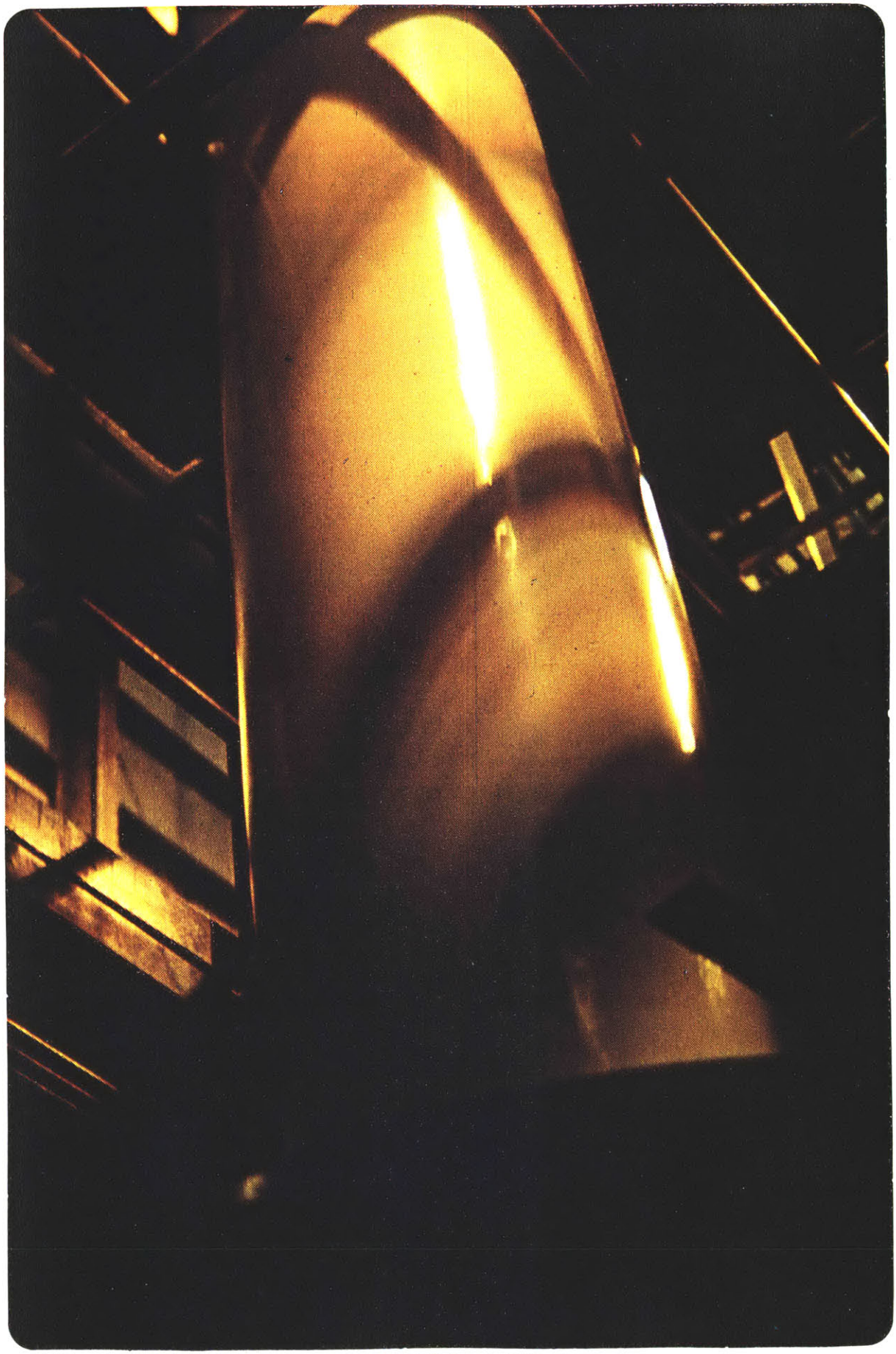
The Flight of the Woods Hole Squid

In early September I had the good fortune to meet Bob Simoncini and Gerald "Gus" Gustafson of Dana Films in Westboro. I had been searching for a long time to find a plastic extruder company that would be interested in supplying me with polyethylene. Through these incredibly generous men, I was given ample tubing for the WHIPS project. In addition, I was also introduced to a vital part of the process of making an event like WHIPS possible.

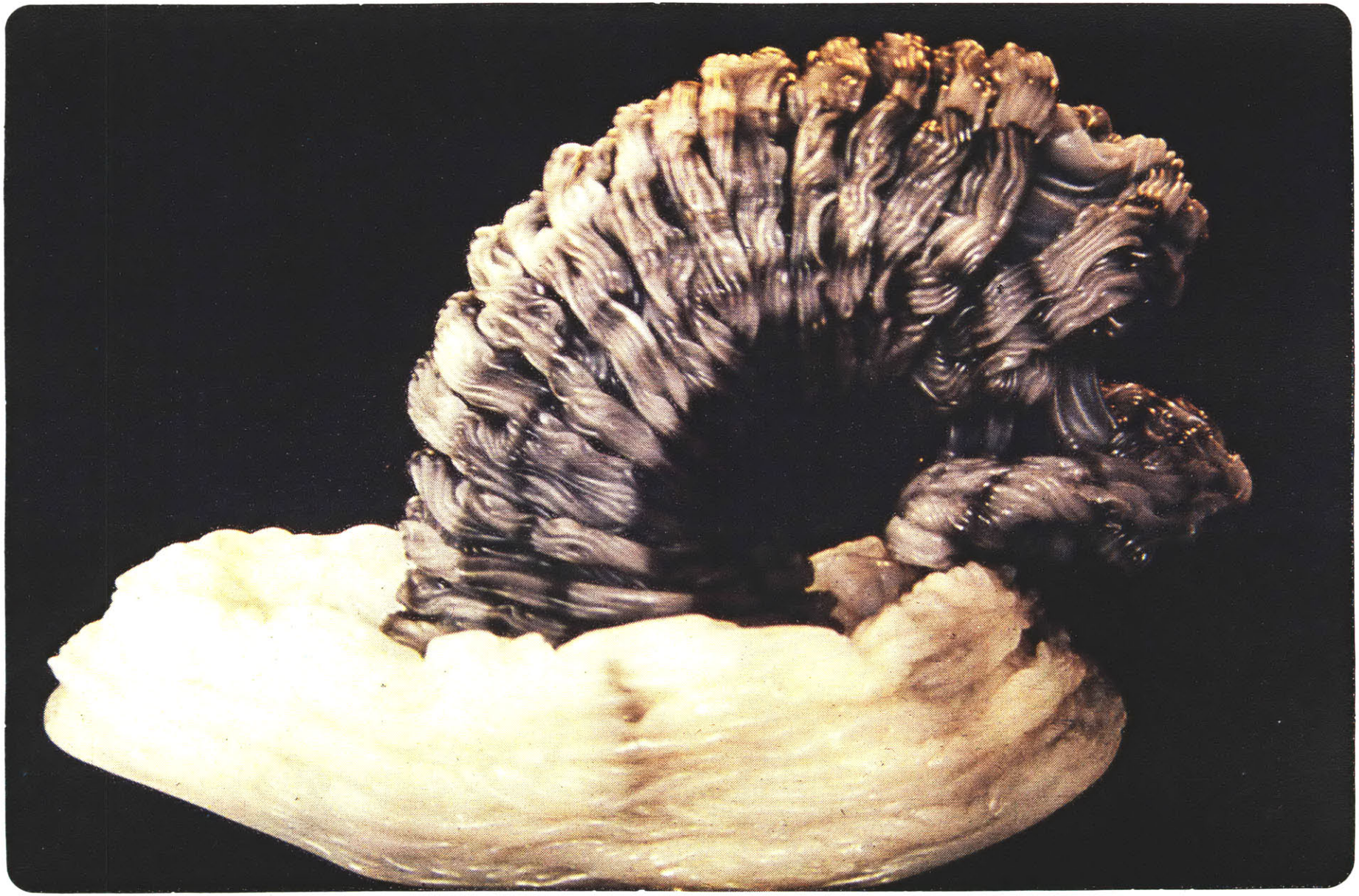
At Danafilms I was given a tour of the manufacturing facitlities and explained about the process of extrusion. Without question, this background information on the material I was using was invaluable.

The process of manufacturing polyethylene is very similar to the blowing of bubbles. At Dana Films, millions of tiny pieces of polyethylene stored in silos are melted at high temperatures and extruded or forced out of a die with a large blower. A constant stream of air pressure inflates a tube of plastic which is carried manually up to a height of approximately 40' and then fed through a series of rollers which which pull the tube automatically at an even rate. The first four feet of the tube is molten, and it frequently ruptures when dirt or other foreign matters hit it. These ruptures form what the extruders at the facility call "blobs." I found these to be incredibly beautiful organic forms, and as 'found' elements I assembled them in a variety of ways. They reminded me of coral.

Originally I gave a slide presentation of the work



#45. Extrusion Process courtesy of Dana Films, Inc.



#46. Extrusion Phenomenon found polyethylene distortion

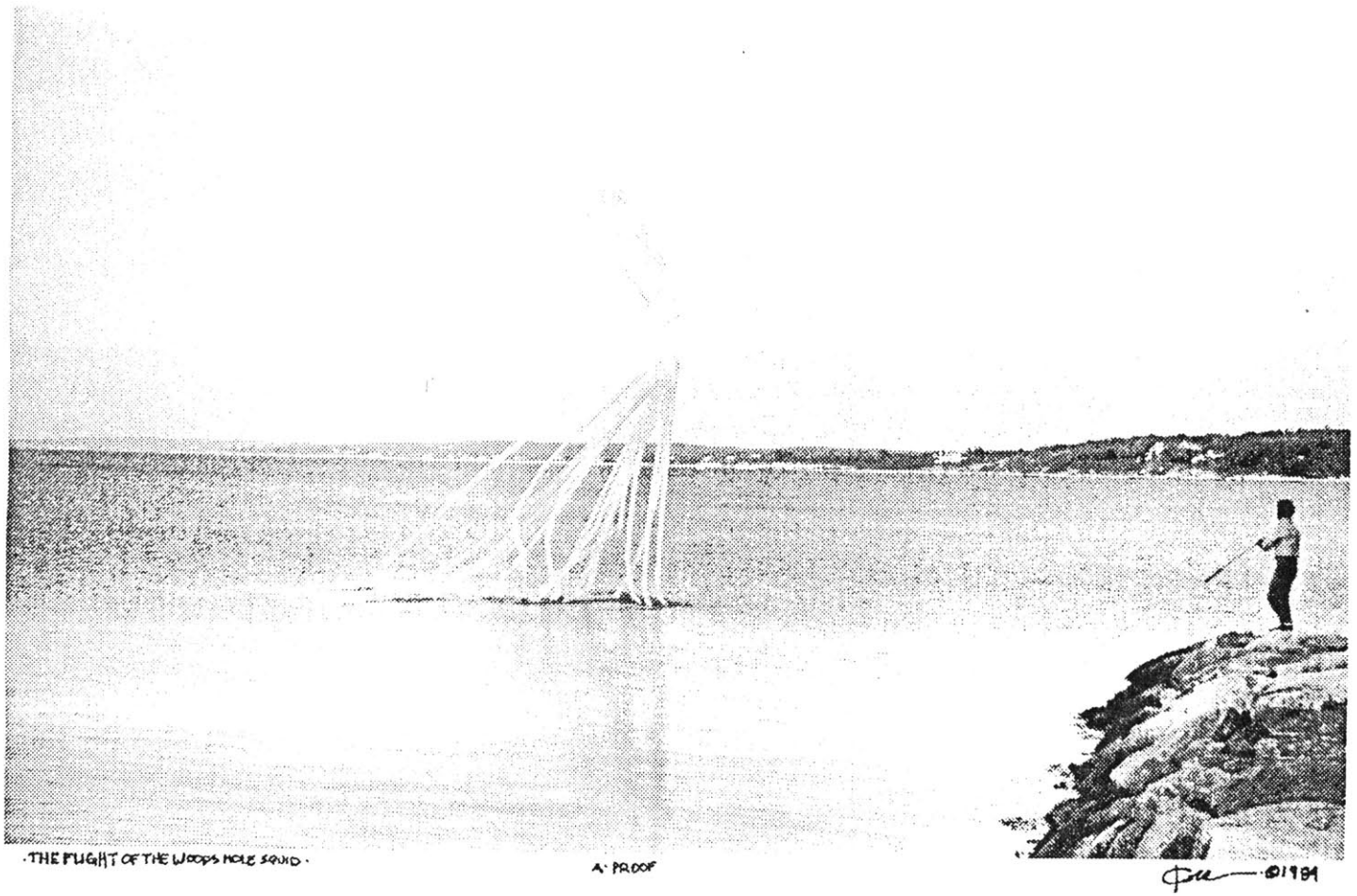
I had been doing, and from that they offered to give me some excess polyethylene. From the variety of tubing that they gave me, ranging in width of 8" to 6' and from 1.5ml to 4ml thick I conducted several experiments.

The most successful was The Flight of the Woods Hole Squid. In early September, 1984, Andrew Lipnick and I inflated 25 tubes in Woods Hole. We used some of the high density polyethylene tubing (8" X 35') supplied by Danafilm for the tentatacles, but found it to be too heavy to float, so we used 1.5ml (8" X 35') which was so light when inflated with helium, that when we tied off each end (it was too thin to heat-seal) we could throw them to each other like long clear plastic inflatable sausages.

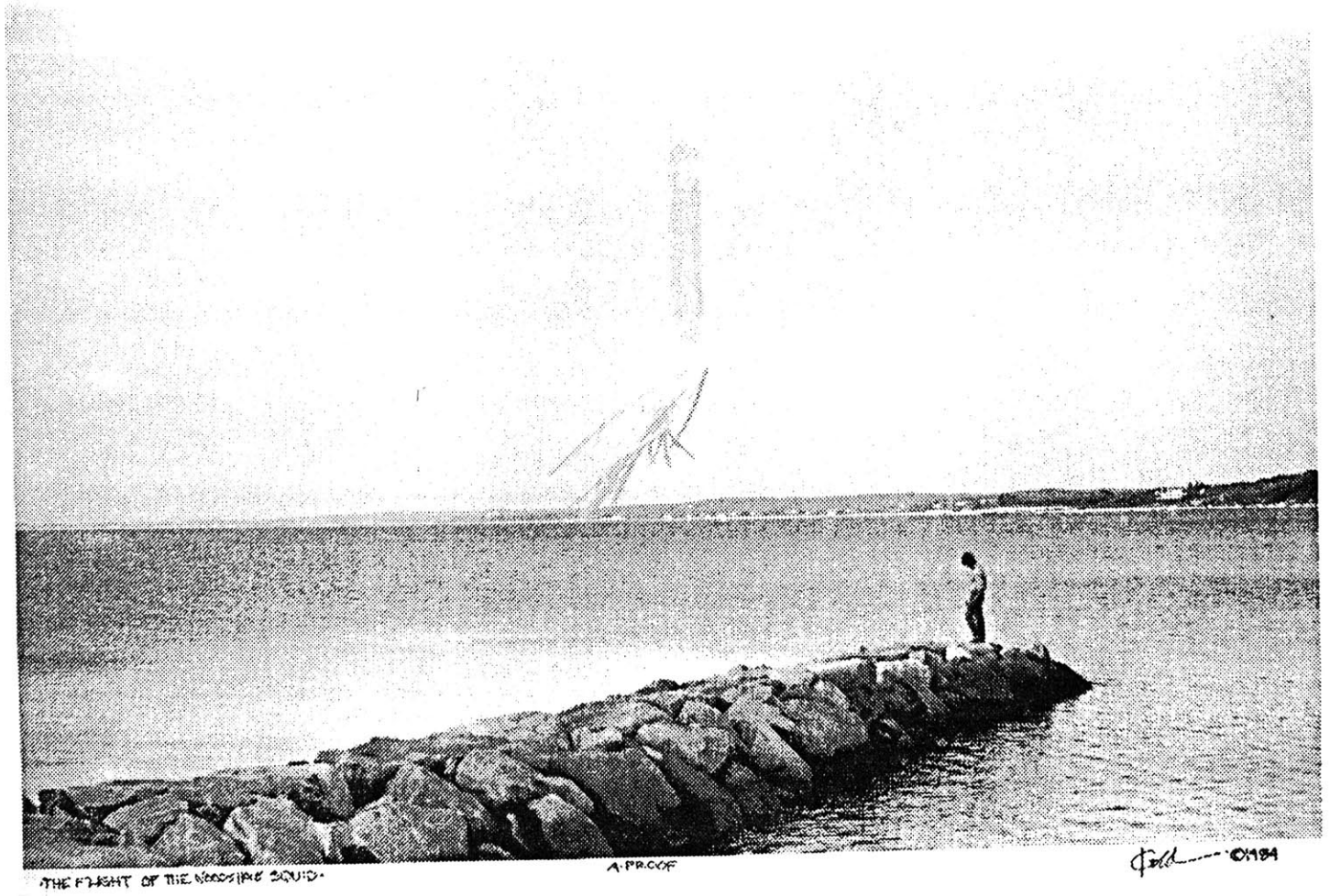
There was a good contrast between the semi-opaque high density tubing and the lighter 1.5ml eight-inch tubing. When we attached the 24 thin tubes to a 6' wide 10' high tapered clear tube and flew it off the jetty at my grandmother's I realized that the heavier tubes added more weight and variety to the movement of the tentacles.

It is unfortunate that this piece was not videotaped. As a kinetic piece, it really solved for me the need to render a sculpture in the nighttime sky which would draw a visual parallel between the sky and the water. Otto Piene's Sky Anemone is one of the best examples of sculpture which suggests the important relationship of these two fluid environments.

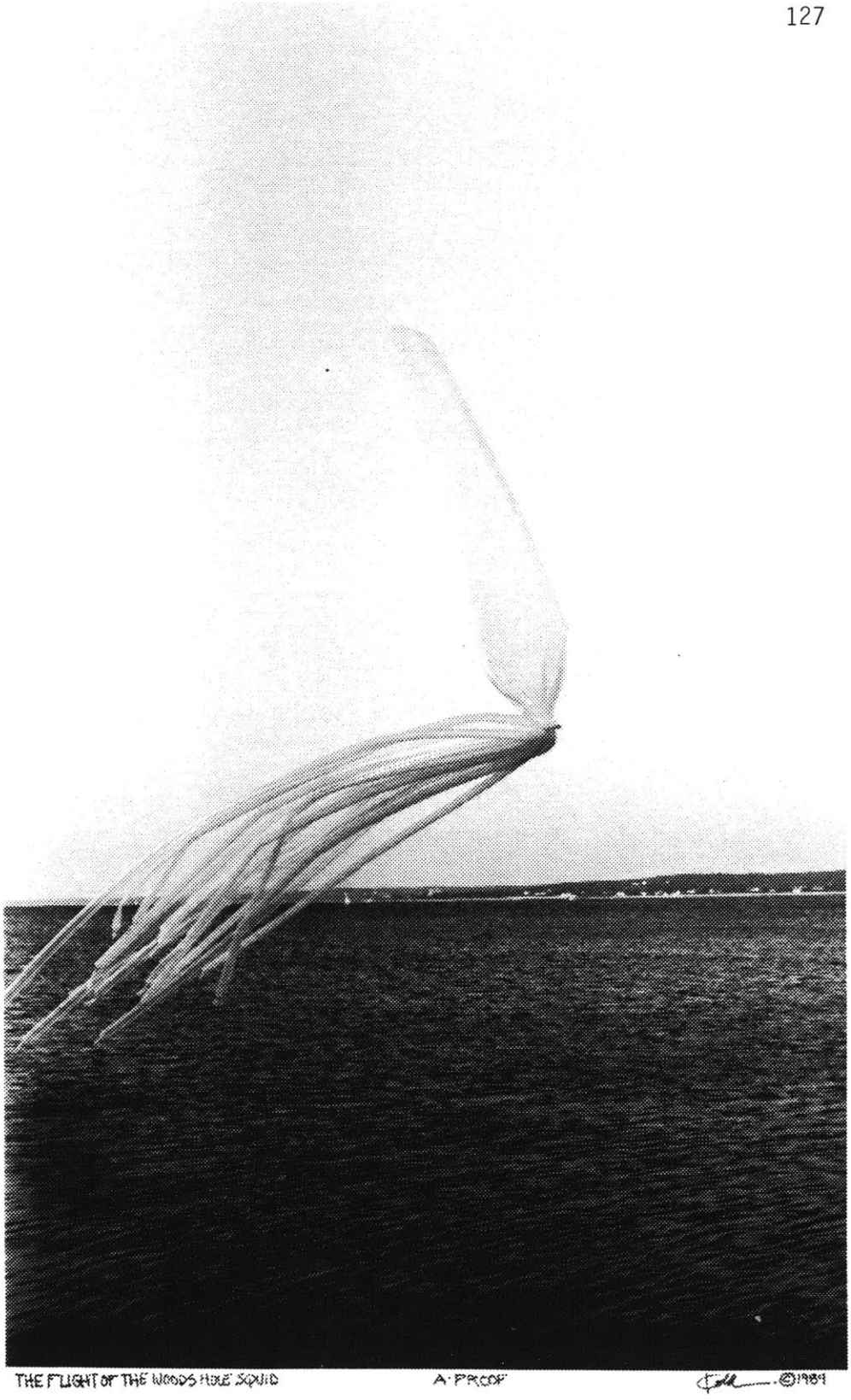
Lipnick and I did take the Woods Hole Squid for a



#47. Flight of the Woods Hole Squid photograph



#48. Flight of the Woods Hole Squid photograph



The Flight of the Woods Hole Squid

flight over Buzzards Bay that night and when it flew in front of the moon (it was full that night) the piece lit up beautifully. The wind was out of the southwest and the piece floated in it as we chased it in the Boston Whaler.

