

**I**N THE LAND OF THE FAIR which covers 646 acres on Flushing Meadows, Film is King. All along the 40 miles of sidewalks, exhibitors are showing pictures that surround the viewer, project on sky-domes overhead, poke their light, shadow and substance through obscuring veils and provide a multitude of ideas and wares on a thousandfold screens. There is 70mm, 35mm, 16mm, 8mm, stereo and monaural sound and a virtual army was enlisted to operate and maintain the complex as well as the simplest, means of projection.

The 300 exhibiting companies and 66 nations at the Fair are joined by religious exhibits of many faiths in this kaleidoscopic exposition of man's material accomplishments, his future aspirations and his spiritual yearnings. The Fair is colorful and chaotic; it has areas of rare beauty in architectural design and an equal portion of garish. But, at this writing, it also had passed the first seven million mark in attendance and was on its way to the anticipated 80,000,000 visitors during the two-year span which ends in October, 1965.

Most notable, from our specialized viewpoint, this Fair has the greatest collection of audio and visual presentation hardware ever assembled on the face of the earth. There are 65 projectors in the Bell System Pavilion and 159 are required for *The American Journey* show in the United States Pavilion. Equally notable is the repeated use of circular theater designs. This is by all odds *the roundest show to date*, and in some ways, *the squarest!*

Lessons for exhibition sponsors abound in the manifold operational difficulties encountered in the first month of the Fair. Most of these have been overcome and they could have been anticipated in exhibits which use such complex electronic gear as that which animates the figure of Lincoln, for example, or the criss-crossing beams which put images around and literally on top of the viewer. Imagine a single show with 110 screens to cover!

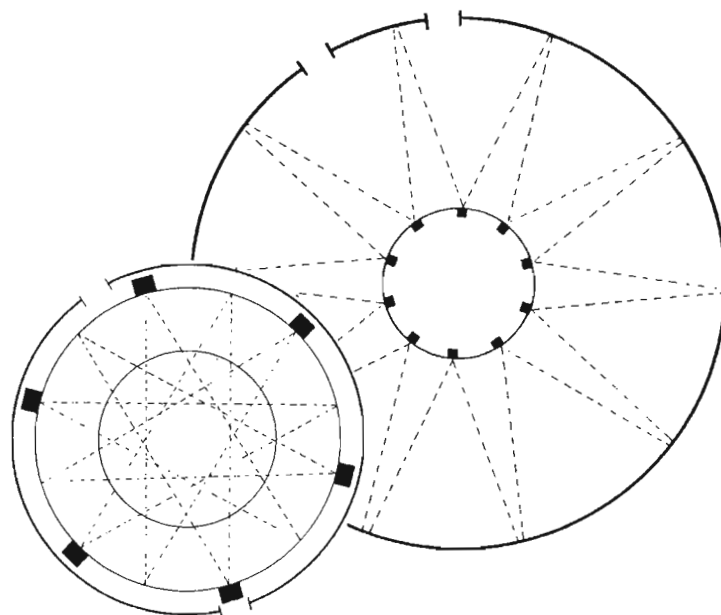
Fair exhibitors are learning fast that their guests have come to be entertained or, at least, bemused. They also want *action* and they get it in the innumerable exhibit "rides" which are Robert Moses' answer to Coney Island. The president of the Fair corporation has rare courage. His show is doing without fan-dancers and has practically exiled the paid amusement area. Instead, visitors are looking into the Futurama at General Motors, at the dinosaurs in Ford convertibles and at Michelangelo's *Pieta* in the Vatican pavilion.

Are the films at the Fair equal to the multitude and complexity of the projection systems? One of these has drawn widespread critical praise for the sheer joy which abounds on the three screens showing *To Be Alive!* in the Johnson pavilion. *The Searching Eye* is a cinematic, imaginative treat for visitors to the Kodak exhibit. Audiences feel they are literally in the action of the 360-degree tour *A-Round New York*. The Moody science films are familiar fare in our field but wondrous to behold again in the Sermons from Science theater.

The "People Wall" in the IBM pavilion is a show itself but there are also nine screens in action all at once as this exhibitor illuminates the science of the computer. Smaller but imaginative techniques are found in the "well" of the *Patterns in Sports* film and in the spherical projection globe of the Berlin pavilion. Cinerama keeps pace with Walt Disney as a major Fair creative source; there is a Cineramic *Voyage to the Moon and Beyond*; and the episodic, multi-screen *American Journey* of the handsome United States pavilion.

This is after a brief, first five weeks after the Fair's on-the-button opening day. It is before the onslaught of the *real* business of the Fair when the schools are closed and vacations begin. And there is the prospect of what might be an even more interesting second year to come. Stimulated by such successes as *To Be Alive!* there will be courageous sponsors who can replace less worthy film fare in '65.

What can be taken from the New York Fair to the innumerable industrial shows, to state fairs? What lessons are to be learned in time for the important Canadian exposition just a few short years ahead? The following 30-plus pages are devoted to the pictures taken by our own Bob Seymour and hundreds of lines of detail on the shows. •



**The editors of Business Screen present:**

# A Pictorial Report on Audio and Visual Exhibition Technique at the NEW YORK WORLD'S FAIR

**32 pages of exclusive pictures and text  
on innovations in production and projection  
among principal exhibitors at the fair**

*A scene from the Tower of Light show exemplifies participation at the Fair of many of these leading U. S. industrial companies.*





# Fair by Moses; Pictures by Bob Seymour!

## An Editorial Foreword to This Special Report

**T**HE PICTURES which thoroughly illustrate these pages on the New York World's Fair are about 90% exclusively *ours*. So is the text. And here's the reason.