I heard later that someone on a neighboring beach had seen it and thought it was a huge condom and actually ran to get others to see it so they wouldn't be thought of a crazy when attempting to explain the phenomenon to others.

Sound and Inflatable Polyethylene Tubes

With Andrew Lipnick, a sound engineer and musician, I decided to find out what sounds could be made from the interior of an inflatable polyethylene tube.

We suspended a one-inch piezo electric disk between two pieces of 60 lb test monofilament, each strand approximately twenty feet long. One end was affixed to the top part of the interior of a fourty foot tube, while the other end came out the inflation end (that end used to inflate the tube with helium). The piece from the inflation end would be tied to a weight, an empty helium tank. Two leads from the piezo electric disks were brought out of the inflation end as wellas the monofilament and were joined into a 1/4" phono jack and plugged into Lipnick's 12 channel mixer.

From the mixer, the audio signal was channelled into a digital delay system as well as to an amplifier and a single speaker. we conducted this experiment on the Kresge Oval, outside of Kresge Auditorium in September, 1984.

As the tube moved in the wind, the monofilament would stretch, causing a change in pitch. When the tube hit the ground it would make a thundering sound which we would repeat using the digital delay. Children came and played with the tube, hit it and caused the plastic to have crinkling sounds. This crinkling, when modified with the digital delay at varying rates and intervals produced interesting water-like sounds. We recorded these sounds for future use in editing

some of the WHIPS footage.

I used original music composed by Lipnick for the two videotapes used in documenting the Cyclosalpa versions. The first piece was from a processed electric guitar piece called The Character of Time; the second, called Luminescent Sea.

Mr. Lipnick was incredibly valuable in the design of the sound for these pieces, not to mention his tenacity as my extra right hand in each of the versions of Cyclosalpa. Together we had wanted to combine the research performed on the Kresge Oval, the sounds from the interior of the inflatable tube, with the tubes that we would use for the WHIPS perormance.

On the day of the performance, after having obtained access to the Marine Biological Laboratory pier Lipnick set up the same configuraton of equipment, but by the time the journey of the tentacle/tubes had been completed, the sun had long since set and the crew aboard the "Seatruck" as well as those on the other support boat were tired after having been out on these boats moving tanks of helium, and inflating tubes all day.

Nonetheless, Lipnick's idea was to use a remote microphone placed inside one of the tubes and with the transmitted sounds, add a different dimension to these inflated tentacles with the use of the digital delayed effects. We do know that this will work, and plans are being made to do this again next summer.

There are other future plans to use the piezo

electric system in tubes as well. In these, the sounds of many inflated tubes hitting each other will the focus of our pursuits.

Appendix of Color Images (for Black and White Reproductions)

1. Tidal Gesture 7' X 41 1/2" Oil pastel on paper
2. Chupa 20' tapered polyethylene tubing, helium, Mylar Tetrahedron, White latex balloons (land-based).
3. The Maids by Jean Genet Palmer Auditorium, Connecticut College, 1980.
4. WHIPS CHART 36" X46" collage of photos, charts, drawings, xerography.
5. The Cretan Theater at Knossos, near Heraklion,Crete.
6. The Approach to the Temple of Athena, the Island of Delos, Greeece.
7. The Amphitheater at Epidaurus, Epidaurus, Greece.
8. The Face of the Earth is Much Like Mine Video still
9. The Face of the Earth is Much Like Mine Video still
10. An Early Remote Laser Carving Frame buffer image at V.L.W. of Stone, scaling grid and computer-aided image of laser path.
11. Rolling Drumlin: A Proposal 19"X30" Pen and ink on Mylar
12. Rolling Drumlin (Detail) 5"X7" Pen and ink on mylar
13. Rolling Drumlin (Detail) 5"X7" Pen and ink on mylar
14. The 1260' Dotted Line (Detail) 220 9"X70" Silvered Mylar sheets stapled to a guard rail, Cambridge, Mass.
15. The 1260' Dotted Line (Detail) 220 9"X70" Silvered Mylar sheets stapled to a guard rail, Cambridge, Mass.
16. Tidal Current Chart from Eldridge Tide and Pilot Book
17. Tethered Woods Hole Rings (Aloft) 8" X10 Felt marker on paper.
18. Through a Liquid Layer Photomontage 8"X10"
19. Woods Hole Rings 8" X10" Felt marker, pastel on paper.
20. Double Helix for Woods Hole: Epistemic Correlation a Life Ladder 10" X 17" pen and ink on paper
21. Geryonia Probiscidalis Color Photograph courtesy of Dr. L. P. Madin, W.H.O.I.
22. Geryonia in Woods Hole Passage 36 " X 50" Felt Marker on paper.
23. Geryonia Model 35" high 4 ml Polyethylene and phosphorescent paint.
24. Geryonia Model II 12' High (when inflated) in studio.
25. Life Luminence 30" X40" Neon-illuminated laser refraction transparency plexiglass, infra red film transparency, and neon tubing.
26. Geryonia Rising Neon-illuminated laser refraction transparency, plexiglass, infra red film transparency, and neon tubing.
27. Helicasalpa Video Still courtesy of Dr. L. P. Madin, W.H.O.I.
28. Cyclosalpa Pinnata by L.P. Madin W.H.O.I. Photograph
29. Cyclosalpa 42 1/2" X 32 1/4" Oil pastel on paper

30. Cyclosalpa model I 13 tapered clear polyethylene inflatable tubes at The Massachusetts Maritime Educators Conference April 6, 1984.

31. Cyclosalpa model I (Moving in Wind) 13 tapered clear polyethylene inflatable tubes at The Massachusetts Maritime Educators Conference April 6, 1984.
32. Sketch for Cyclosalpa in Woods Hole Video still of slow scan collage.
33. Cyclosalpa in Buzzards Bay 40' clear and black polyethylene tubing attached to 9/84 Photo by Fritz Heide
34. Porthole I 42 1/2" X 32 1/4" Oil Pastel on paper (M.I.T. Museum show).
35. Orb Transit 42 1/2" X 32 1/4" Oil pastel on paper (M.I.T. Museum show).
36. Coast Guard and Crew Photo courtesy of Marty Carlock 9/16/84.
37. Assembling and Orgainzing Polyethylene Photo courtesy of Marty Carlock 9/16/84
38. Loading the Helium tanks onto The Seatruck Photo courtesy of Marty Carlock 9/16/84.
39. Inflation Silhouette Photo courtesy of Marty Carlock 9/16/84.
40. WHIPS Tentacles Photograph by Marty Carlock 9/16/84.
41. WHIPS Tentacles Photograph by Marty Carlock 9/16/84.
42. WHIPS Tentacles on Journey through the Passage Photograph by Marty Carlock 9/16/84.
43. WHIPS Tentacles on Journey through the Passage Photograph by Marty Carlock 9/16/84.
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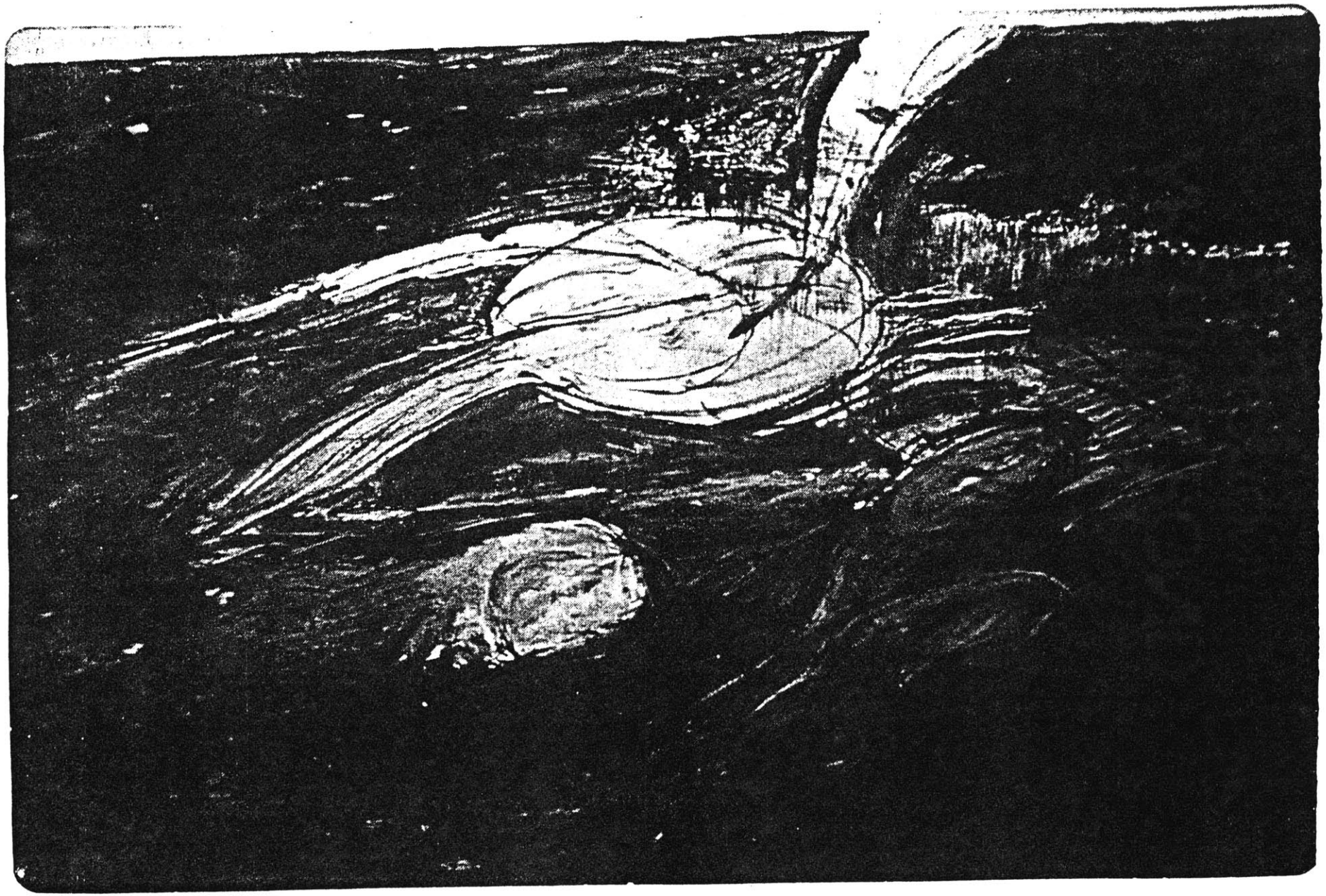
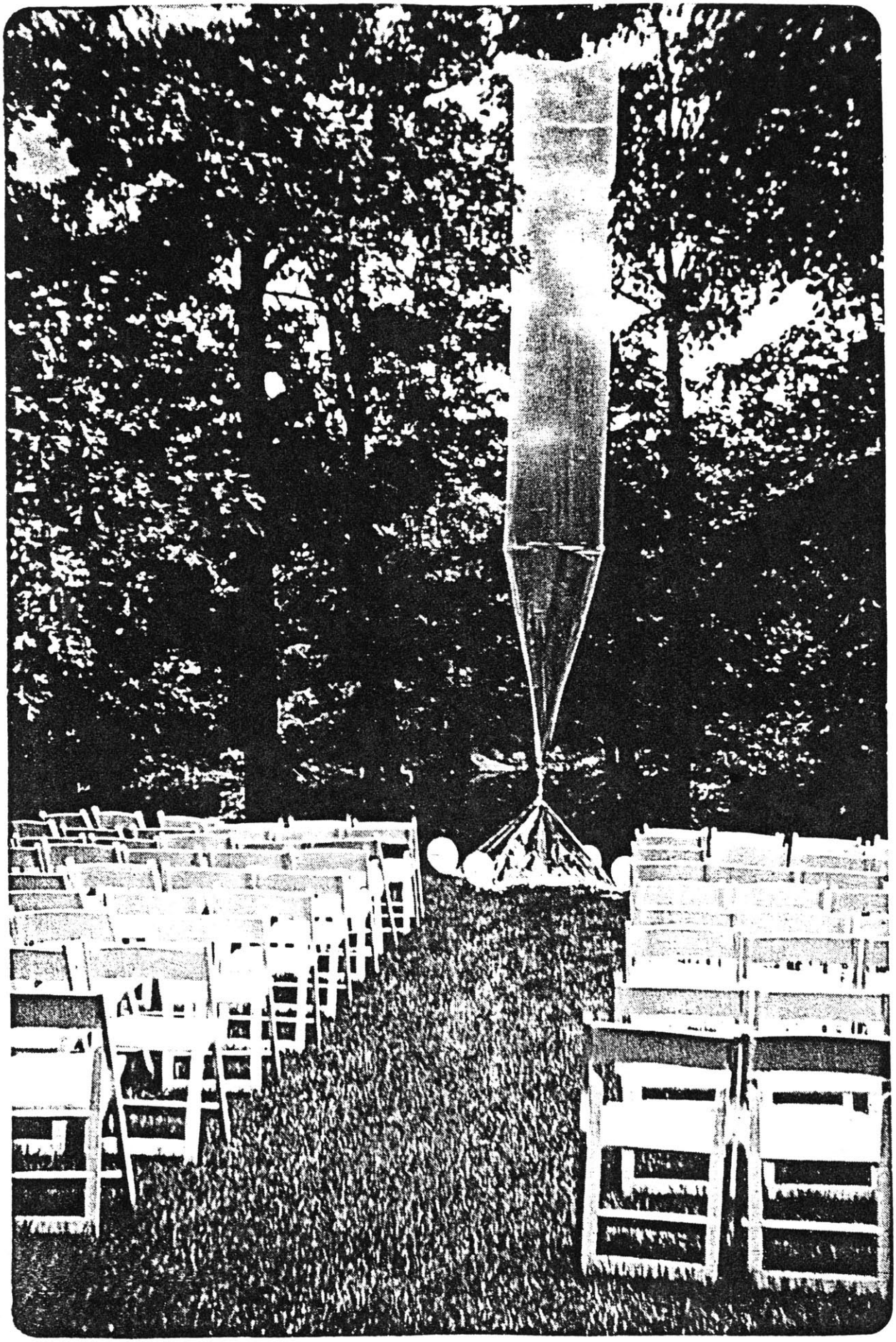
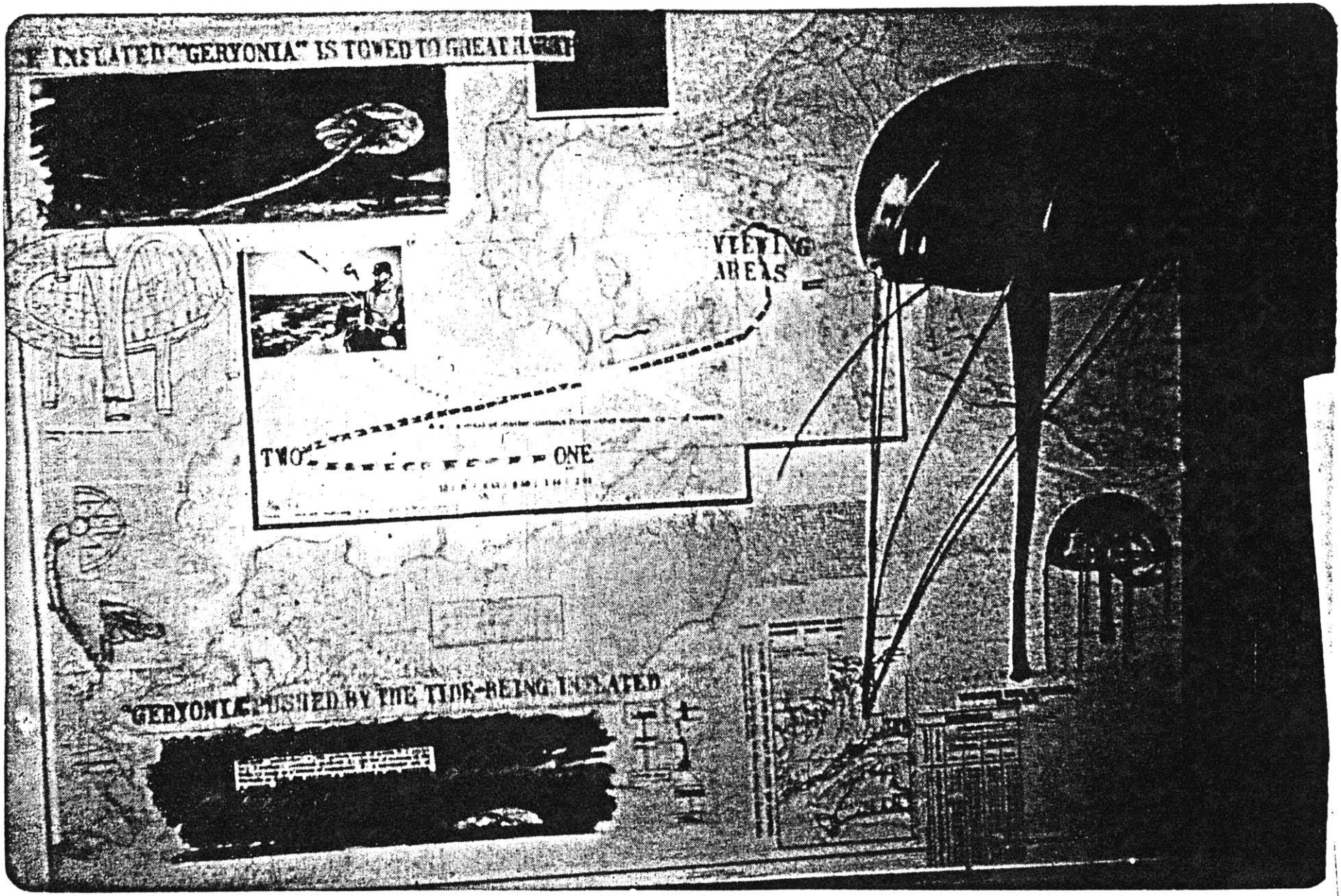
45. Extrusion Process Courtesy of Dana Films Inc.
46. Extrusion Phenomenon found Polyethylene distortion.



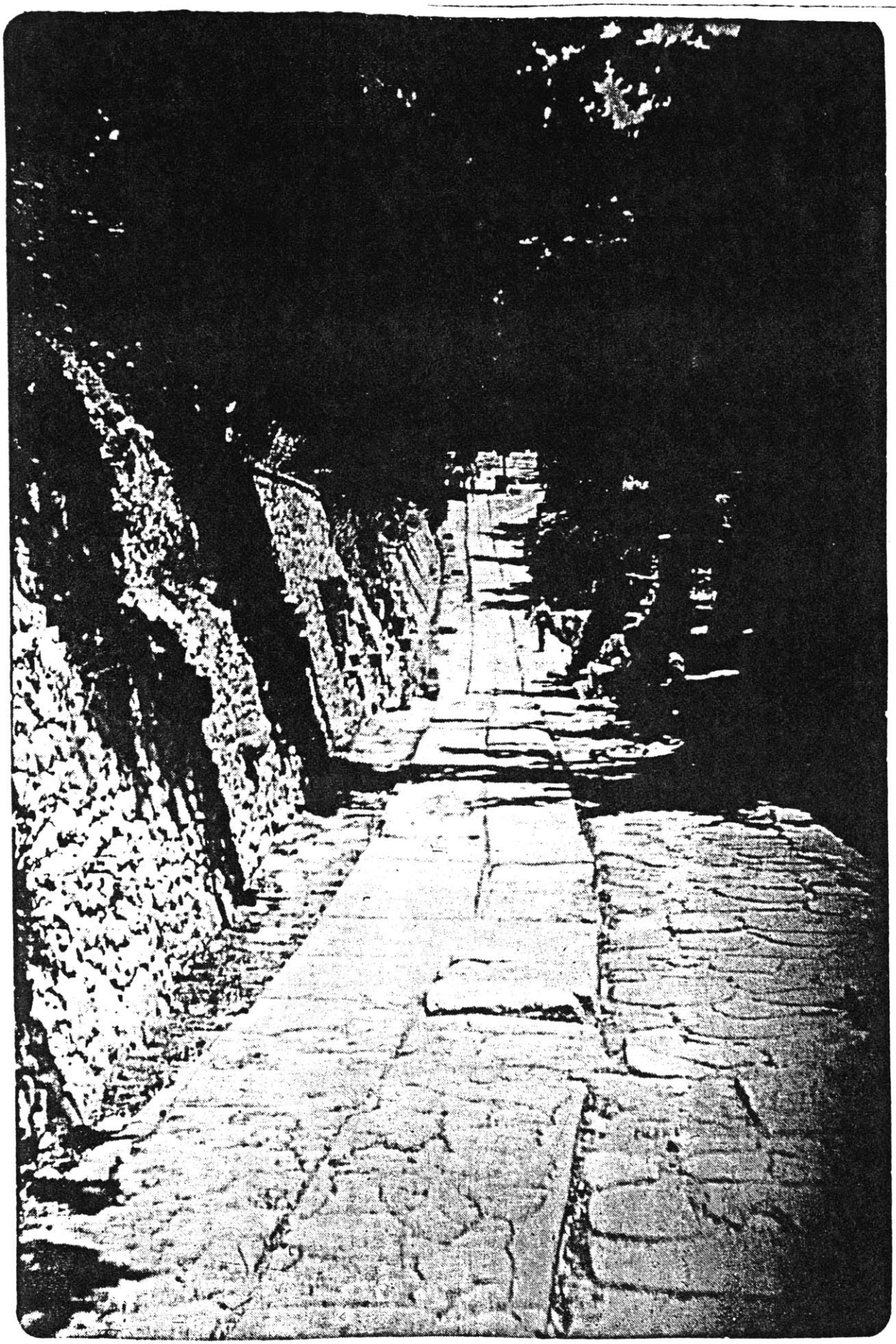
#1. Tidal Gesture, 7' x 41 ½" Oil pastel on paper



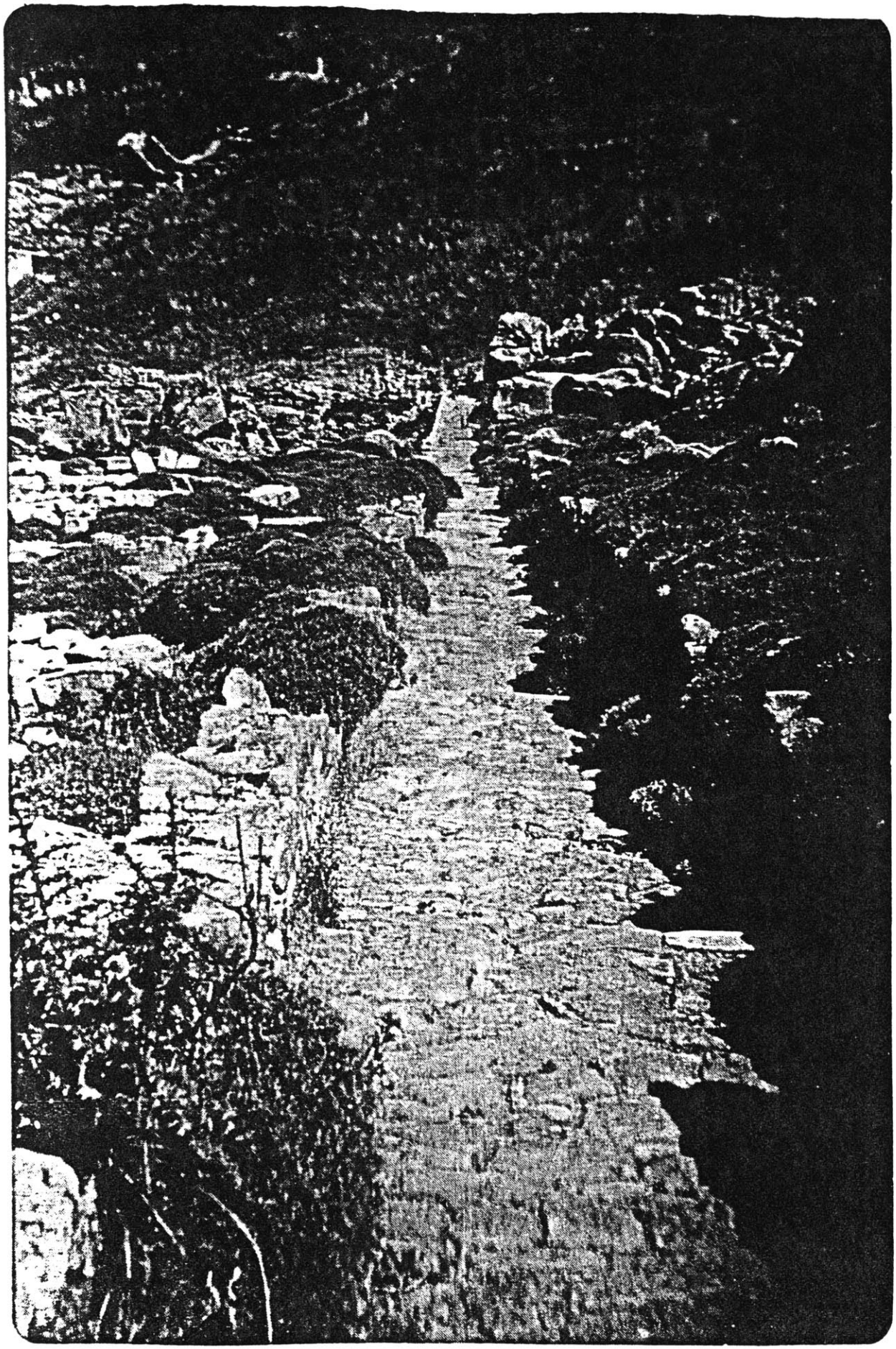
#2. Chupa 20' tapered polyethylene tubing, helium, mylar tetrahedron, white latex balloons (land-based)



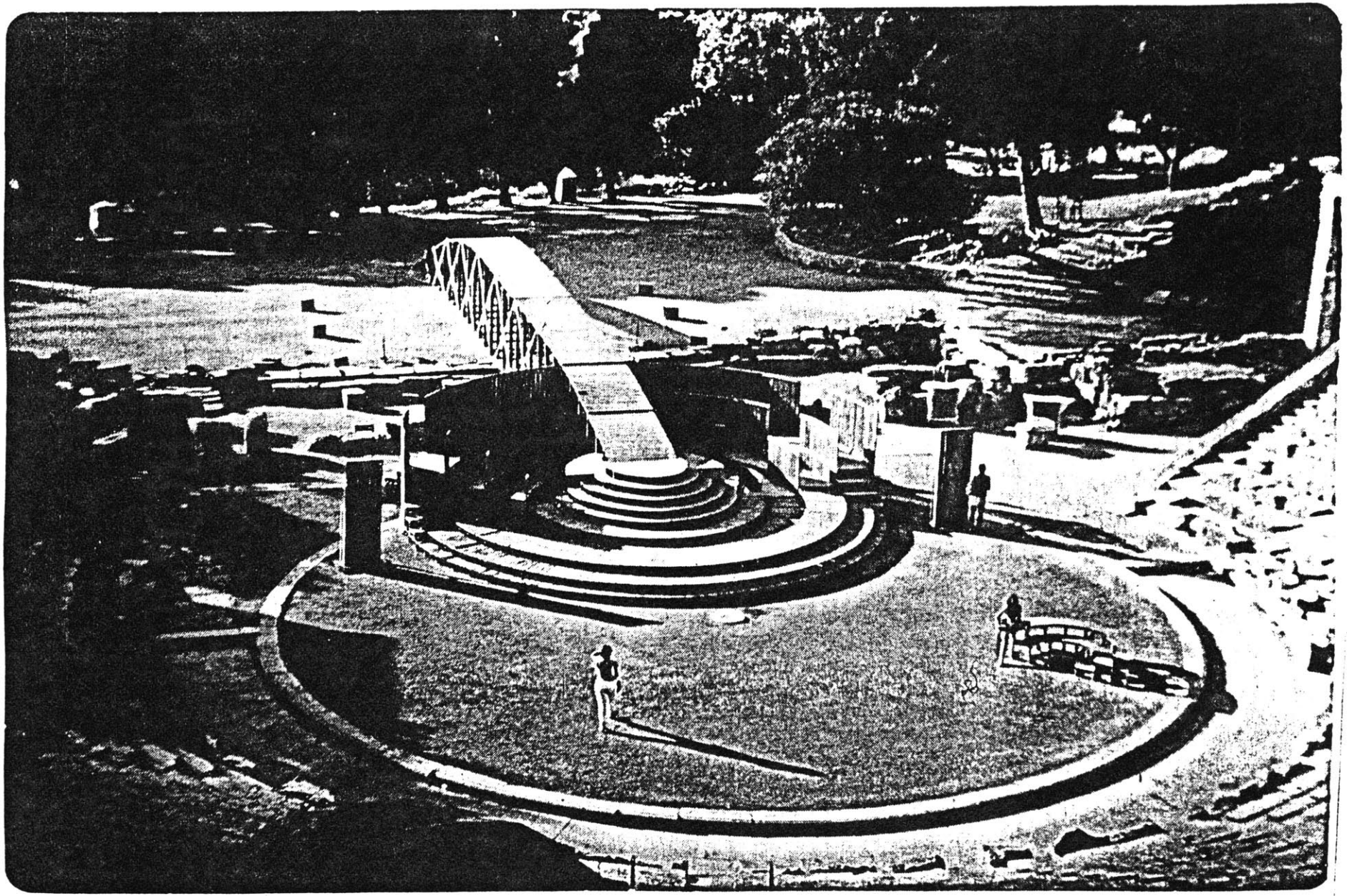
#4. WHIPS Chart 36" x 46" collage of photos, charts, drawings, xerography



#5. The Cretan Theater at Knossos, near Heraklion, Crete

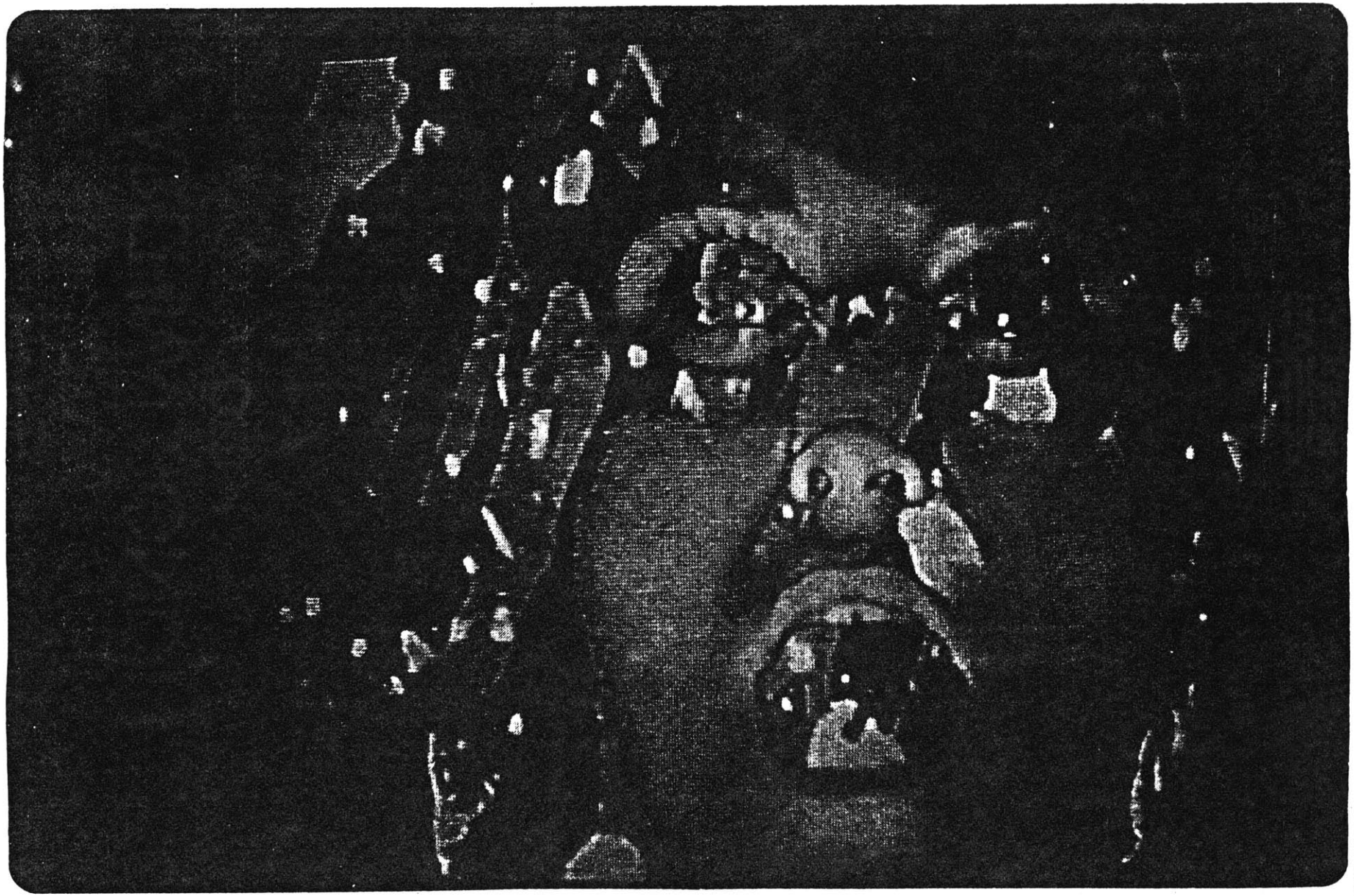


#6. The Approach to the Temple of Athena, the Island of Delos, Greece



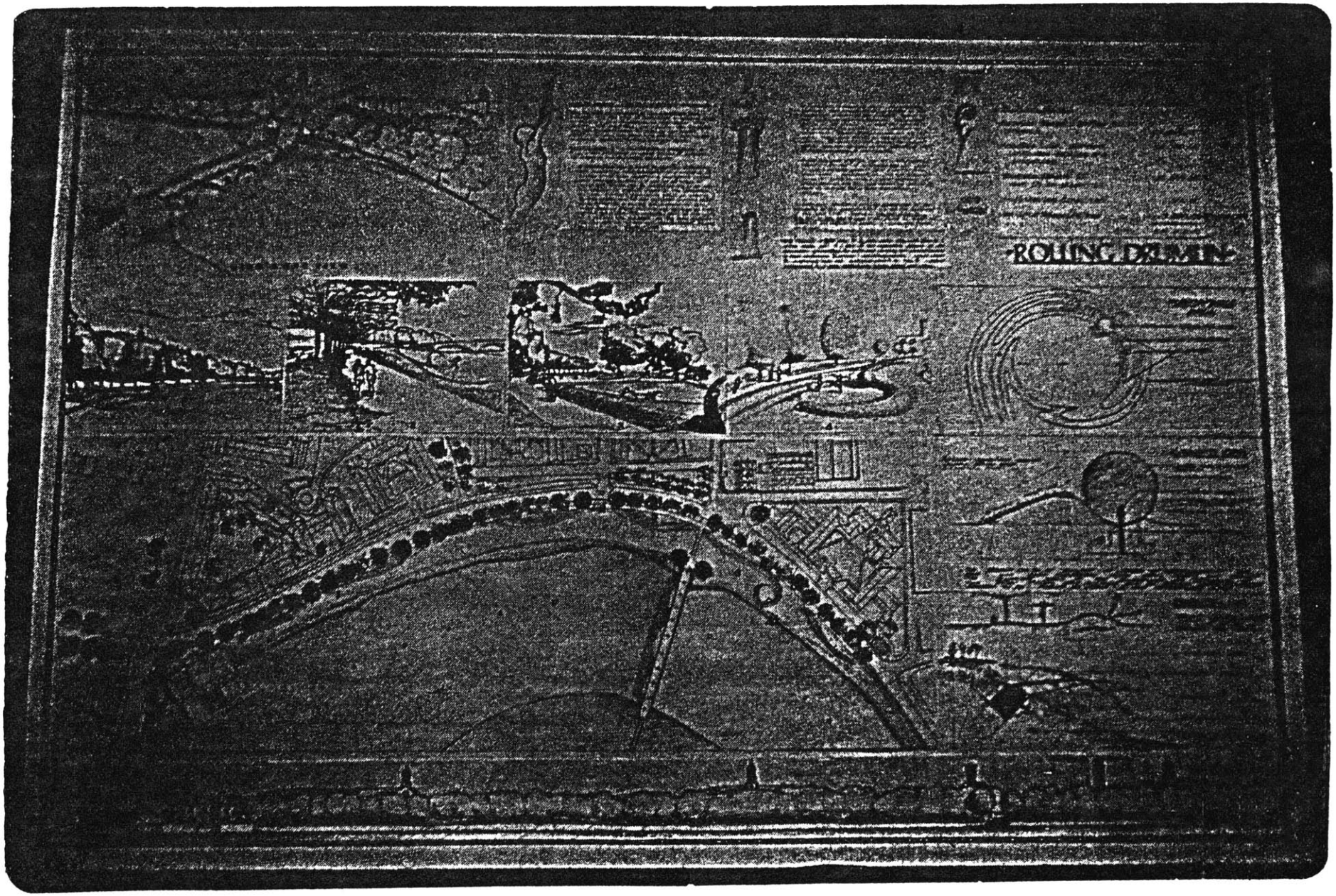
#7. The Amphitheater at Epidaurus, Epidaurus, Greece