Our Eastern Bureau chief, Bob Seymour, spent 12 long days on the Fairgrounds, totaling about 120 long hours, during the first month after opening day. He clocked 165 miles on his pedometer, shot up 347 negatives from which the more than 100 illustrations in this section were gleaned, and he ate (and survived) 27 hot dogs, saw every exhibit at the Fair at least twice (some four times) and waited in all the lines just as you will have to when you go to the Fair.

He advises Fairgoing readers: plan your route before you get there. Don't wander about aimlessly or you'll waste hours in backtracking. Bring your lunch or learn to live on hot dogs, for the restaurant queues are usually the longest at the Fair.

The longest wait at the Fair, among industrial exhibits, is usually at the Ford pavilion, which also has the shortest ride. GM, on the other hand, has probably the most efficient crowd-control system at the Fair and has been aver-

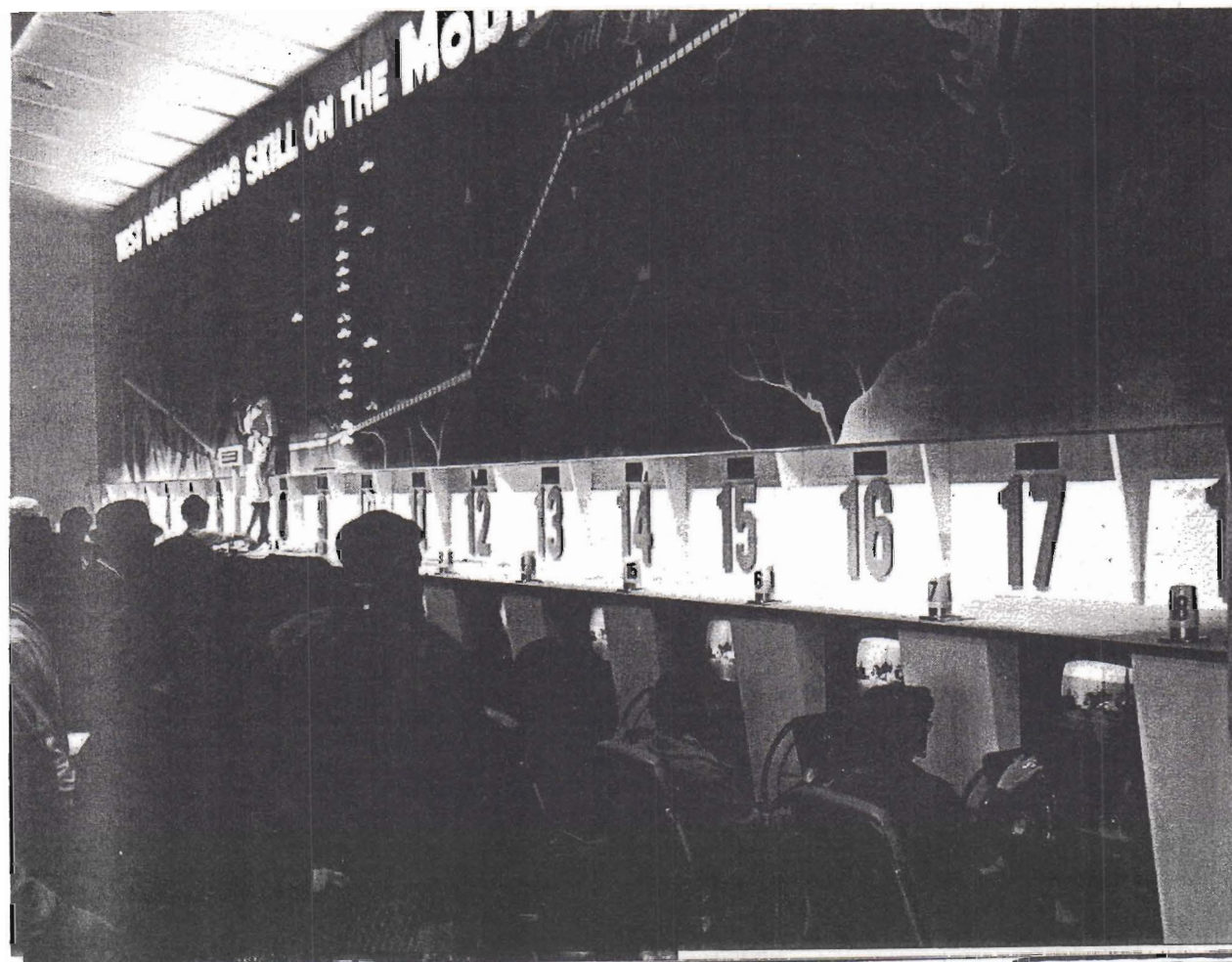
aging only a half-hour wait on normally busy days.

This was a rugged first month and most of the sins of omission and dereliction have been corrected. We'll risk a prophecy that there will be some new films in some of the pavilions before the year is out; certainly a good deal of replacement production for the 1965 edition.

Logistically, he reports, the Fair management would have done better to spread the big attractions around to distribute the crowds more evenly. On a given day, for instance, the Transportation area may be crowded beyond capacity, while parts of the State and International areas and *all* of the Amusement area have much less than normal capacity. A big crowd at one exhibit tends to spill over into other nearby exhibits.

We owe a postscript of thanks to Barbara Skeeter who helped us with invaluable detail on Reevesound projection system installations. And we'll close this foreword with this thought: The New York World's Fair is the largest single factual film theater in the history of mankind, a vast testing ground for projection systems and *a good place to visit!*

*The Mobil Pavilion offers the only audience participation show at the Fair. Simulated Economy Run "game" involves 18 drivers who view same films via closed-circuit telecast into windshield-screens. Scoring is by data processing system; map reports driver's progress. Setup was created by Wilding-Dramaturgy; films were lensed by Tom Willard.*



# Capsule Reviews of Films at the Fair

☆ This brief digest of some 24 principal exhibits featuring films (and slides) also "rates" some of the shows seen during the preparation of the picture and text reports in these pages.

**Bell System:** ride in your own arm-chair past 65 screens you won't see as screens at all . . . films by Owen Murphy. A technical tour-de-force; all it needs is "lighter" touch.

**Chrysler:** Bil Baird's charming marionettes are introduced on film which is, in turn, introduced by Bob Hope. You can't beat that.

**Du Pont:** live actors talk to actresses on several screens, pass flowers from hand-to-screen in this clever, tuneful commercial presentation well worth seeing.

**Eastman Kodak:** lots of smaller screens and two big ones on which to see "The Searching Eye" and an Eastman Chemical-textile film produced by Filmex. Bright, imaginative and impeccable.

**Festival of Gas:** A delightful, short Owen Murphy puppet film on three screens.

**Billy Graham:** the noted evangelist in Todd AO with a message on "Man in the 5th Dimension."

**Greyhound:** all-too-brief coast-to-coast film in CinemaScope (produced by Fred Niles), showing on big, wrap-around screen.

**IBM:** 500-seat "People Wall" carries you into the middle of a multi-screen explanation of life in the computer age. It's clever, humorous and slick.

**Johnson's Wax:** probably the best film at the Fair, "To Be Alive!" is happiness itself, completely non-commercial and a "must!"

**International Pavilions:** there's a projection idea at Berlin; sound and scenes in Ireland; a beautiful pavilion (Spain) with documentary films to match.

**KLM-Cinerama:** Graphic Films co-produced this star-studded journey "To the Moon and Beyond" with exciting scenes and sound.

**U. S. Navy & Marine Corps:** the "you are there" feeling engendered by the Jam Handy-designed Cine-Globe Cruiser in which to see jets and nuclear subs as if you were riding aboard.

**New England:** multi-free-hanging screens give many impressions of "The Faces of New England."

**New York State:** you haven't seen it until you're in the middle of this 360-degree picture produced (with great skill) by Harry Coleman.

**Maryland:** has the Milner-Fenwick picture "Over the Ramparts" on the origins of The Star-Spangled Banner; voice of Arthur Godfrey.

**Patterns in Sport:** seen from a "looking down" position with a real feeling of action. See in General Cigar exhibit area.

**Port of N. Y. Authority:** a film ride via helicopter in another 360-degree picture, produced by Fred Niles and shown on 10 panels all around the viewer.

**Protestant Center:** the much-discussed film "Parable" (also a Niles' production). Strong stuff.

**Sermons from Science:** showing the best of Moody science pictures hourly and worth seeing.

**Tower of Light:** films are all over the place but not worth the quantity approach. A bore.

**United Air Lines:** film takes you "From Here to There" on a jet plane. Interesting patterns as viewed from aloft.

**United States Pavilion:** there is the "major" Cinerama ride past 110 screens and the introductory "Voyage to America" with its immigrant background, produced by Graphic Films and John Houseman.





## World's Fair Exhibitors Sponsor Short Films to Show on RCA Closed-Circuit Color Network

**M**ANY OF THE NATION'S leading companies with exhibits at the Fair are sponsoring five-minute motion pictures for showing exclusively on RCA's closed-circuit color television network on the Fairgrounds.

About 75 firms, thus far, are planning to supply films for the 300-set network, including Time, Inc., National Cash Register, Eastman Kodak Company, General Cigar Company, Ford Motor Company, Schaefer Beer, American Express, Formica, General Foods, Socony Mobil, Bell System, Chrysler, DuPont, IBM, General Motors and New York Airways. These films will run the gamut from things to do and see at the Fair to the new uses for helicopters. At this writing (late in May) about 150 sets have been installed at various sites around the Fair, half of them in VIP lounges of the big pavilions. By the middle of June, most of the other public location sets will have been set up.

While most of the sets are located indoors — largely in public and private lounges — a few are outdoors and operating only at night — at the Denmark and Chunky Candy pavilions, for instance. National Cash Register has a set in a prominent place in its pavilion, Bell System has six sets, and IBM has five.