#8. The Face of the Earth is Much Like Mine video still

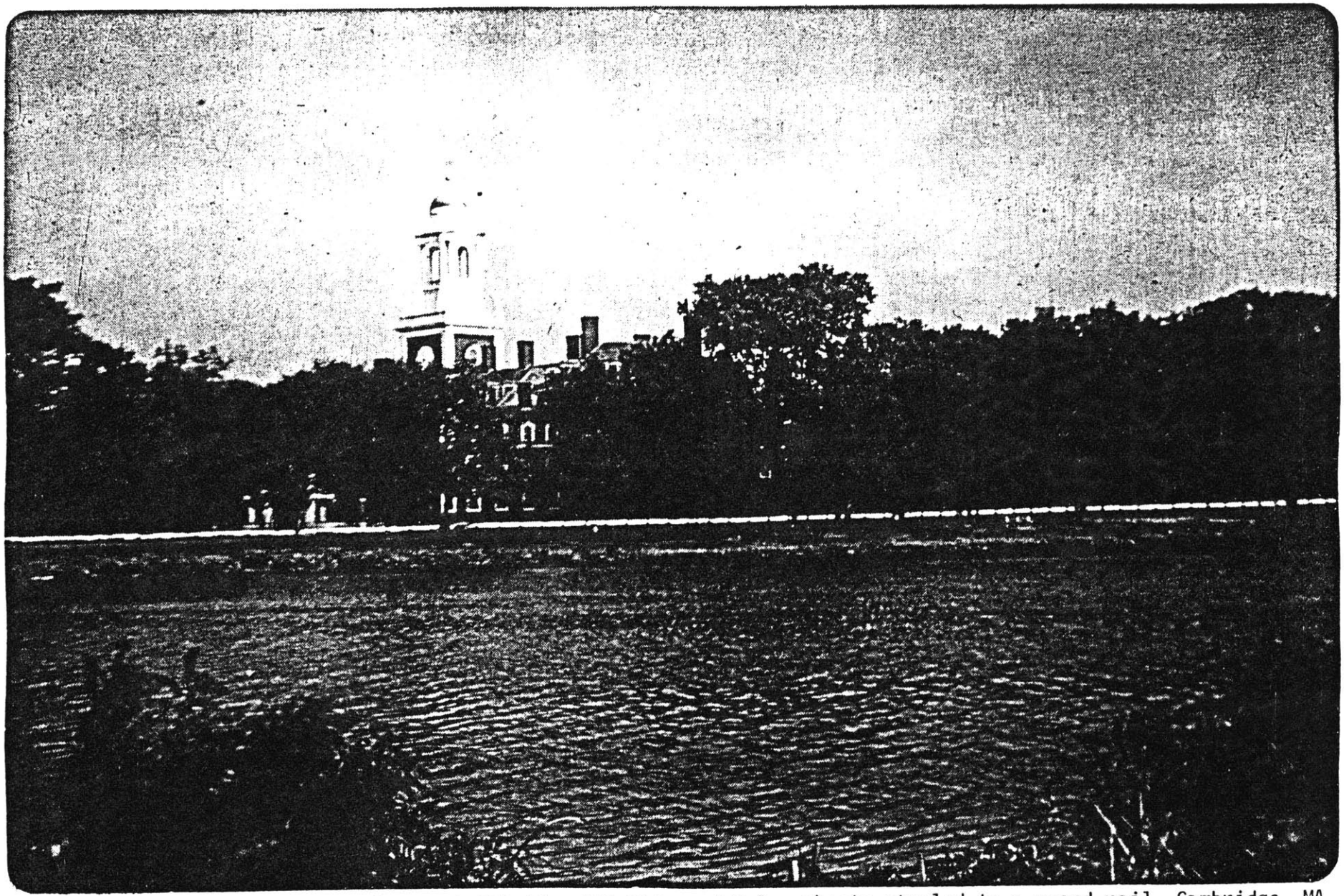


#9. The Face of the Earth is Much Like Mine video still

#10. An Early Remote Laser Carving Frame buffer image at V.L.W. of stone, scaling grid and computer-aided image of laser path

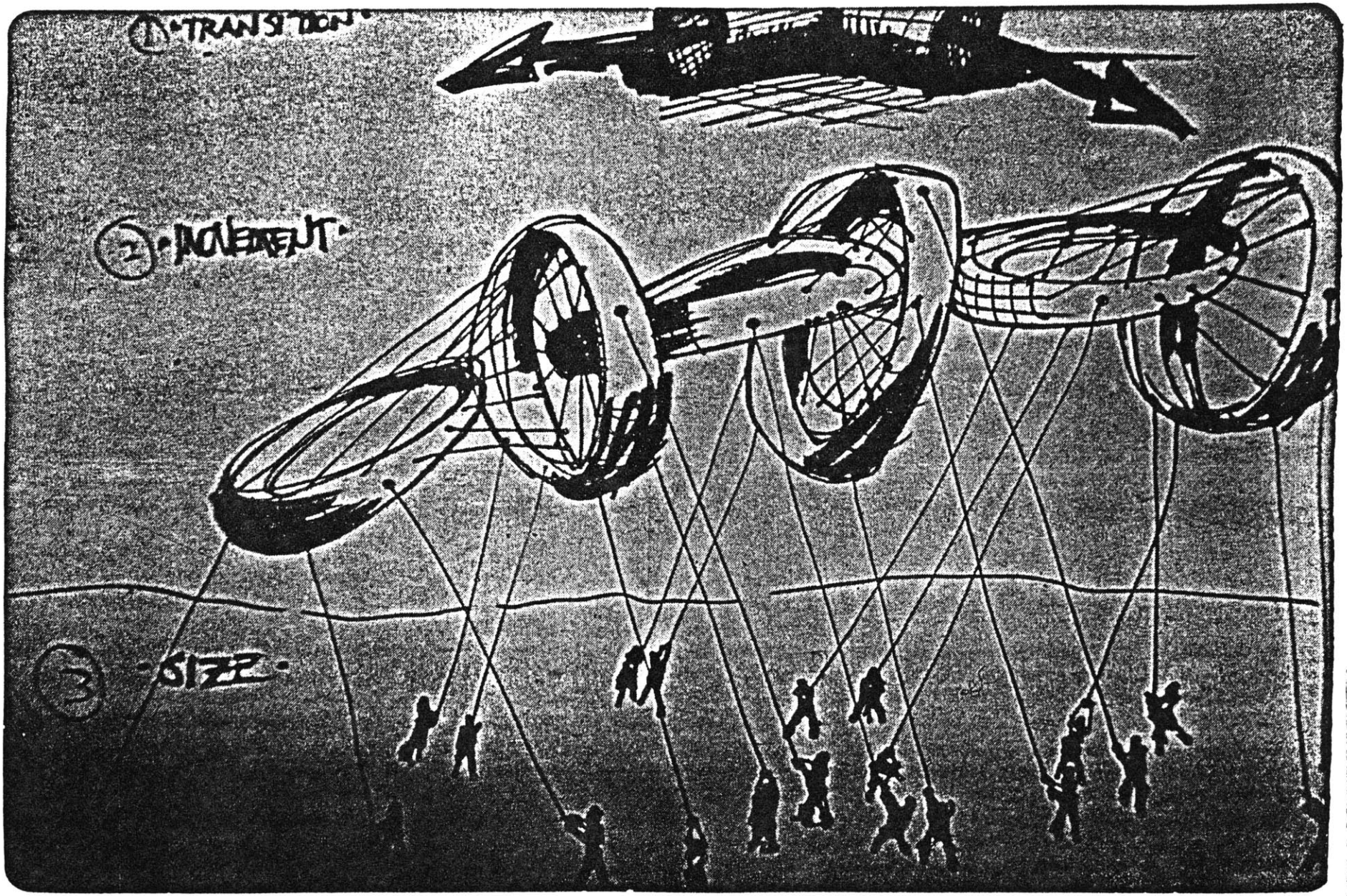


#11. Rolling Drumlin: A Proposal 19" x 30" Pen and Ink on mylar

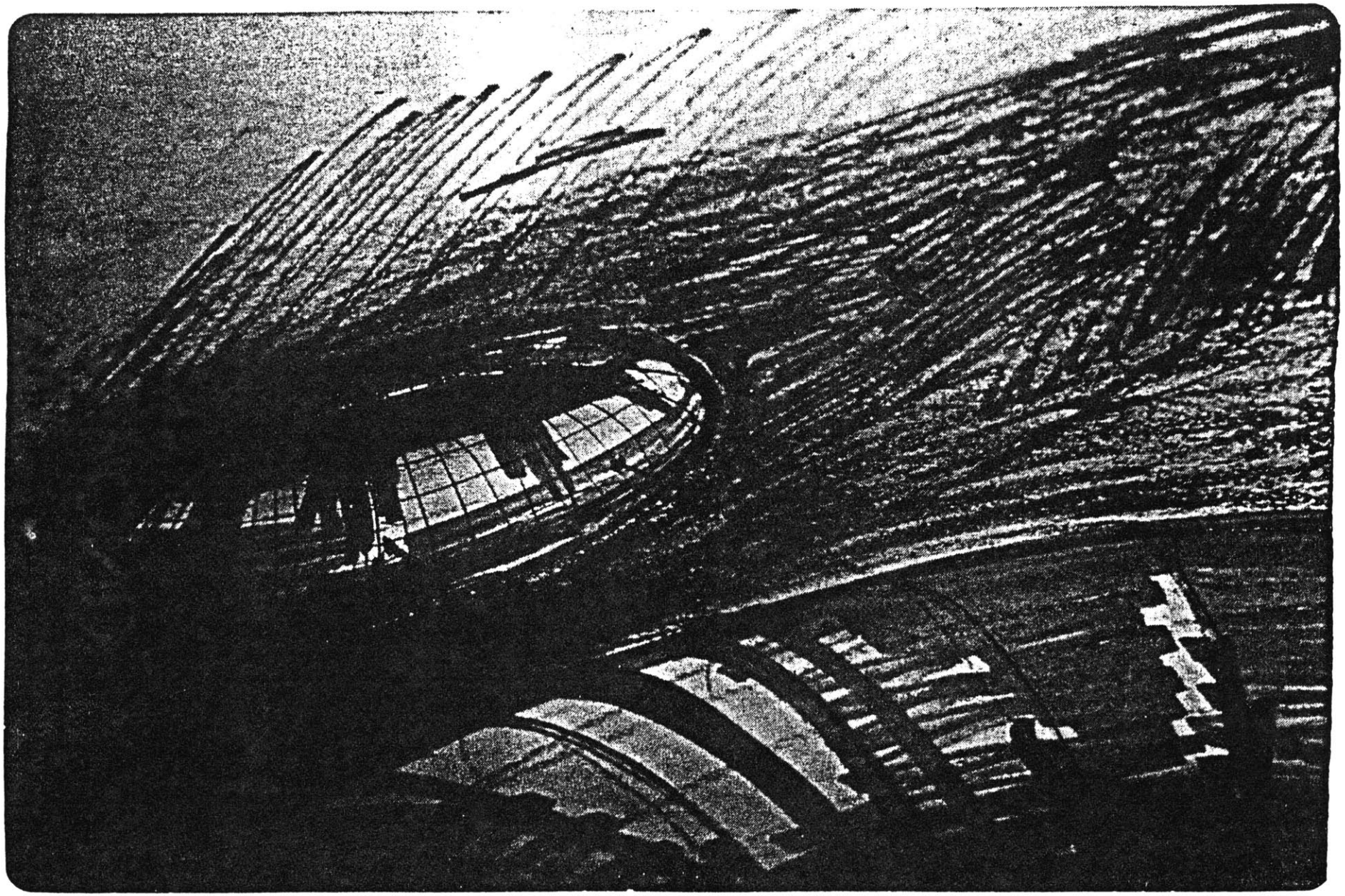


#14. The 1260' Dotted Line (Detail) 220 9" x 70" Silvered Mylar sheets stapled to a guard rail, Cambridge, MA

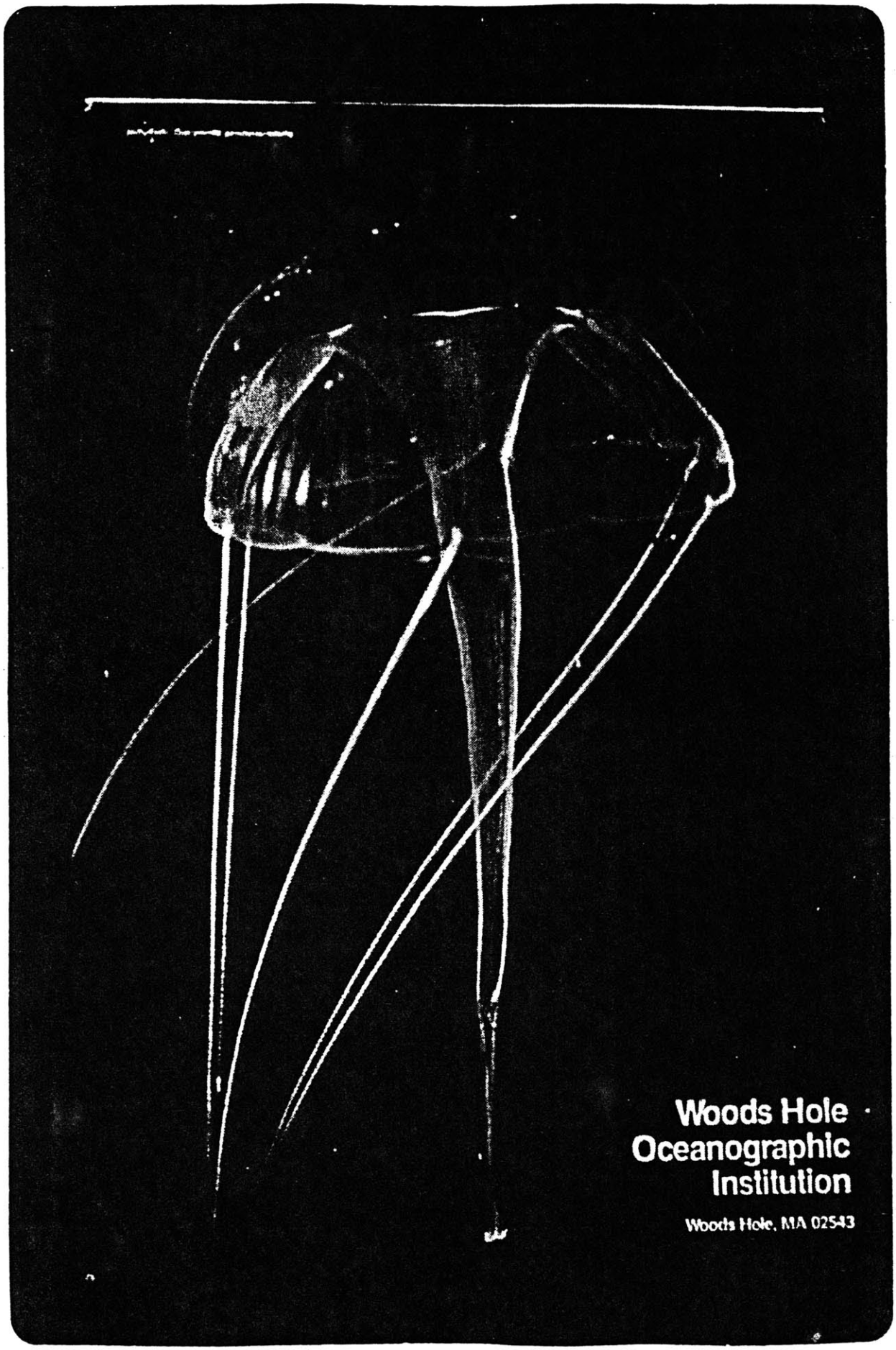
#15. The 1260' Dotted Line (Detail) 220 9" x 70" silvered mylar sheets stapled to a guard rail, Cambridge, MA



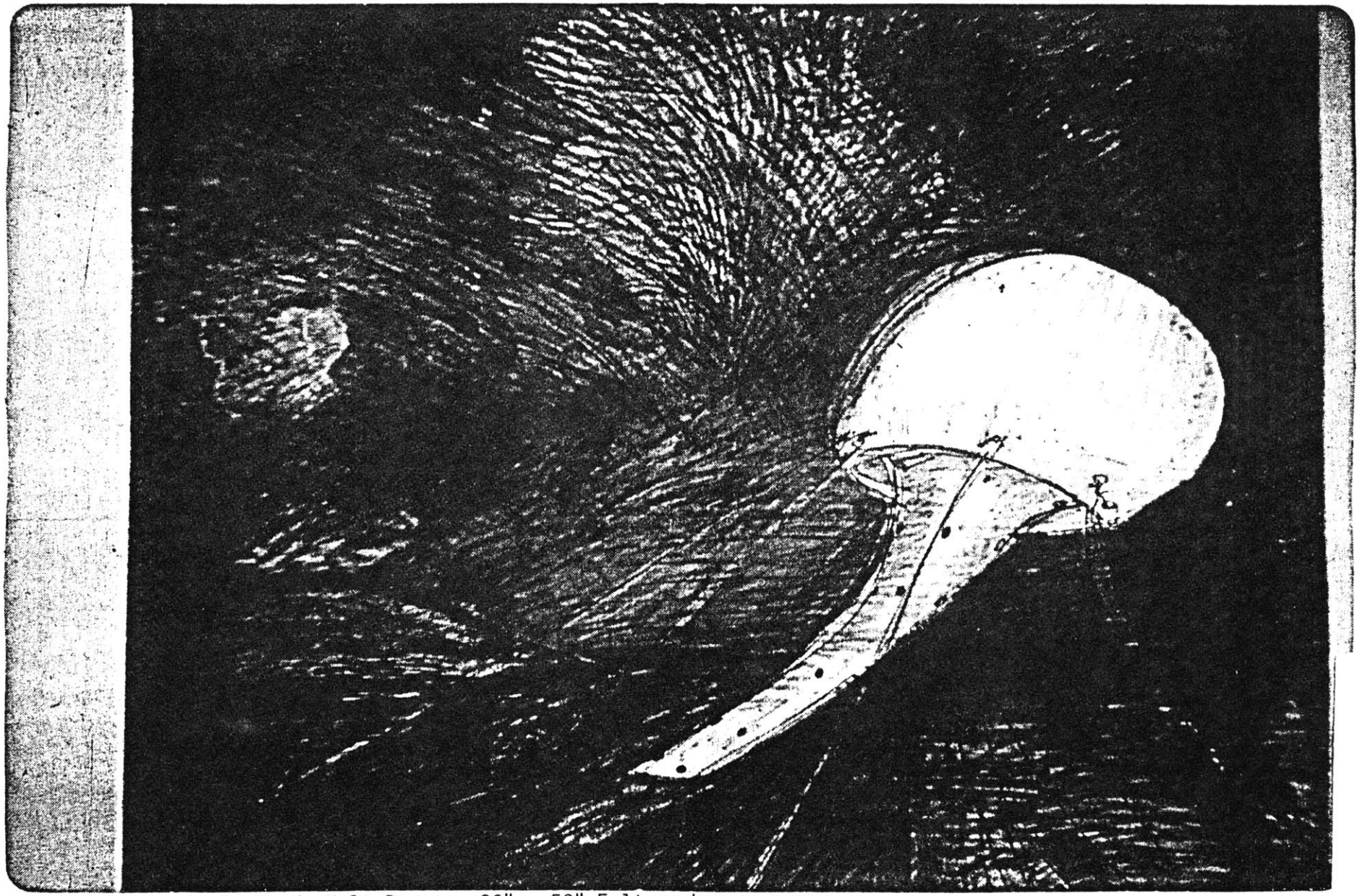
#17. Tethered Woods Hole Rings (Aloft) 8" x 10" felt marker on paper



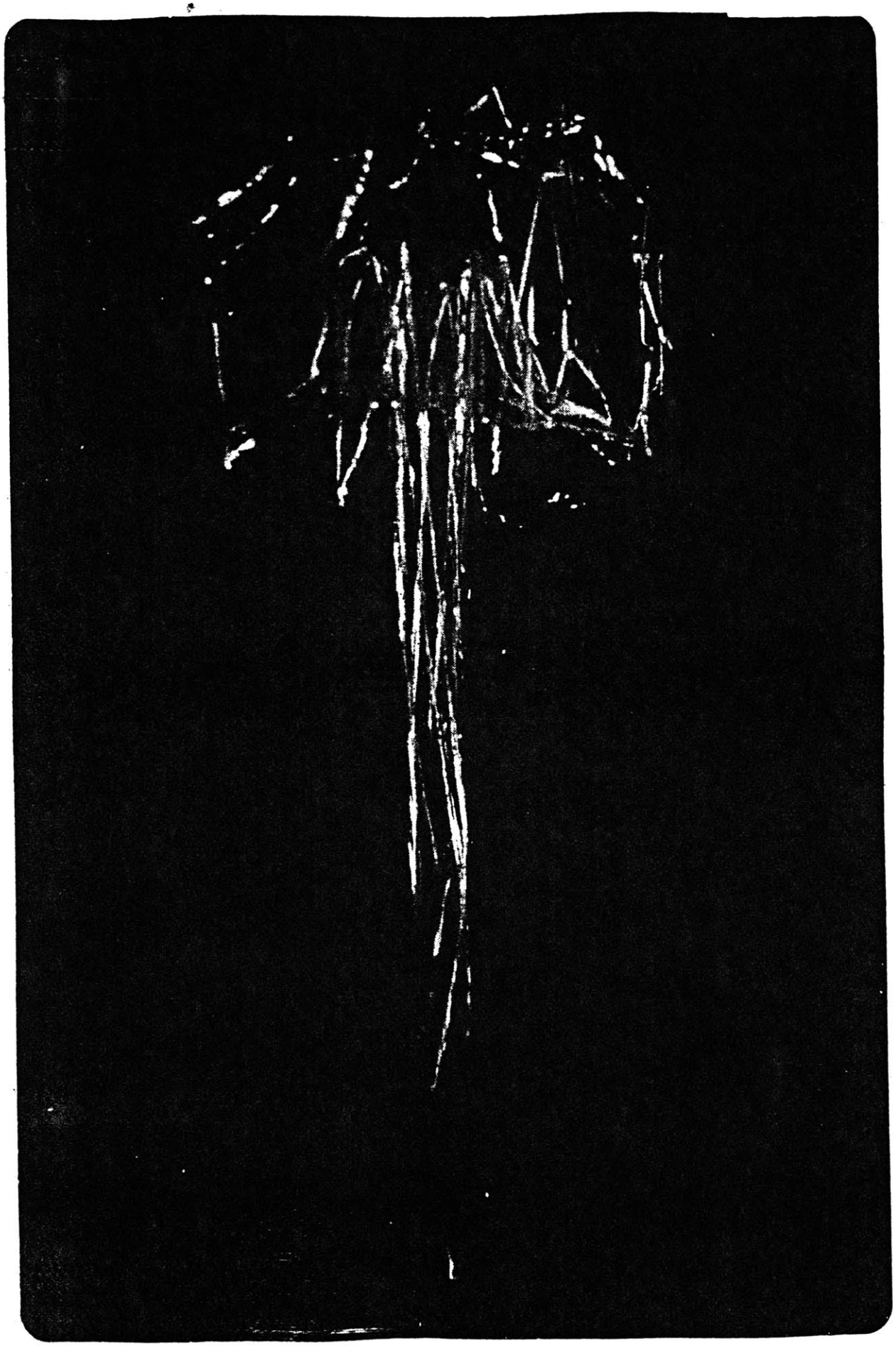
#19. Woods Hole Rings 8" x 10" felt marker, pastel on paper



#21. Geryonia Probiscalis Color Photograph courtesy of Dr. L.P. Madin W.H.O.I.