All the sponsored films to be shown on the network are institutional in nature — Fair-oriented and non-commercial. They will

range from reviews of what is going on inside the pavilions to things about the Fair that people would not normally know about —



*RCA color television set at the Danish pavilion. Network will be completed by middle of June.*

odd facts, odd jobs, even movie shots of the Fair under construction.

"Since it might take as much as three weeks for a visitor to see everything at the Fair," says James M. Toney, Director of RCA's World's Fair Operations, "the closed-circuit network will help visitors see many things they might otherwise have missed."

Mr. Toney said the color TV network — largest of its kind in the world — will be programmed to make the Fair "more interesting, entertaining and informative for all visitors."

U.S. Steel Corporation, for example, has made a color film (by

MPO) on how the Unisphere was designed, fabricated and erected as a permanent reminder of the Fair's "Peace Through Understanding" theme. Sinclair Oil Company is producing a film on its life-sized dinosaur exhibit.

The American Iron and Steel Institute is doing a film (by Audio Productions) on the importance of steel construction in the Fair buildings. The Bell System has been shooting for several weeks (Owen Murphy Productions) on its exhibit at the Fair. Walt Disney is doing a film on the Pepsi-Cola exhibit, which was designed by his staff.

In addition to running the short

films repeatedly each week, RCA will divide the Fair into eight zones and run a ten-minute film highlight of each zone on its appropriate hour — zone 1 at 1 pm, zone 2 at 2 pm, and so on.

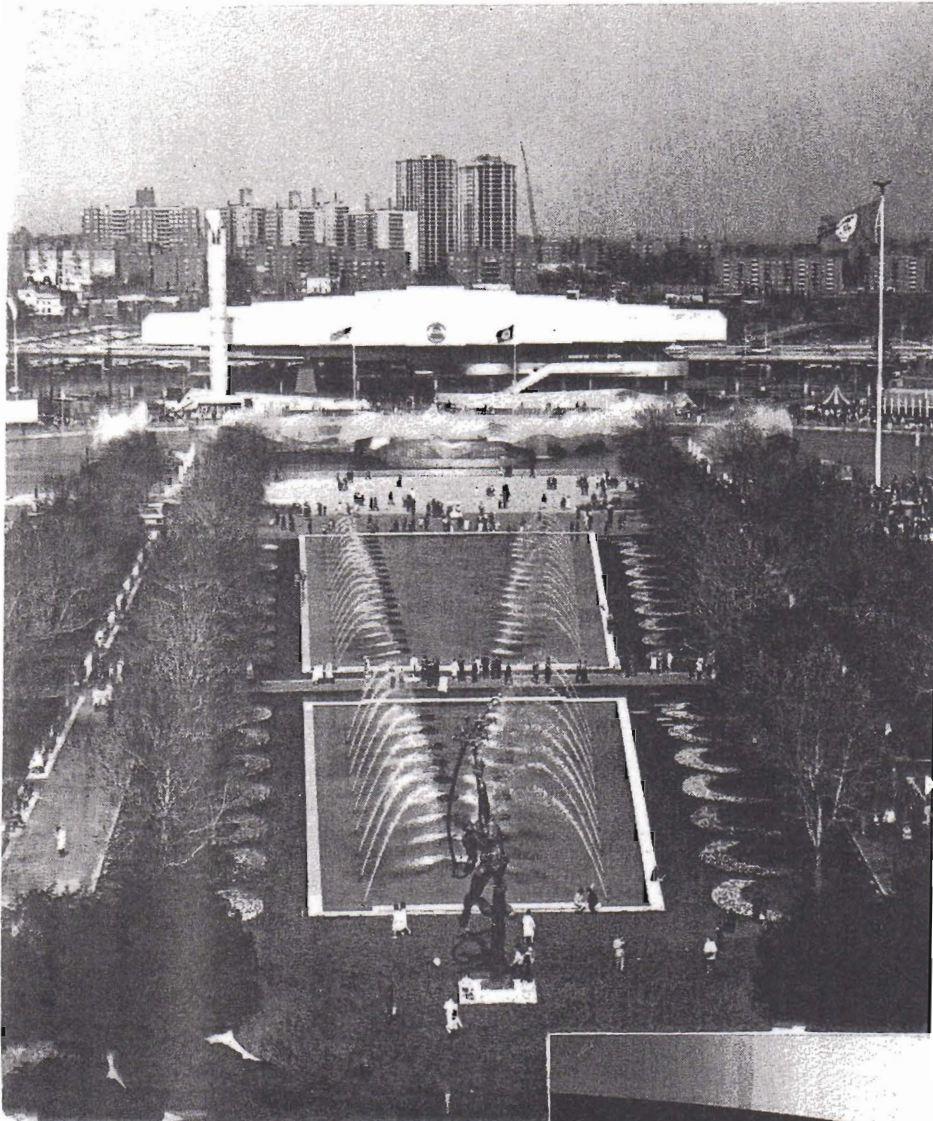
The films are only part of the over-all programming being planned for the network. Edited videotapes of shows appearing live in RCA's color television studio at the Fair will also be run at regular intervals.

Highlights of important events on the Fair grounds including the Olympic speed trials, will be carried live, as will lost children and five-minute news shows produced by the Fair Corporation. •

*Everywhere you look at the Fair there are friendly faces and all kinds of exotic costumes. These boys from Chichicastenango, Guatemala have been taking in sights at Hong Kong exhibit in the background.*







# BELL SYSTEM PAVILION

**armchair "sound ride" takes 1,000 viewers  
on film journey "From Drumbeat to Telstar"**

**T**HE "RIDE" in the Bell System Pavilion is one of the most complex and interesting film experiences of the Fair. The 1,000 moving armchairs with built-in speakers in two continuous loops of 500 each on two levels carry spectators through a 15-minute program which involves 65 motion pictures on individual screens.

Titled *From Drumbeat to Telstar*, the program takes us from man's first efforts to communicate — with voice, drumbeats, smoke signals — on through the discovery of symbols, numbers, the written word and modern developments — the telephone and Telstar. The story is told by speakers

synchronized to the action on the screen for each individual chair.

The ride was conceived by the Pavilion's designer, Jo Mielziner, working with architects Harrison & Abramovitch, motion picture engineers — the Reevesound Company, and the film producers, Owen Murphy Productions.

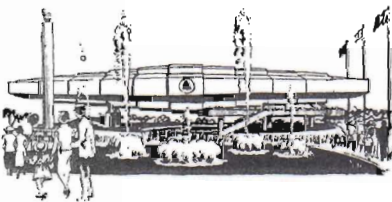
On the 65 screens — which cannot be seen as screens at all since they are veiled in various thicknesses of gauze curtains called scrims — are short pieces of action performed by Hal Holbrook, noted stage actor of "Mark Twain" fame.

Mr. Holbrook will be seen calling "hello" in an early part of the ride, sending smoke signals, inventing the printing press or the telephone. It takes an average of six seconds for each chair to pass each individual screen (although many of the screens are grouped in a single tableau). On the screens are endlessly repeated actions on looped films which run from six to 15 seconds.

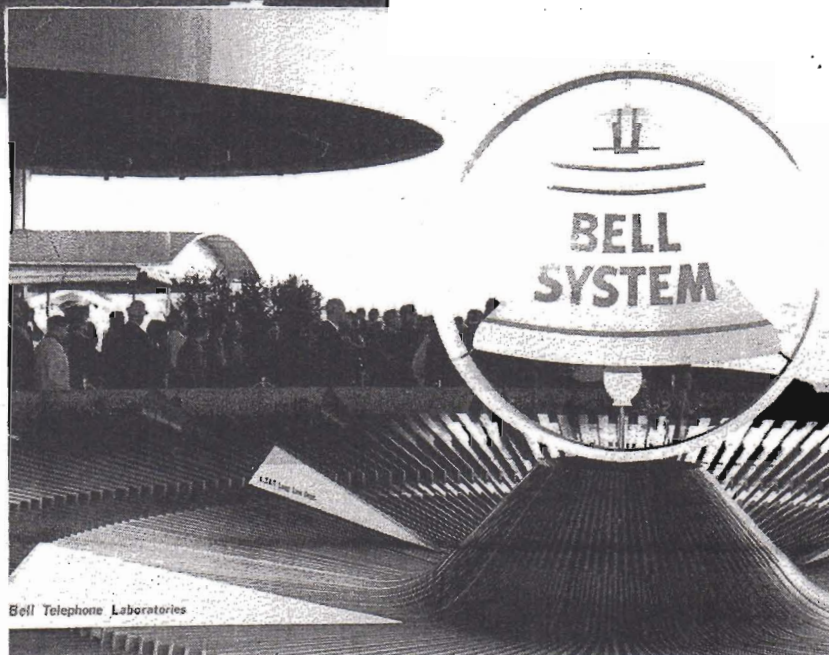
What is amazing about this is that there is no point at which the action can be seen to obviously stop and repeat itself — no jerks at the splices to spoil the smoothness.

Director Paul Cohen, of Owen Murphy Productions, achieved this by working with Mr. Holbrook until he was able to perform an action "forward" and then smoothly continue "backward" to the point of origination of the action. In other words, he would

Above: the Bell System Pavilion is a 400-foot "floating wing" which offers a chair ride and series of live demonstrations.