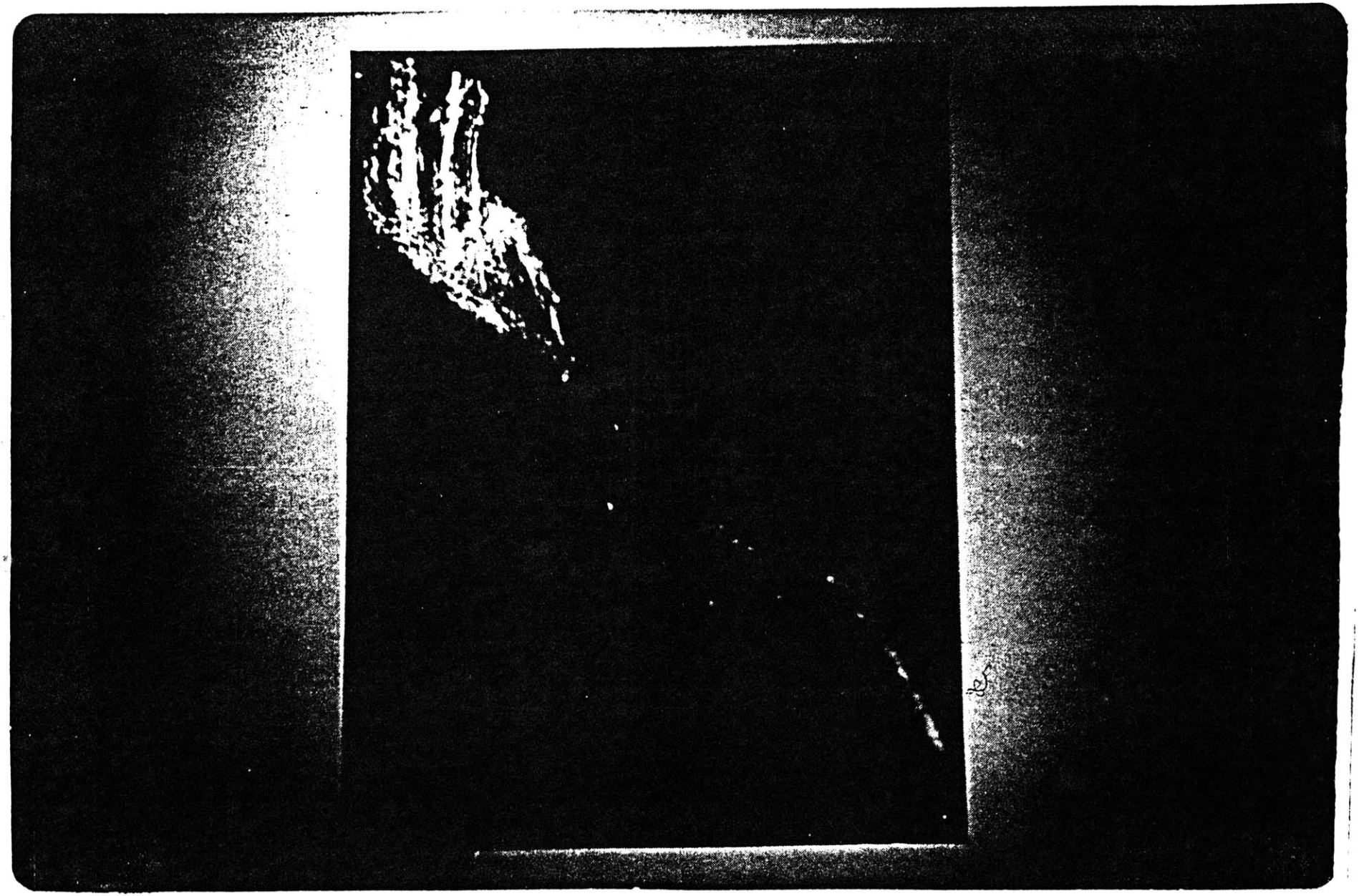


#22. Geryonia in Woods Hole Passage 36" x 50" Felt marker on paper

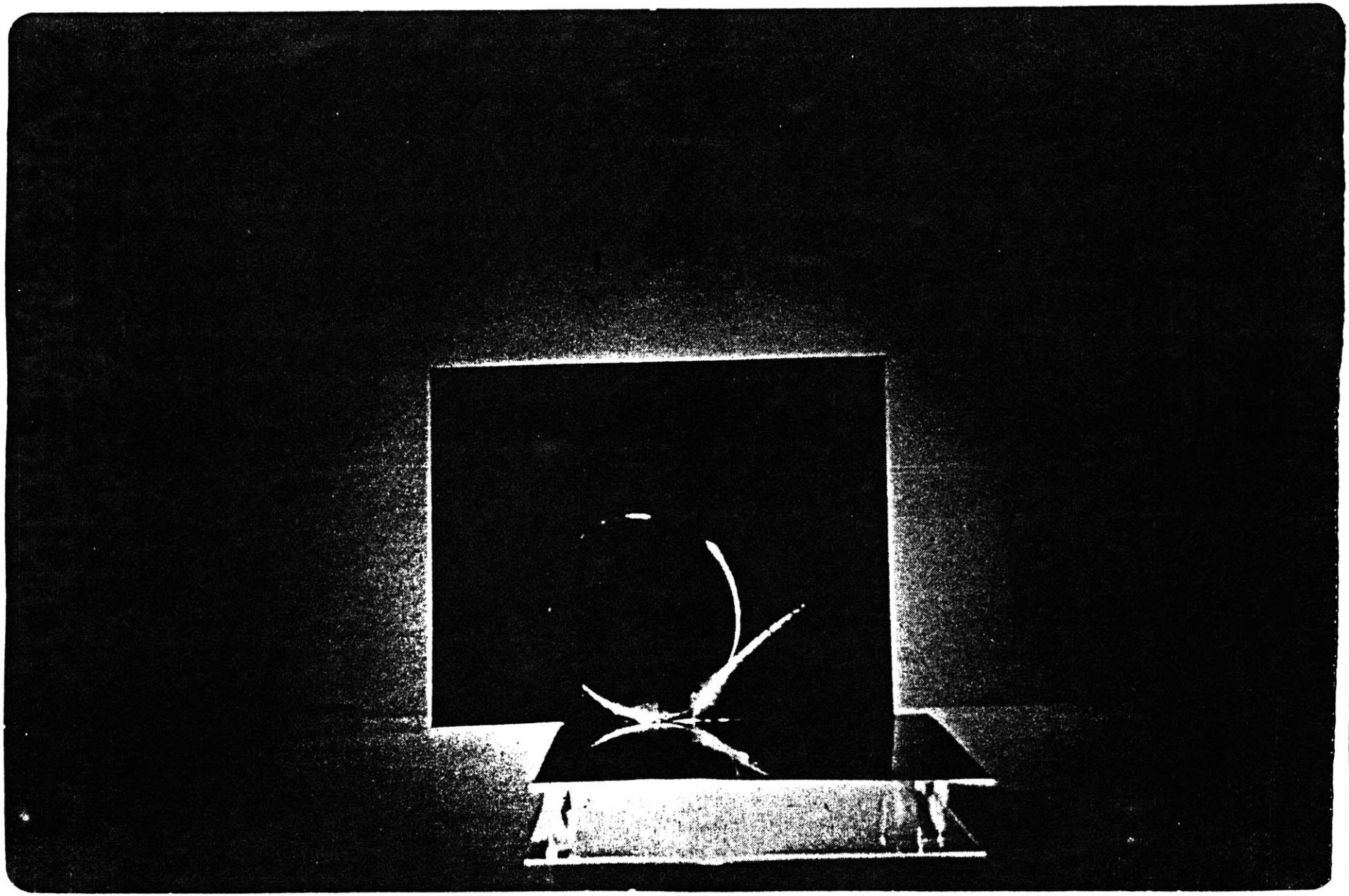


#23. Geryonia Model 35" high, 4ml polyethylene and phosphoescent paint

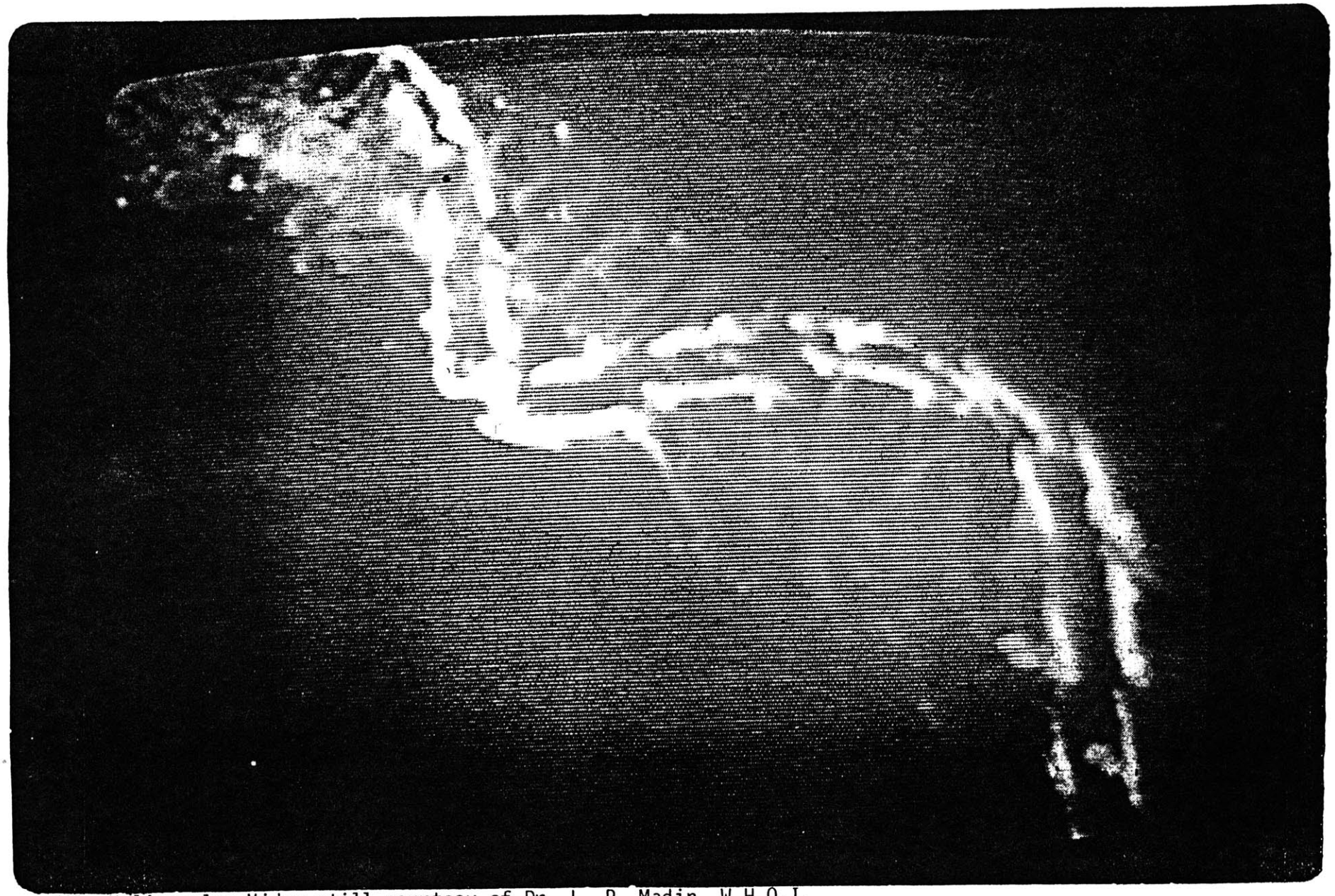
#24. Geryonia Model II 12' high (when inflated) in studio



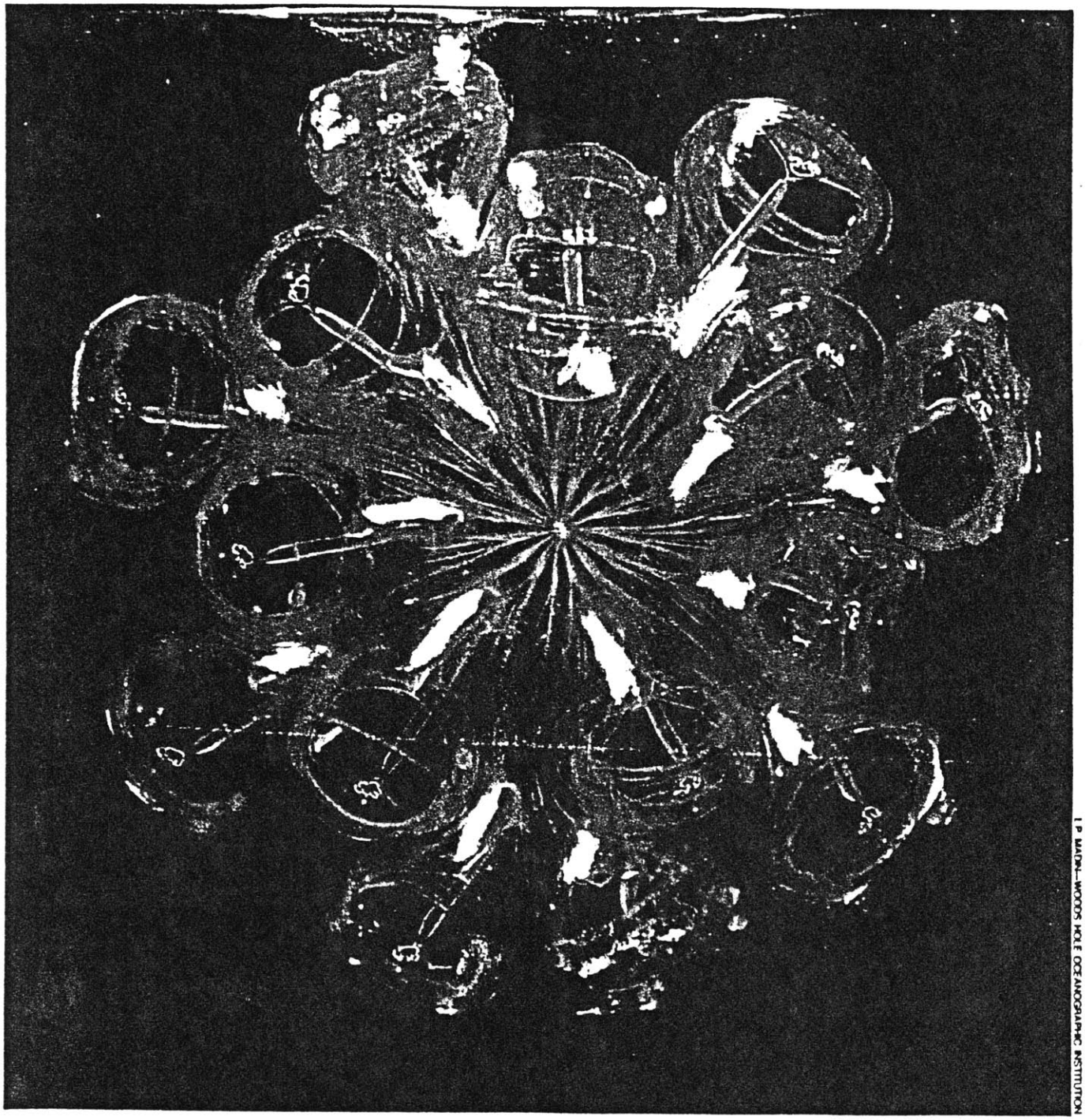
#25. Life Luminence 30" x 40" neon-illuminated laser refraction transparency, plexiglass, infra-red film transparency and neon tubing



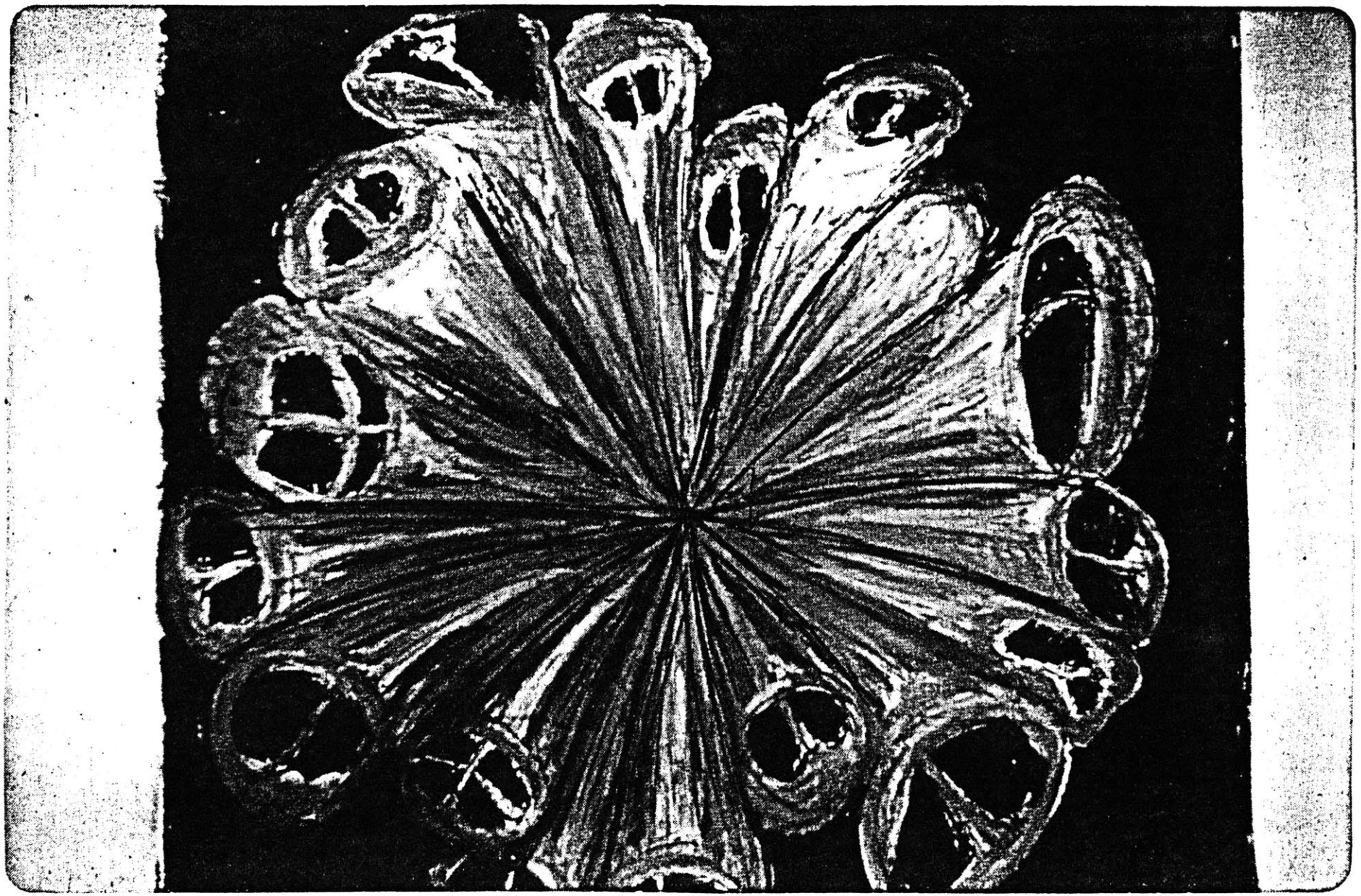
#26. Geryonia Rising neon-illuminated laser refraction transparency, plexiglass, infra-red film transparency, and neon tubing