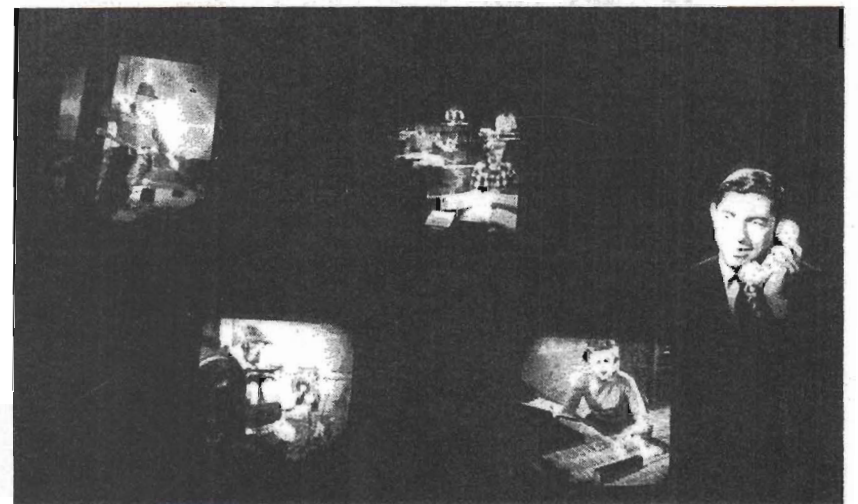
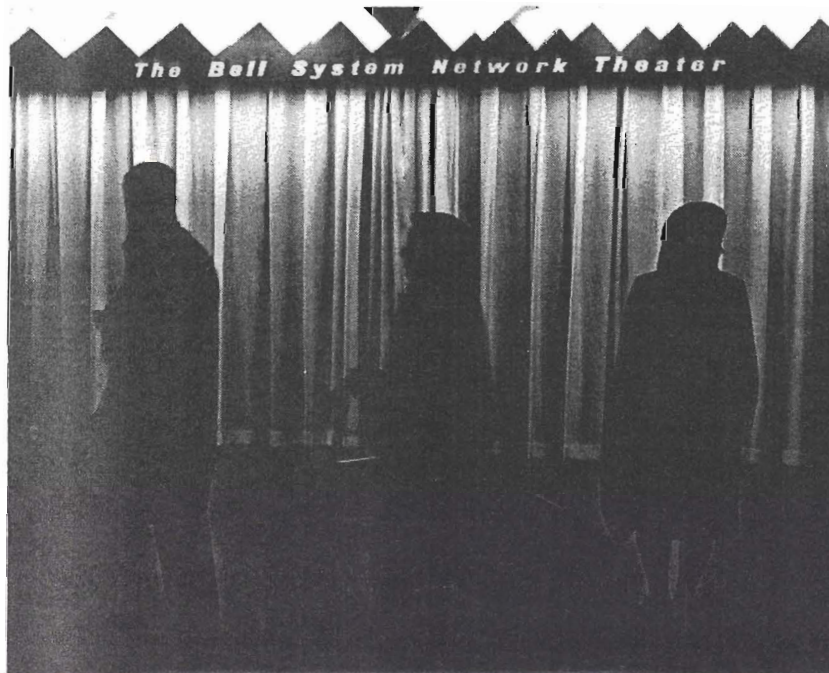


Right: familiar visitors' line awaiting turn along Bell's ride. Crowd control is very good here.



Exterior of small "stand-up" theater in main downstairs exhibit area. Audiences of 80-100 persons see a multi-screen slide presentation on many facets of telephone service; show is repeated every 15 minutes.

Inside the "stand-up" theater: the slide show utilizes colorful lighting effects, Technamation techniques. Scenes come up on several panels individually and "en masse" through both front and rear projection.





pick up a pen, write a few words, fold the paper, and lay it aside. Then he would continue right on doing the same thing, but backwards.

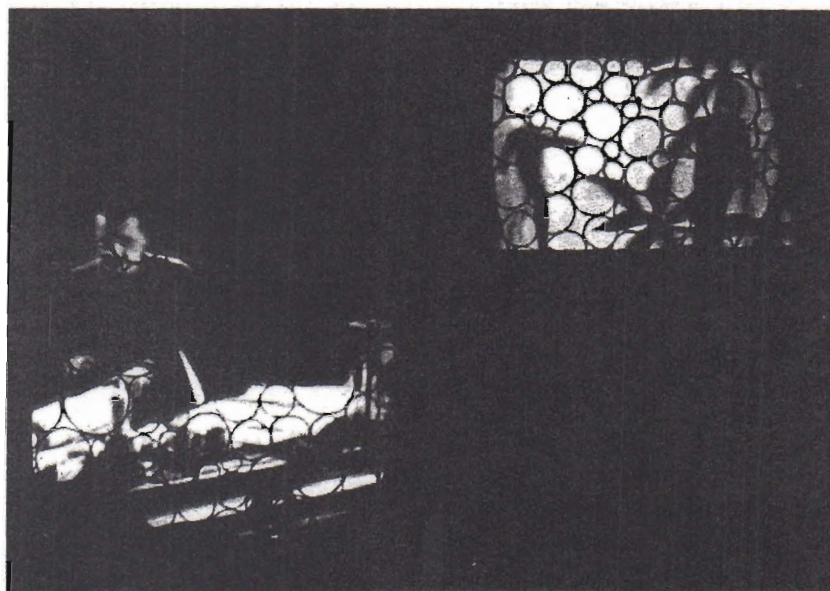
With this forward and backward action on film, editors could then print the "forward" portion straight, reverse print the "backward" portion, and splice almost anywhere in the action without it being noticeable on the screen. If this sounds complicated, it most assuredly is, but it works.

To achieve the effect of having none of the screens visible, Designer Joe Mielziner has used multiple scrims before each one, and the figures in the film are performing entirely with limbo back-

## Design and Engineering of the Bell Show

**D**ESIGN AND ENGINEERING installation in the Bell System Pavilion was a major task in itself, primarily centering on the 1,000 chair "sound" ride which occupies a mobile ramp in the "floating" wing of the wide structure.

Produced by Jo Mielziner of New York, this unusual theatrical presentation has projection and



*Scenes for the 65 loop films which carry the story of "From Drumbeat to Telstar" along the chair ride are seen through scrims of varying styles, thickness so that there is no apparent background, no visible frame lines. Resulting fuzziness (at times) doesn't improve quality.*

of special two-ear design is built into each of the 1,000 upholstered lounge-type chairs.

This sound system utilizes two tracks on Reevesound's four-track, sixteen-millimeter reproducing system, with like programs being fed through right and left ear speakers, positioned at the upper inside of the chairs. Individuals are provided with a sound program that is synchronized with the ride.

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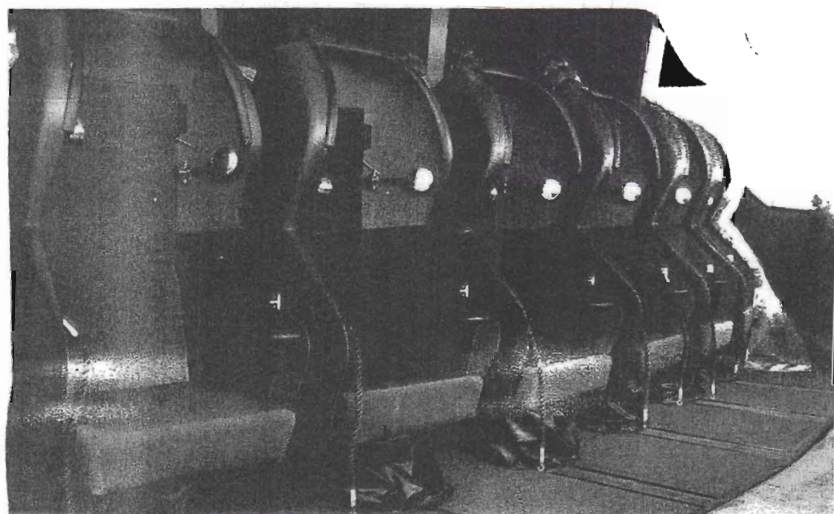
☆ Reevesound's projection system in the cavern includes a battery of sixty-five 16mm Norelco projectors equipped with 1600 watt Zeiss Xenosol II light sources, first-surface mirrors, continuous duty synchronous motors and spe-

cially designed film loop supports.

Projectors, lamps, rectifiers and loop racks are located on long platforms behind a series of rear projection screens. A first-surface mirror placed at the front of each projector mechanism receives light from the projector, redirects it to similar, larger mirrors positioned overhead, which transfer light to rear projection screens ahead. This system of mirror optics is used to increase projection distance and image size.

This combination of continuous 16mm film loops, synchronous motors and Xenon lamps gives the Reevesound system long operating life with minimum maintenance requirements on film and projection equipment. •

*Below: battery of 65 Norelco 16mm projectors lines up along slightly-curved ramp behind the 1,000 chair ride in the Pavilion. Overhead-first-surface mirrors increase projection distance and image size.*



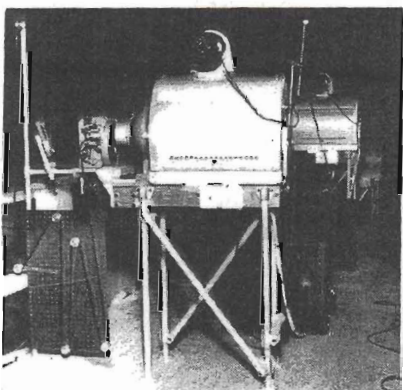
*Sound-equipped upholstered chairs which carry visitors along the ride.*

grounds. There are no frame lines anywhere visible. This was accomplished by photographing the action on a blue cyclorama set. Then, by printing this through a blue filter, a matte exactly matching the action is obtained. Printing both together produces a film with no background, no frame lines, and the character entirely in limbo.

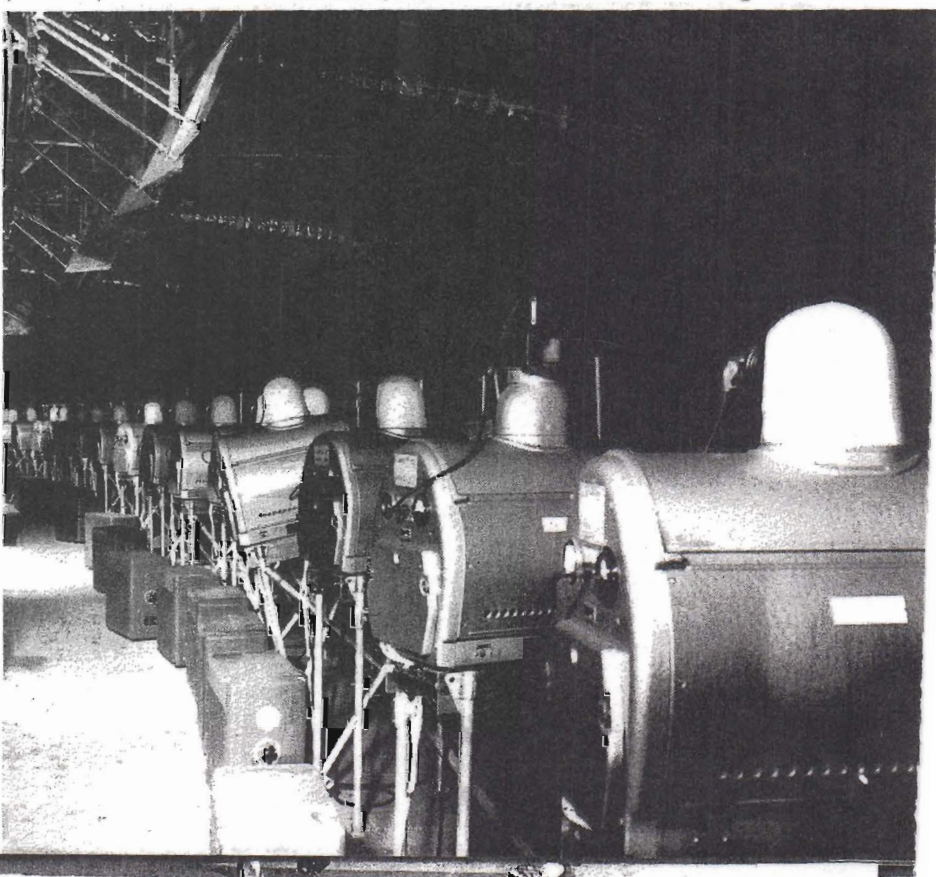
Each of the 65 loops in the program is changed daily. It is estimated that an average loop goes through 5,000 runs during the 12-hour day before it is discarded. For the producer, this means a regular editing staff constantly preparing new loops for the projectors.