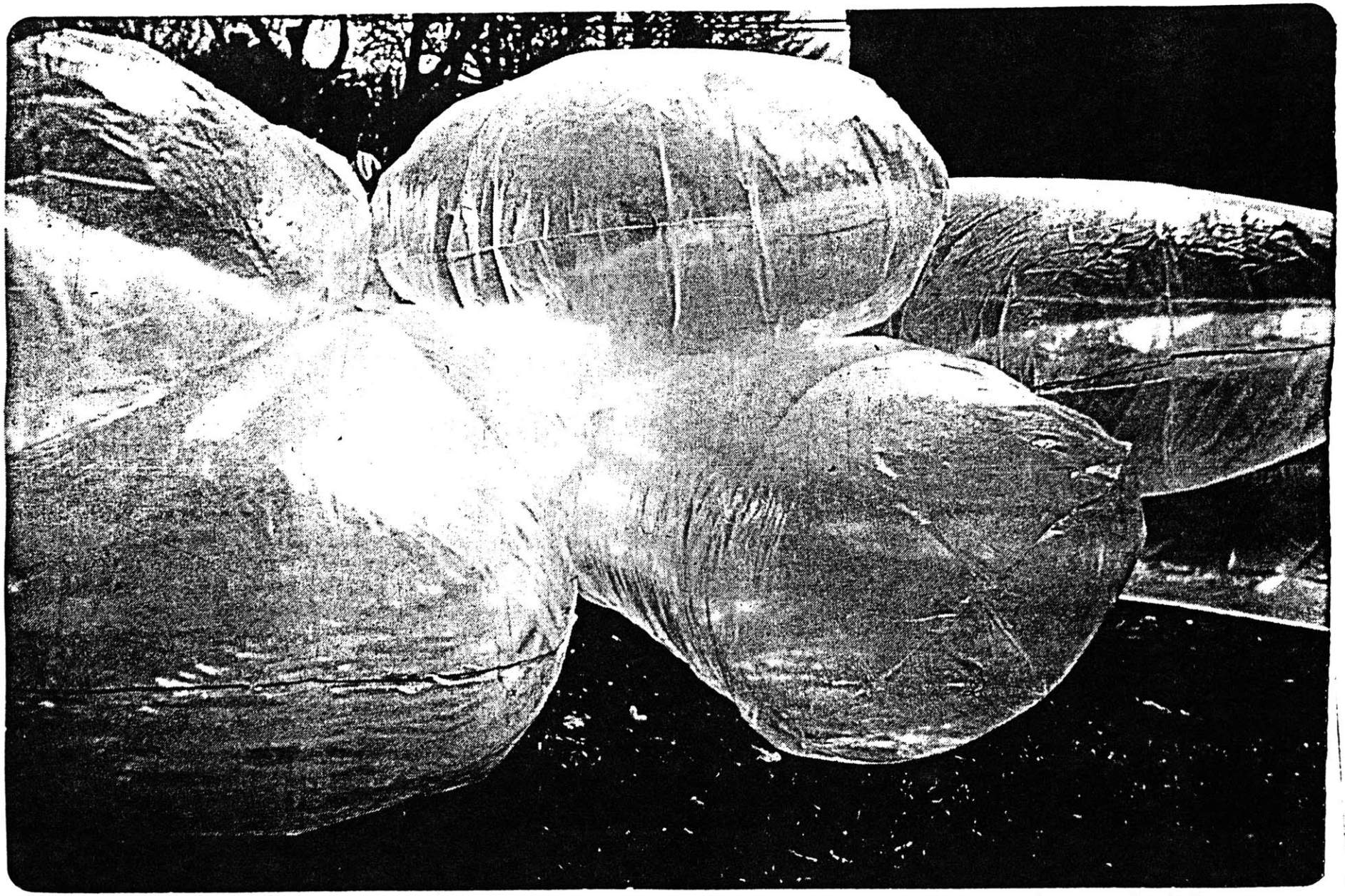
#27. Helicasalpa Video still courtesy of Dr. L. P. Madin, W.H.O.I.



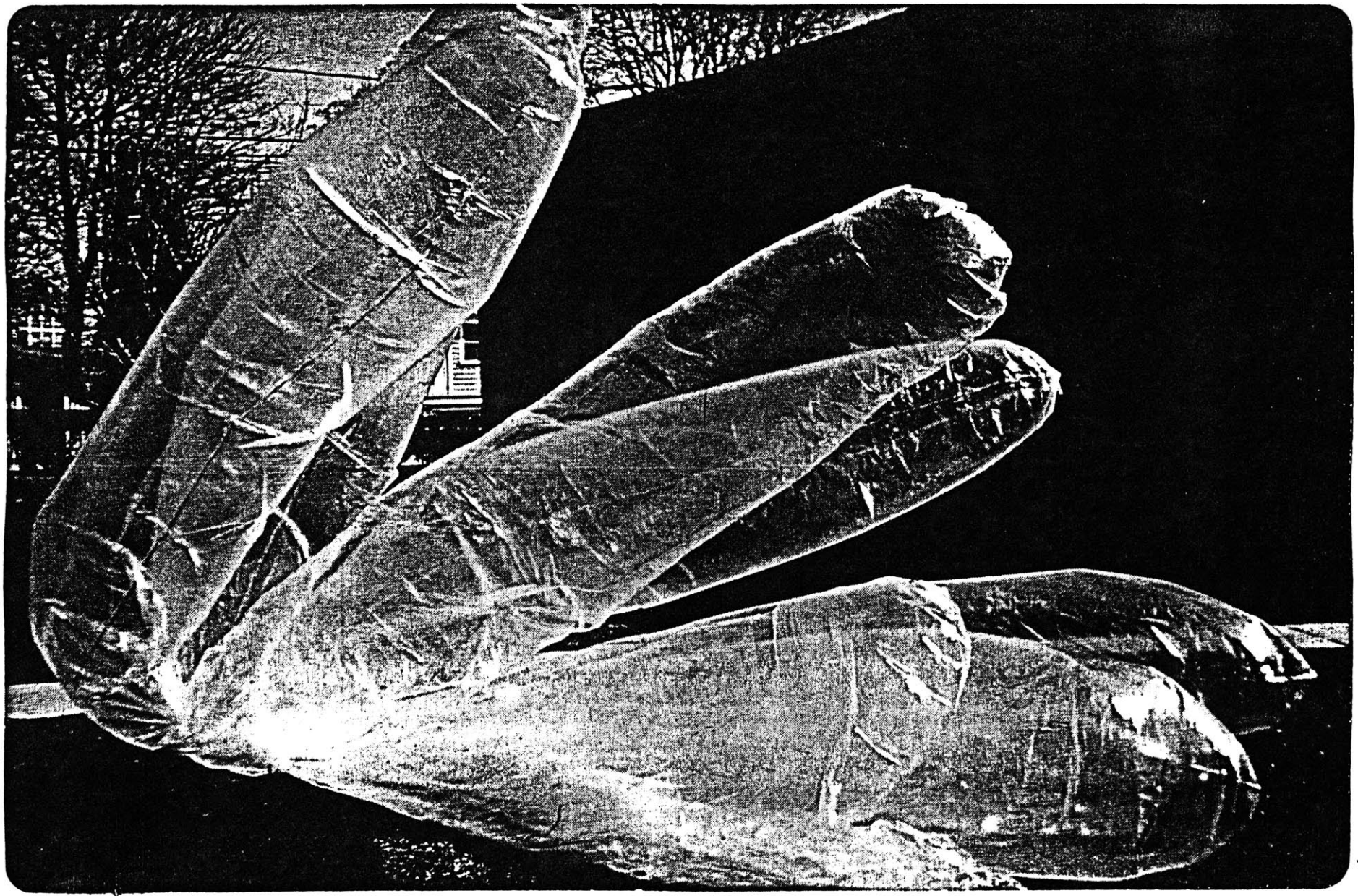
#28. Cyclosalpa Pinnata by Dr. L. P. Madin, W.H.O.I., photograph



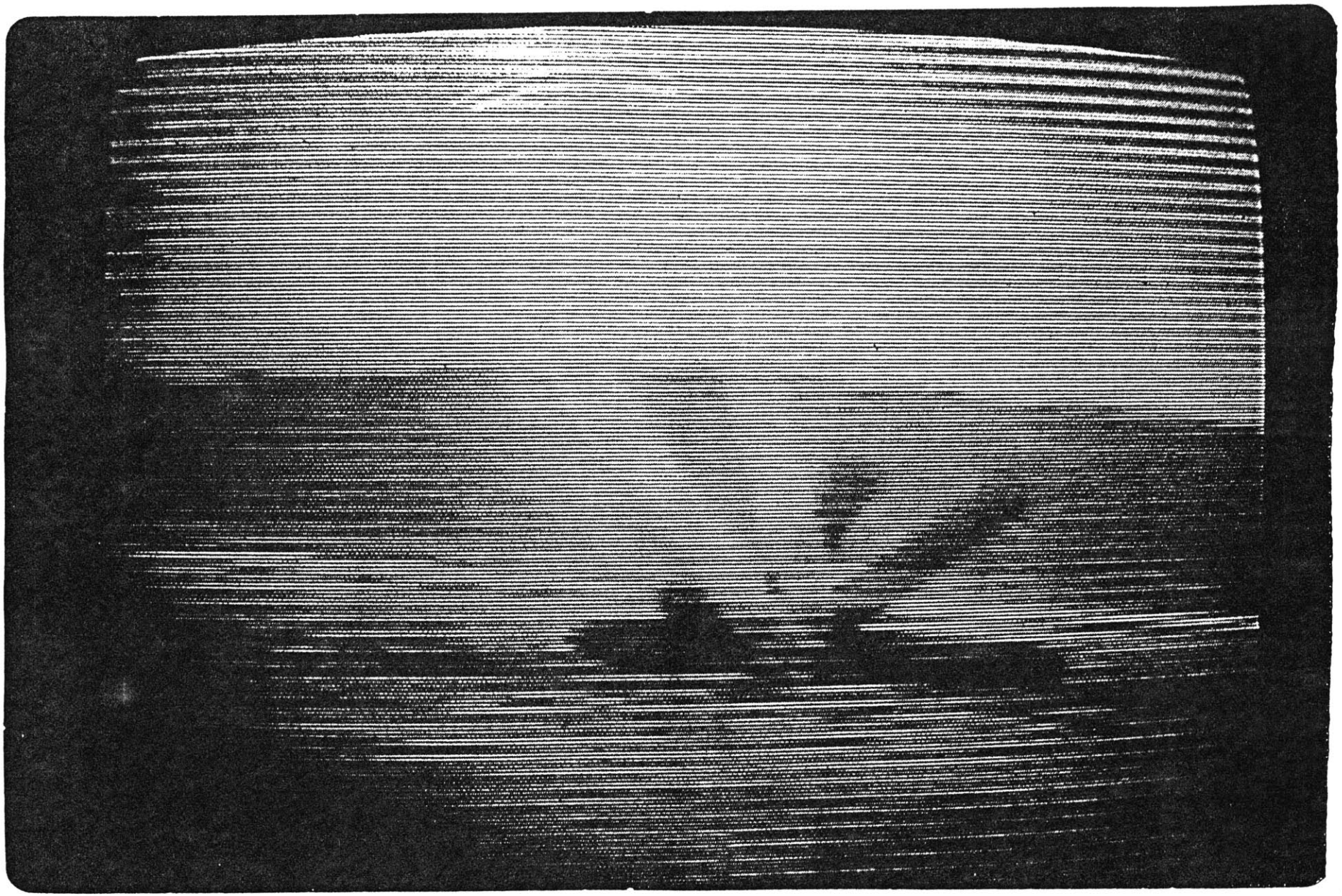
#29. Cyclosalpa 42½" x 32¼" Oil pastel on paper



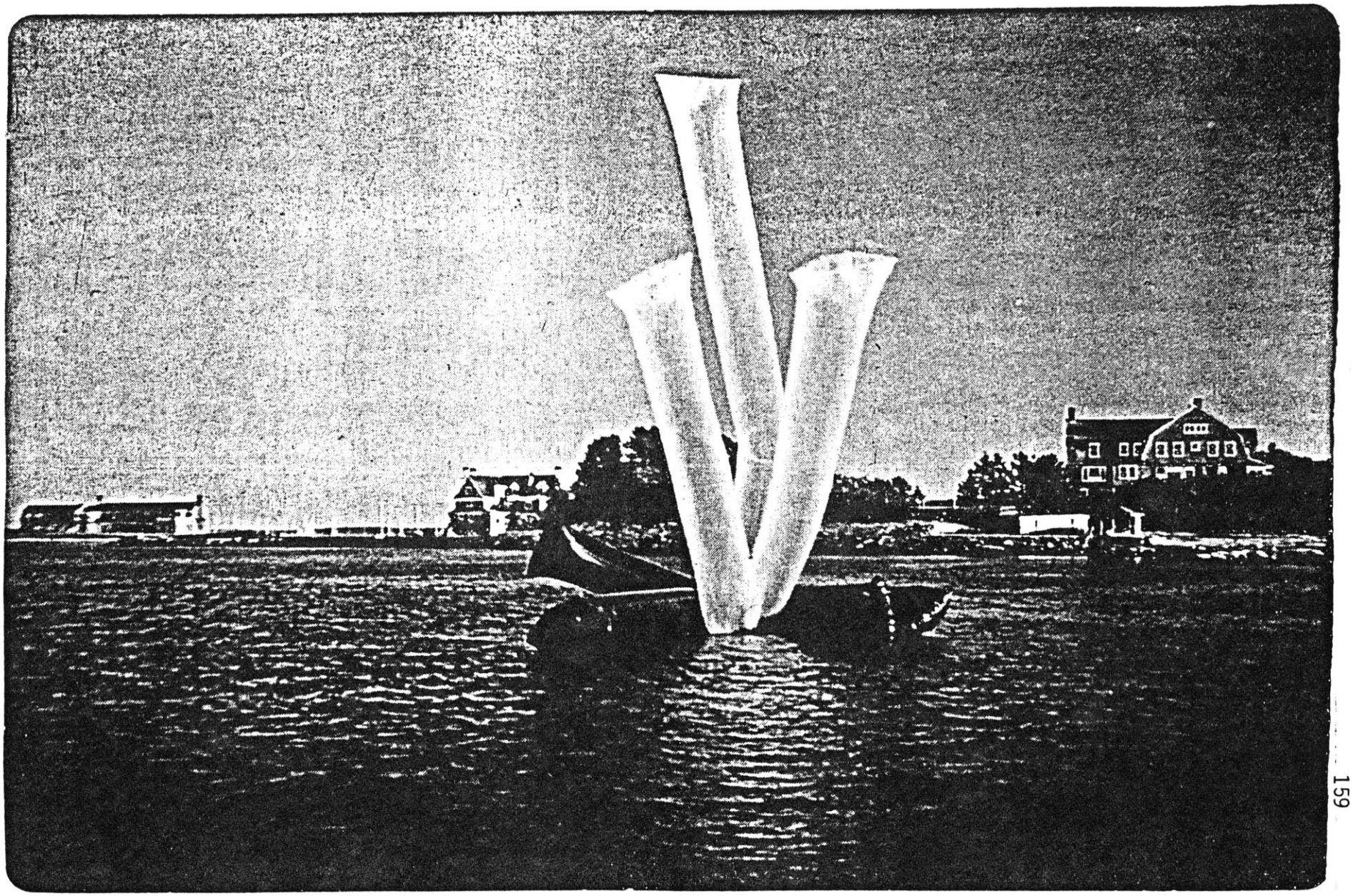
#30. Cyclosalpa Model I 13 tapered, clear, polyethylene inflatable tubes at the Massachusetts Maritime Educators Conference, April 6, 1984



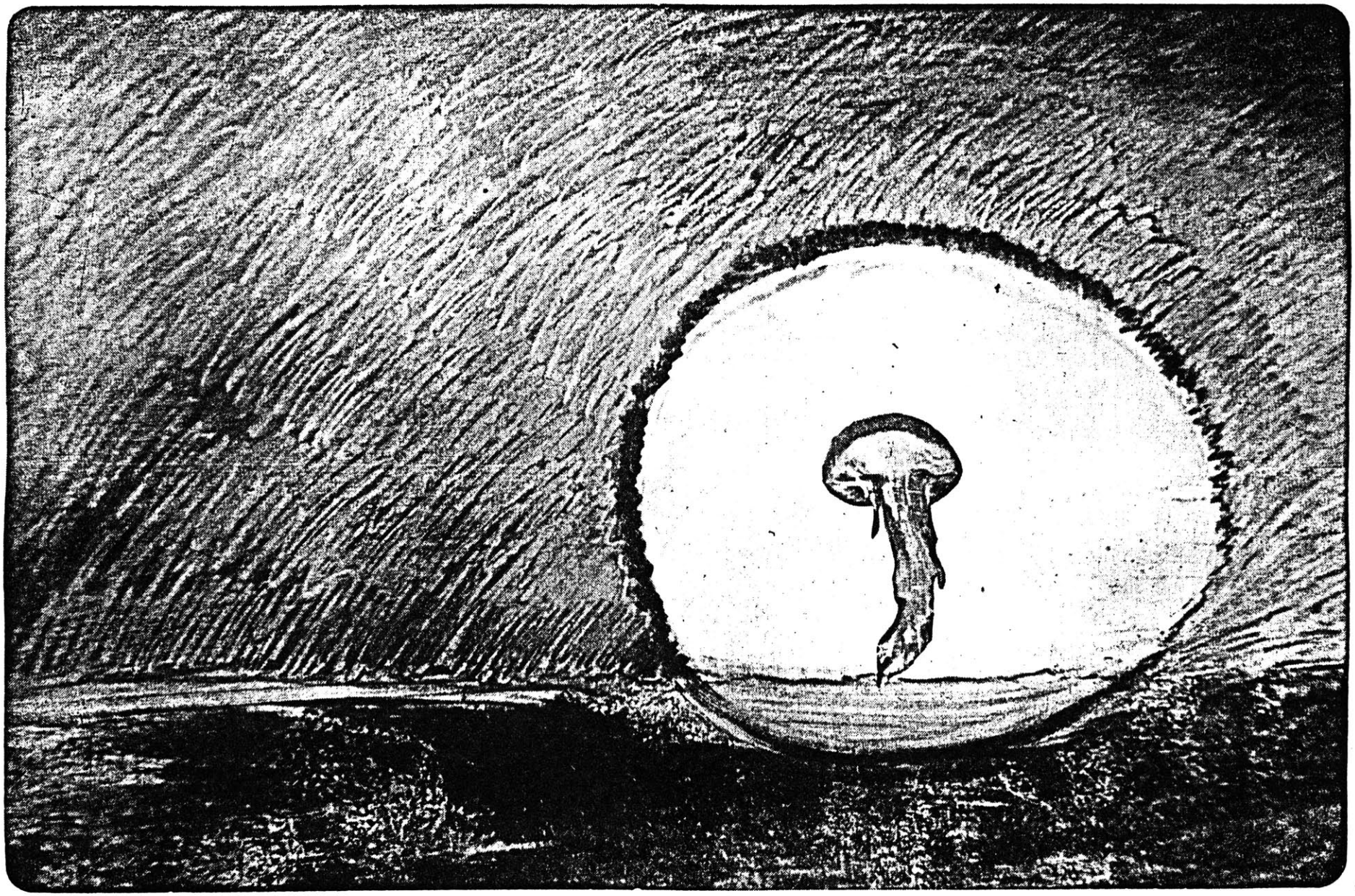
#31. Cyclosalpa Model I (moving in wind) 13 tapered, clear, polyethylene inflatable tubes at the Massachusetts Maritime Educators Conference, April 6, 1984



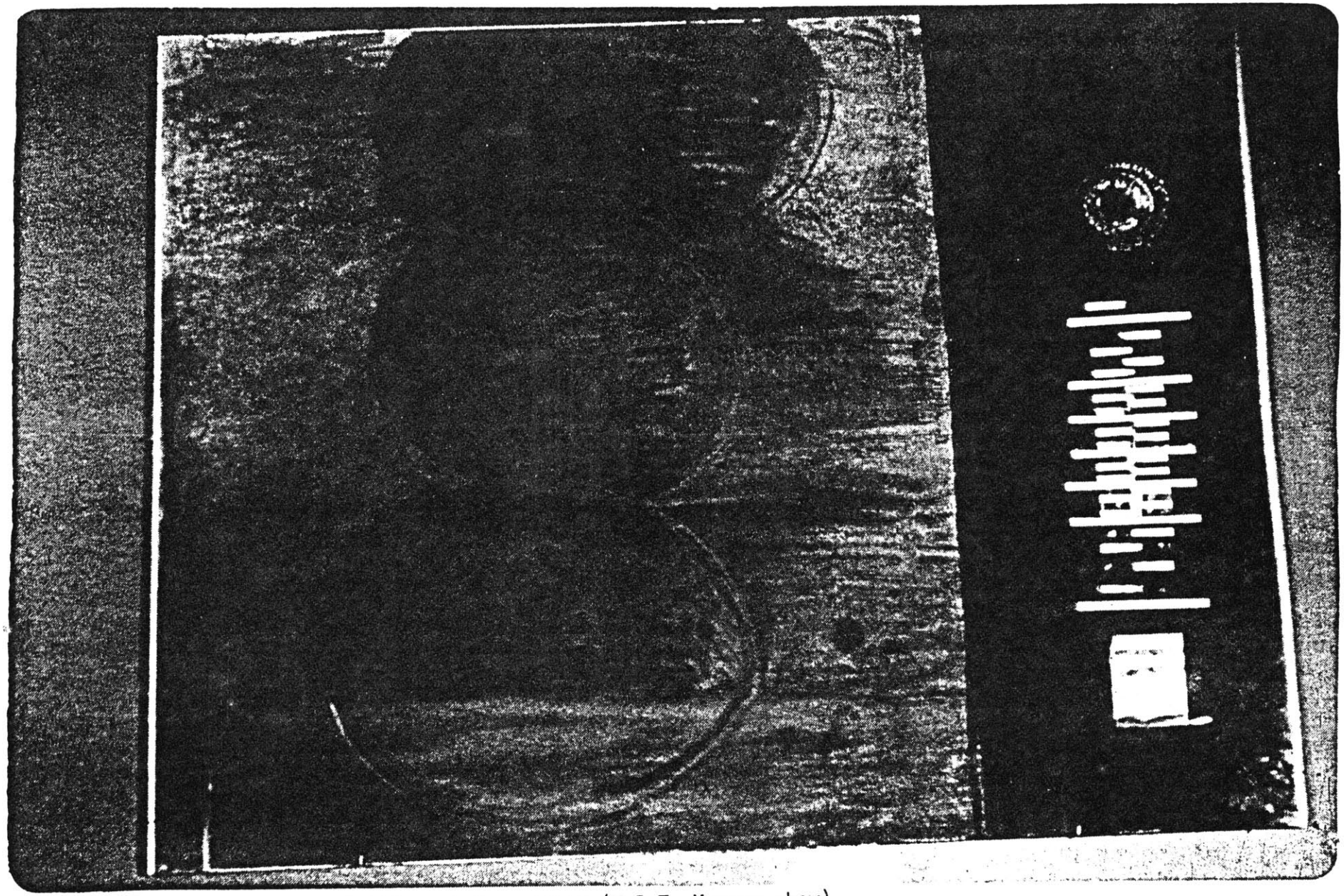
#32. Sketch for Cyclosalpa in Woods Hole Video still of slow scan collage



#33. Cyclosalpa in Buzzards Bay 40' clear and black polyethylene tubing attached to an underwater weight 9/84, photo by Fritz Heide

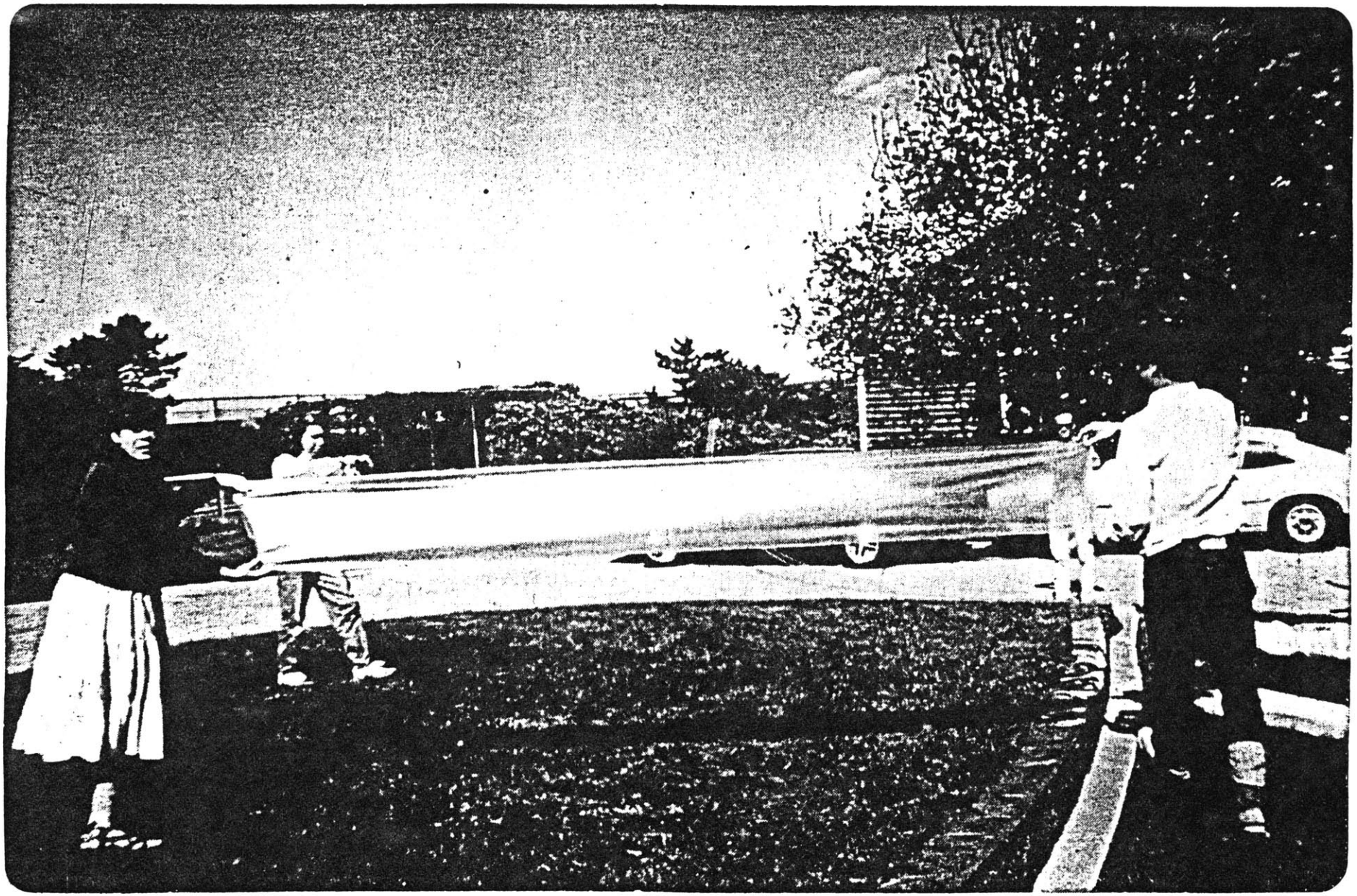


#34. Porthole I 42½" x 32¼" Oil pastel on paper (M.I.T. Museum show)

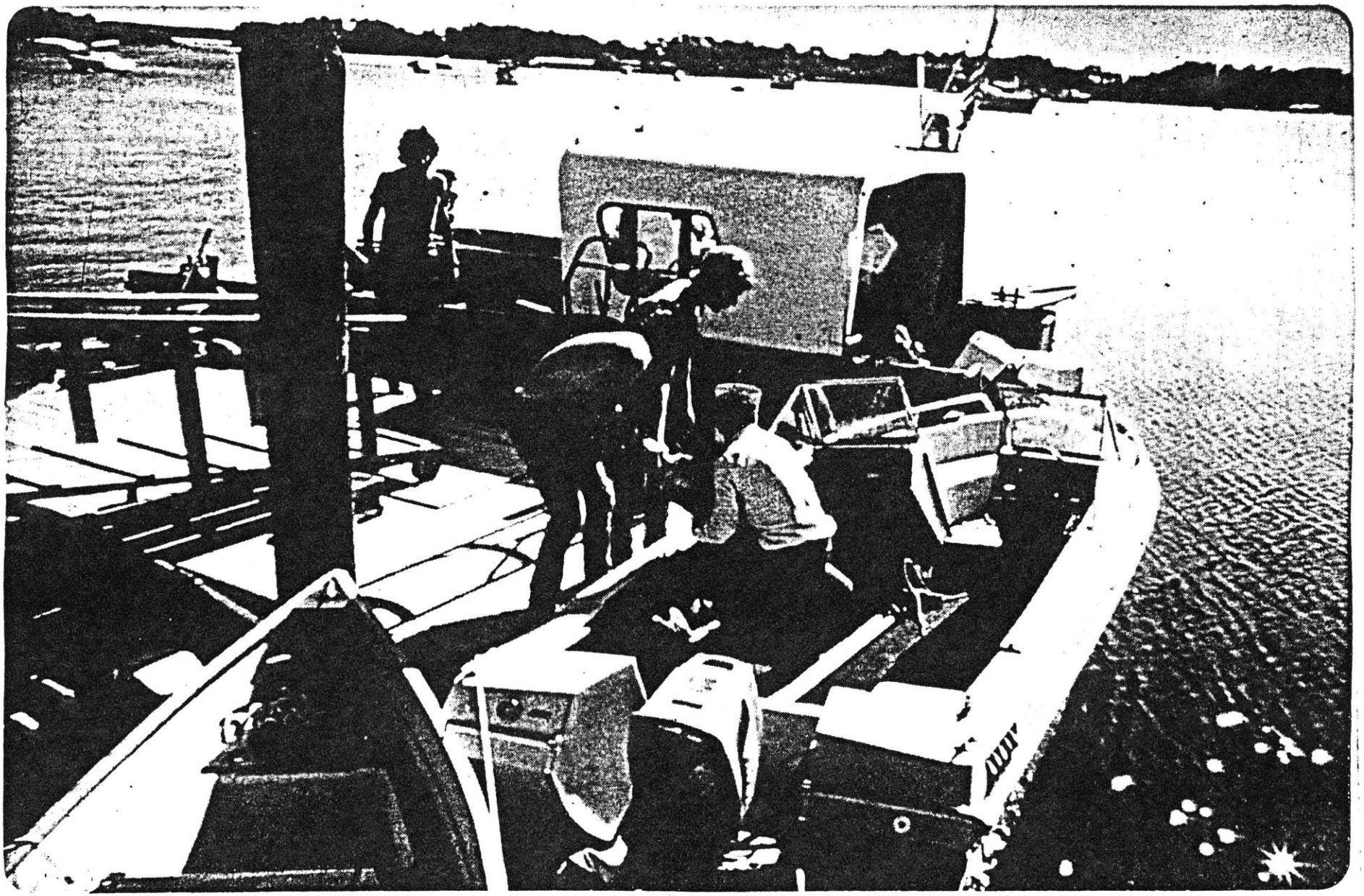


#35. Orb Transit 42½" x 32¼" Oil pastel on paper (M.I.T. Museum show)

#36. Coast Guard and Crew Photo courtesy of Marty Carlock, 9/16/84

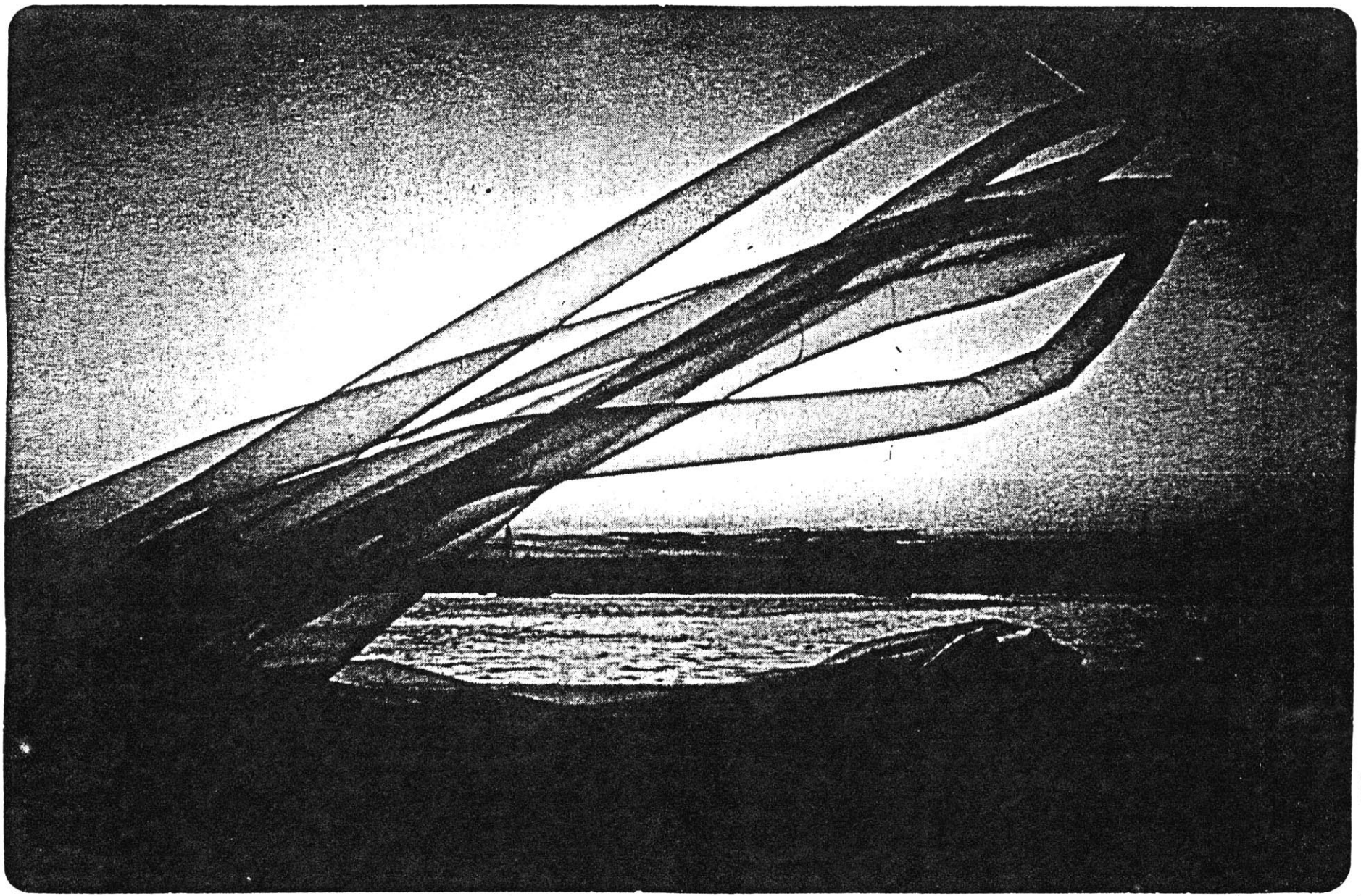


#37. Assembling and Organizing Polyethylene Photo courtesy of Marty Carlock, 9/16/84



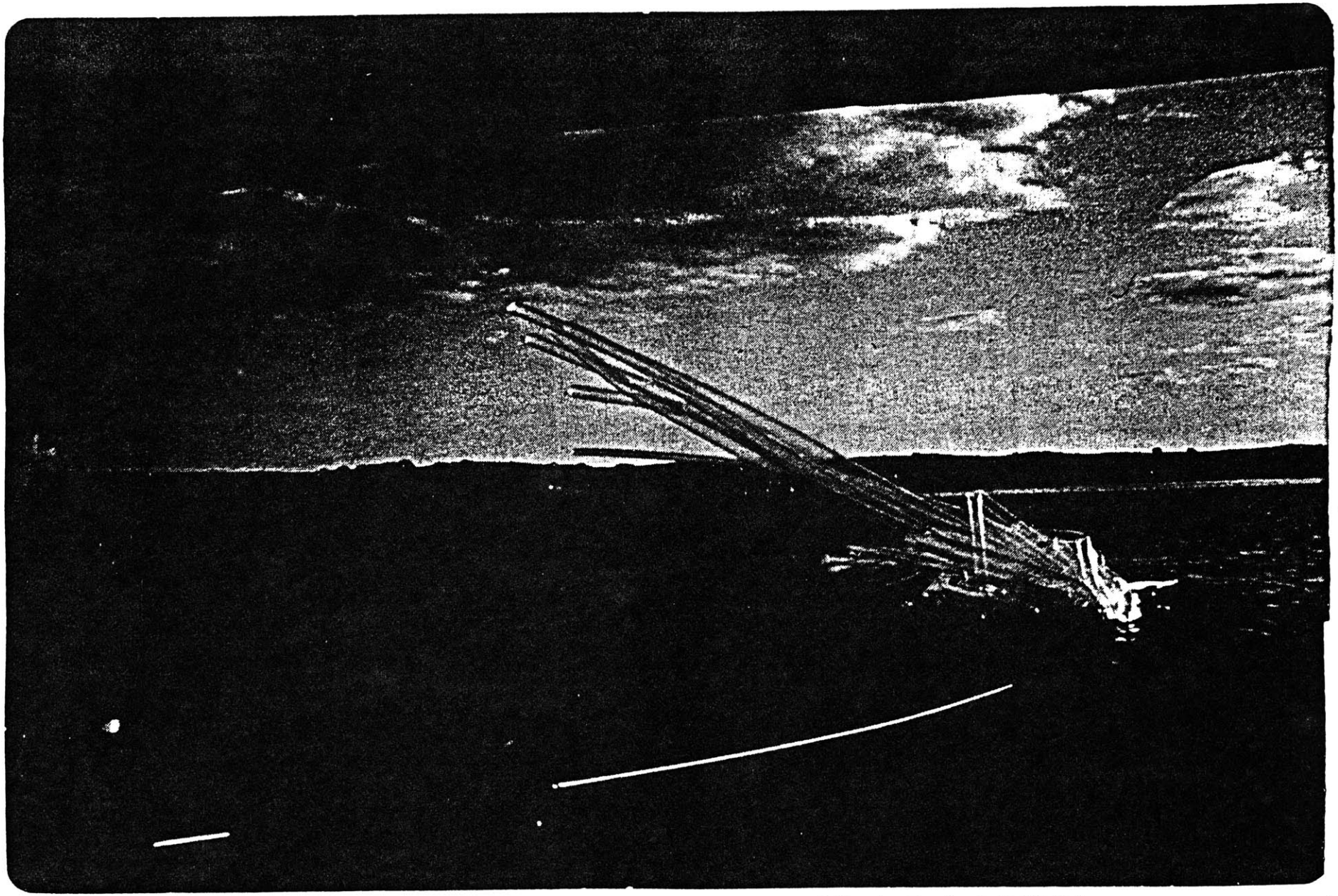
#38. Loading the Helium Tanks on to the Seatruck Photo courtesy of Marty Carlock, 9/16/84

#39. Inflation Silhouette Photo courtesy of Marty Carlock, 9/16/84

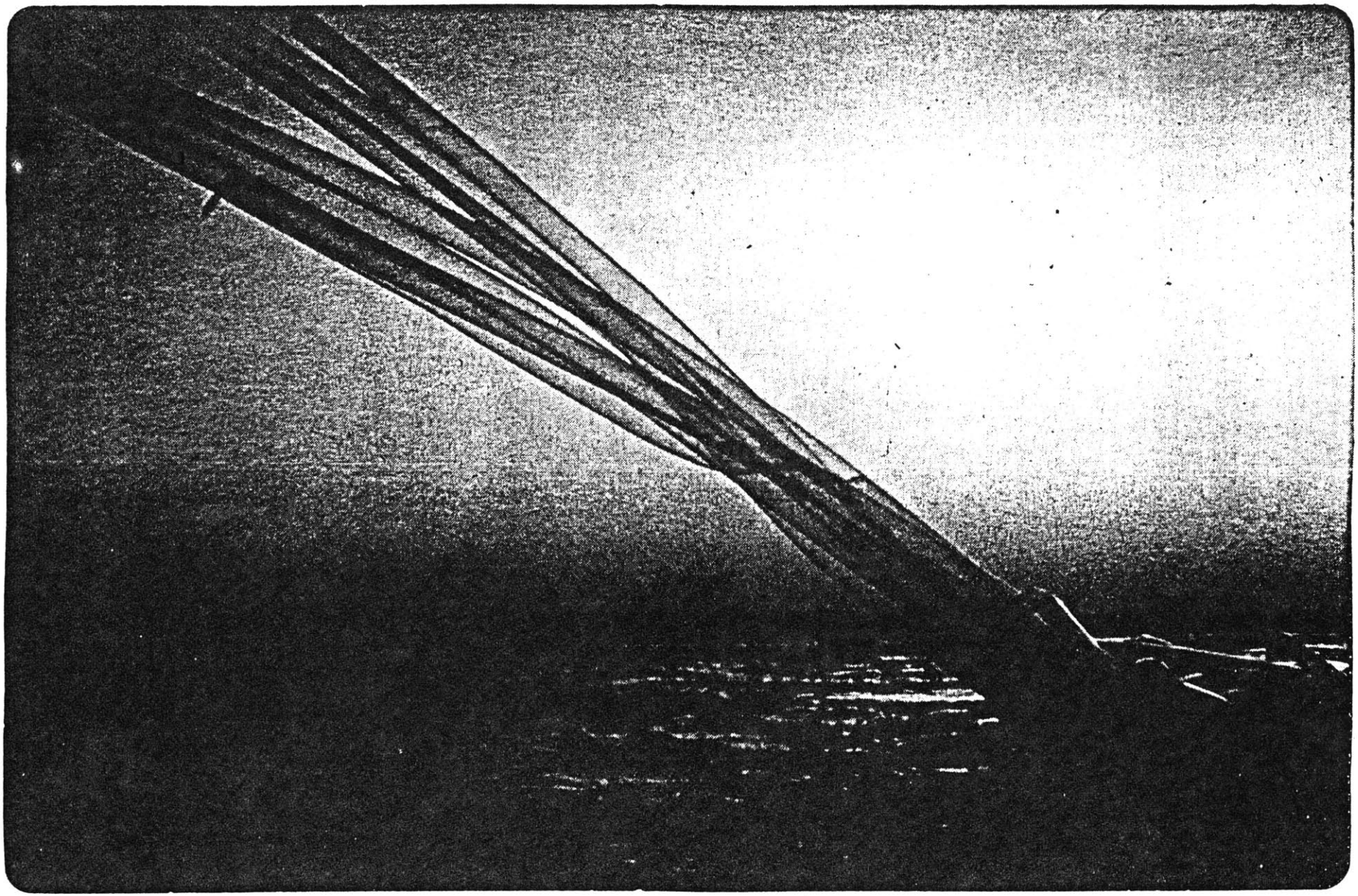


#40. WHIPS Tentacles Photo courtesy of Marty Carlock, 9/16/84

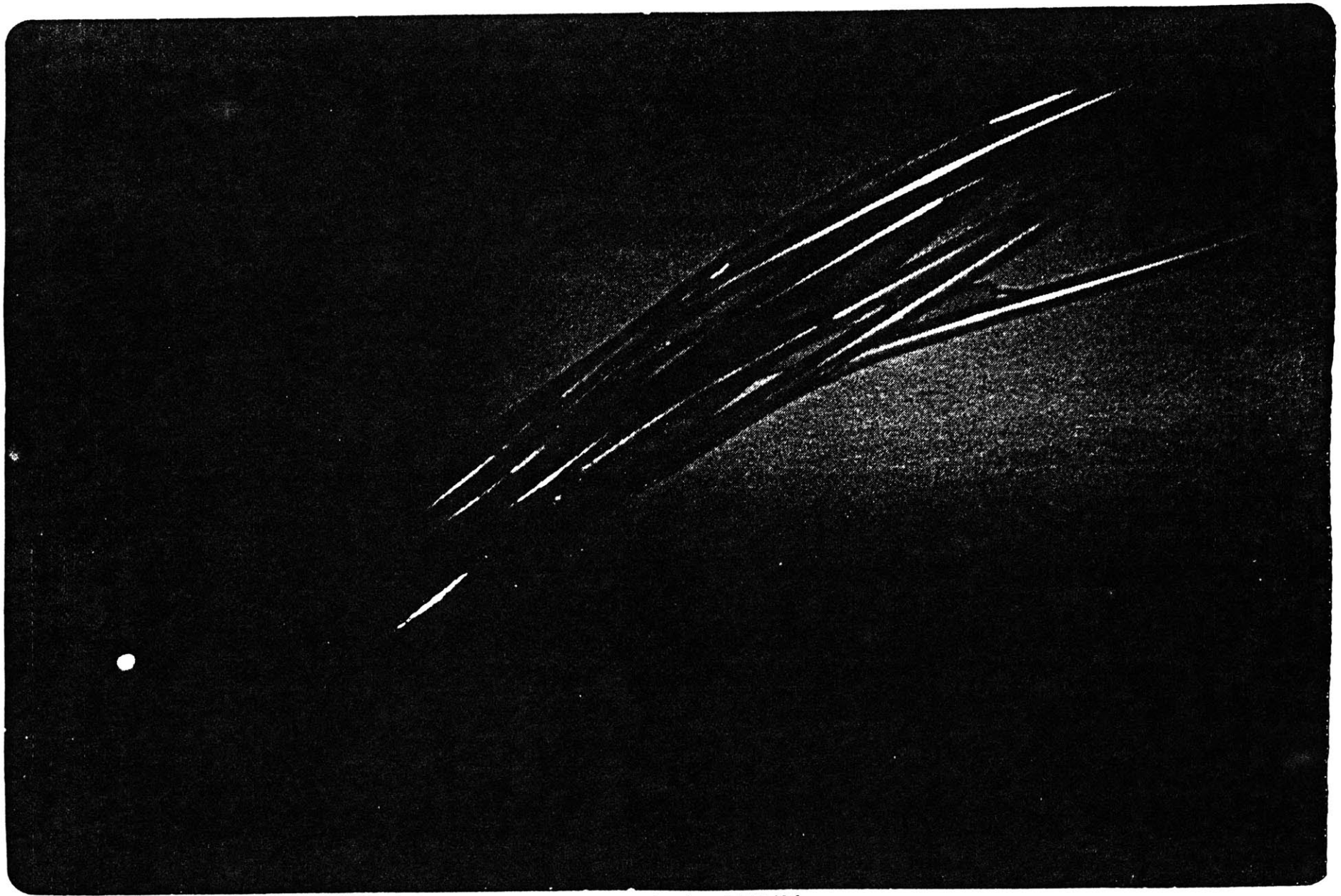
#41. WHIPS Tentacles Photo courtesy of Marty Carlock, 9/16/84



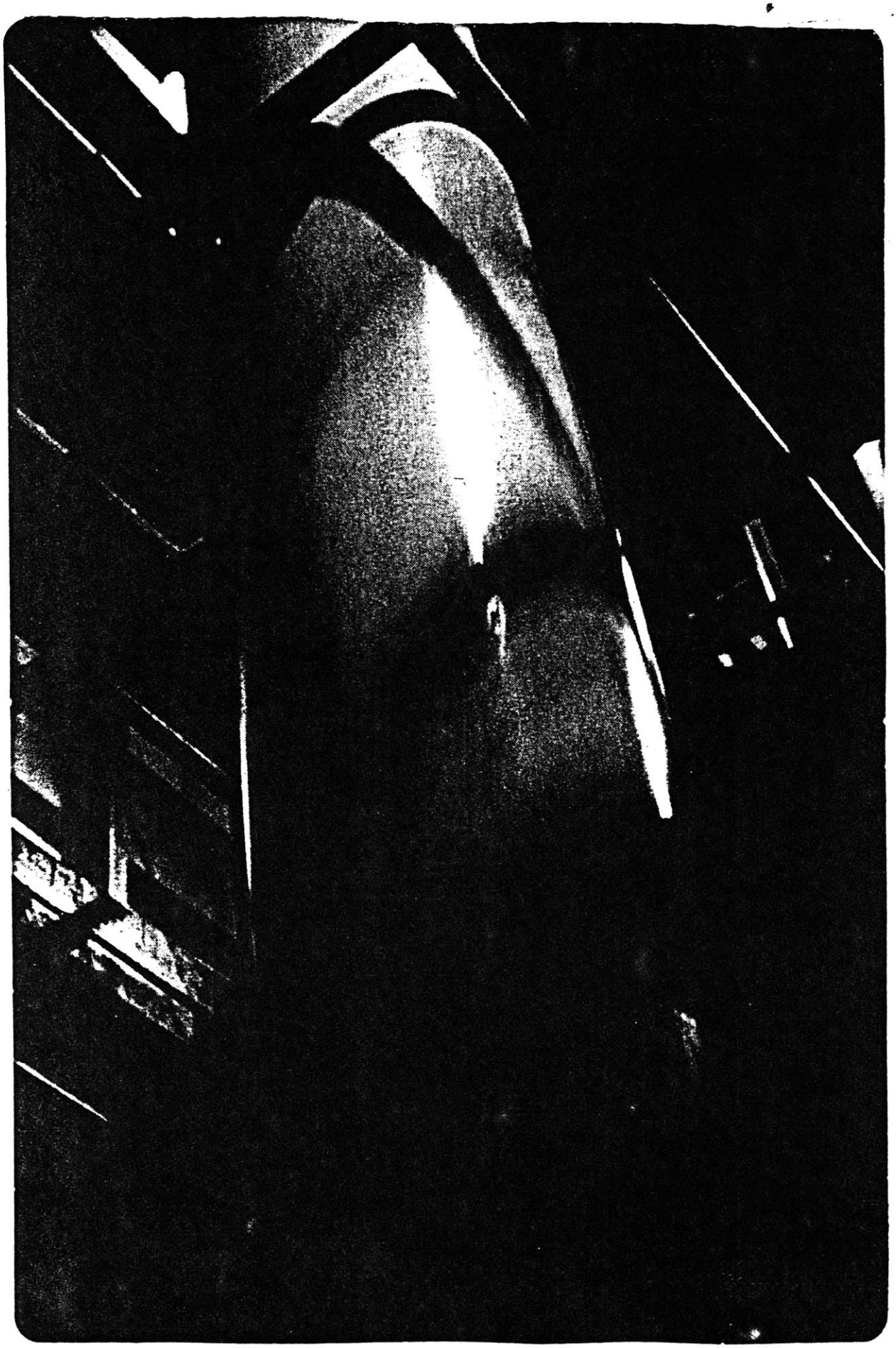
#42. WHIPS Tentacles on Journey through the Passage Photo courtesy of Marty Carlock 9/16/84



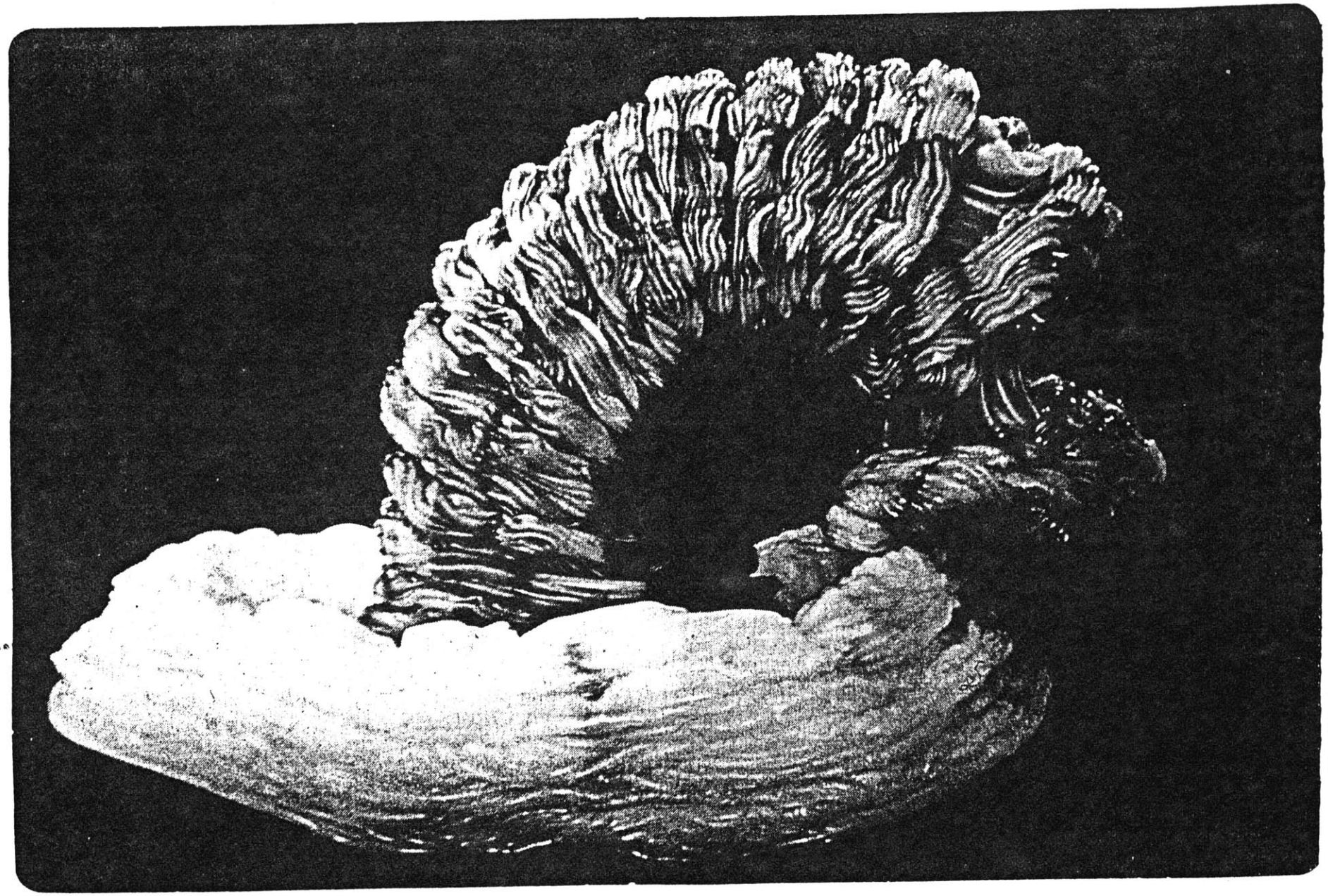
#43. WHIPS Tentacles on Journey through the Passage Photo courtesy of Marty Carlock, 9/16/84



#44. Tentacles at Sunset Photo courtesy of Marty Carlock, 9/16/84



#45. Extrusion Process courtesy of Dana Films, Inc.



#46. Extrusion Phenomenon found polyethylene distortion

Footnotes

1. Georg Lukacs, Soul and Form (Cambridge, Massachusetts: The M.I.T. Press, 1971), p. 28.

2. Lucy Lippard,Overlay: Contemporary Art and Prehistory (New York: Pantheon Books, 1983), p.183.

3. Marty Carlock, "The Center for Advanced Visual Studies: Where Art Comes Off the Wall," in Technology Review, July, 1984,p. 10

4. Lucy Mair, An Introduction to Social Anthropology. (New York: Oxford University Press, 1972.) p. 222

5. Ibid.

6. Georg Lukacs, Soul and Form (Cambridge, Massachusetts: The M.I.T. Press, 1971), p. 28.

7. Emile Durkheim, On Morality and Society, edited by Robert N. Bellah (Chicago: University of Chicago Press, 1973) p. xlviiii.

8. New York Times, October 7 1984.

9. RoseLee Goldberg, Performance: Live Art 1909 to the Present (New York: Harry N. Abrams, 1973), p. 6.

10. Lucy Lippard,Overlay: Contemporary Art and Prehistory (New York: Pantheon Books, 1983),p.183.

11. Brian Doherty, "Inside the White Cube Part II: the Eye and the Spectator," Artforum April 1976,p. 27.

12. Ibid.

13. Ibid.

14. Ibid., p.29

15. Ibid.

16. Ibid., p.30

17. Erving Goffman, Behaviour in Public Places (New York: The Free Press, 1963), p. 18.

18. RoseLee Goldberg, Performance: Live Art 1909 to the Present (New York: Harry N. Abrams, 1973), p.10.

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Little Brown and Co.,1970) p.727.

20. Jean Genet, The Maids and Deathwatch: Two Plays (New York: Grove Press,Inc., 1961), p.8

21. Kenneth King, "Toward trans-literal and trans-technical dance-theater," in The New Art, ed. Gregory Battcock (New York: Dutton, 1966), p. 245.

22. Douglas Davis, Art and the Future etc.,(New York: Praeger Publishers, 1973),p. 85.

23. Ibid.

24. Kenneth King, "Toward trans-literal and trans-technical
dance-theater," in The New Art, ed. Gregory Battcock (New York: Dutton, 1966) p. 250.

25. Ibid.

26. Ibid.

27. Kenneth Baker, "Environmental Art: Thoughts on the Earth," In You Are Here : Boston Celebrations, edited by Otto Piene and others. (Cambridge: Center for Advanced Visual Studies, M.I.T.
1976),p.19.

28. Lucy Lippard,Overlay: Contemporary Art and Prehistory (New York: Pantheon Books 1983),p. 121

29. Ibid p. 132

31. Tom Hinckley, "How do you direct 600,000 People," in The Cable Guide, September 1984, p.4.

31. Helen Gardner, Art Through the Ages (New York: Harcourt Brace Jovanovich, Inc.,1975) p.49.

32. Otto Piene, You Are Here : Boston Celebrations, edited by Otto Piene and others. (Cambridge: Center for Advanced Visual Studies, M.I.T. 1976),p. 5.

33. Anthony F. Aveni, "Old and New World Naked-Eye Astronomy," in Astronomy of the Ancients ed. by Kenneth Brecher and Michael Fiertag (Cambridge: The M.I.T. Press 1981), p.71.

34. Wolfgang Bergfeld, et al. Lasergrafie, (Munich: Georg D.W. Callwey, Publisher, 1975), p. 105.

35. Gaston Bachelard, The Poetics of Space (Boston: Beacon

Press, 1958), p.161.

36. R.H. Fuchs, Monuments (New York: Rizzoli Int'l. Pubilshing Inc., 1980), p. 96.

37. New York Times, Saturday December 29,1984.

38. David Bourdon, CHRISTO (New York: Harry Abrams, Inc.,Publishers, 1972). p. 55.

39. Barbaralee Diamonstein, New York's Art World (New York: Rizzoli Int'l., 1979),p. 84.

40. David Bourdon, CHRISTO (New York: Harry Abrams, Inc.,Publishers, 1972) p.23.

41. Ibid.

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43. Harvey Cox, Festivity and Spirituality

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45. Theodore H. Bullock, and G. Adrian Horridge, Structure and Function in the Nervous System of Invertebrates Volume I. (San Fransico: W.H.Freeman and Company 1965),p. 498-501.

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