With all these extraordinary complexities, it is a tribute to the designer, producer and engineers that the Bell System ride started operating at 10 AM on the opening day of the Fair and has continued with no breakdowns ever since. The Pavilion's percentage of visitors has steadily increased and *From Drumbeat to Telstar* seems settled into a long, successful run.

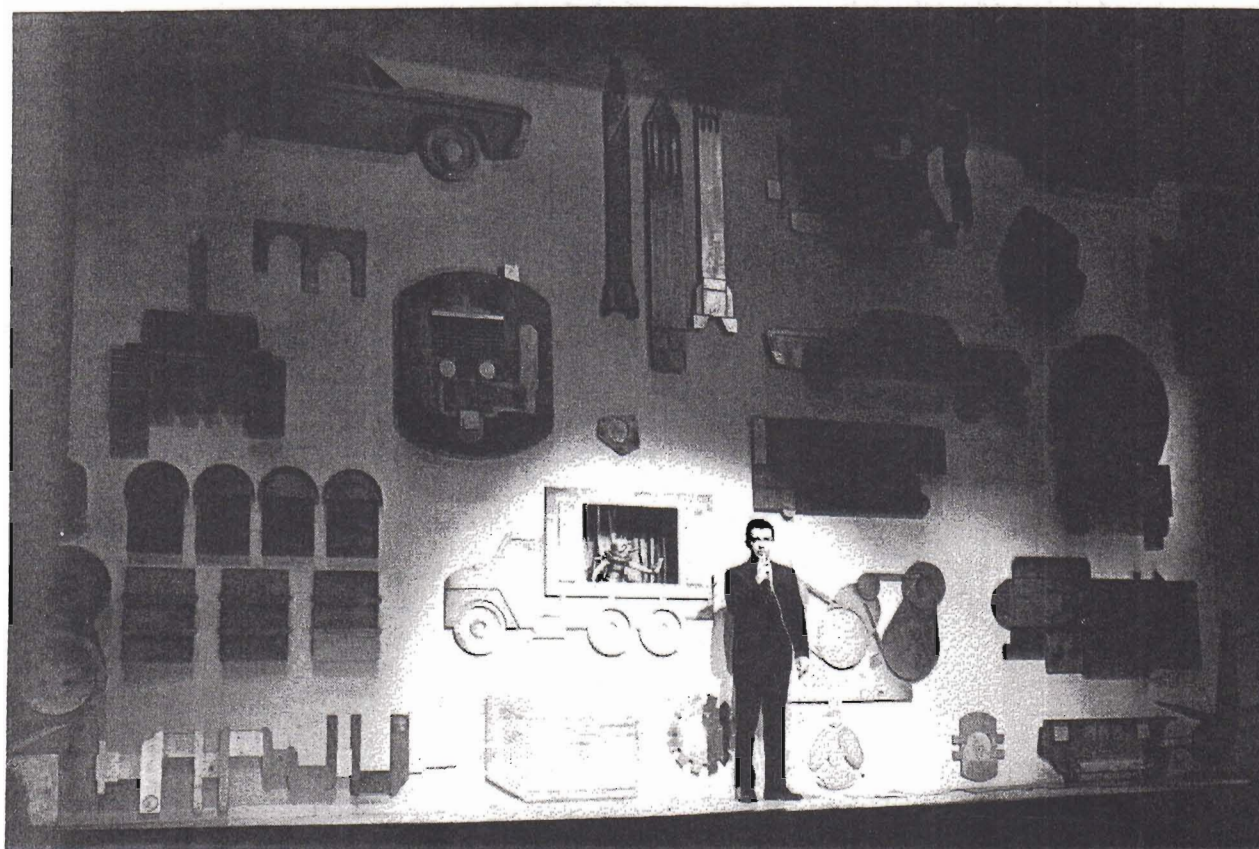
sound systems of unique capability which were created by Reevesound. A monaural sound system



*Above: closeup of one of the 65 Reevesound-modified 16mm Norelco projectors used along chair-ride in the Bell Pavilion. Each projector is equipped with 1600-watt Zeiss Xenosol-II lighting source, a first-surface mirror and the 16mm film "loop" rack which can be seen at left in scene.*



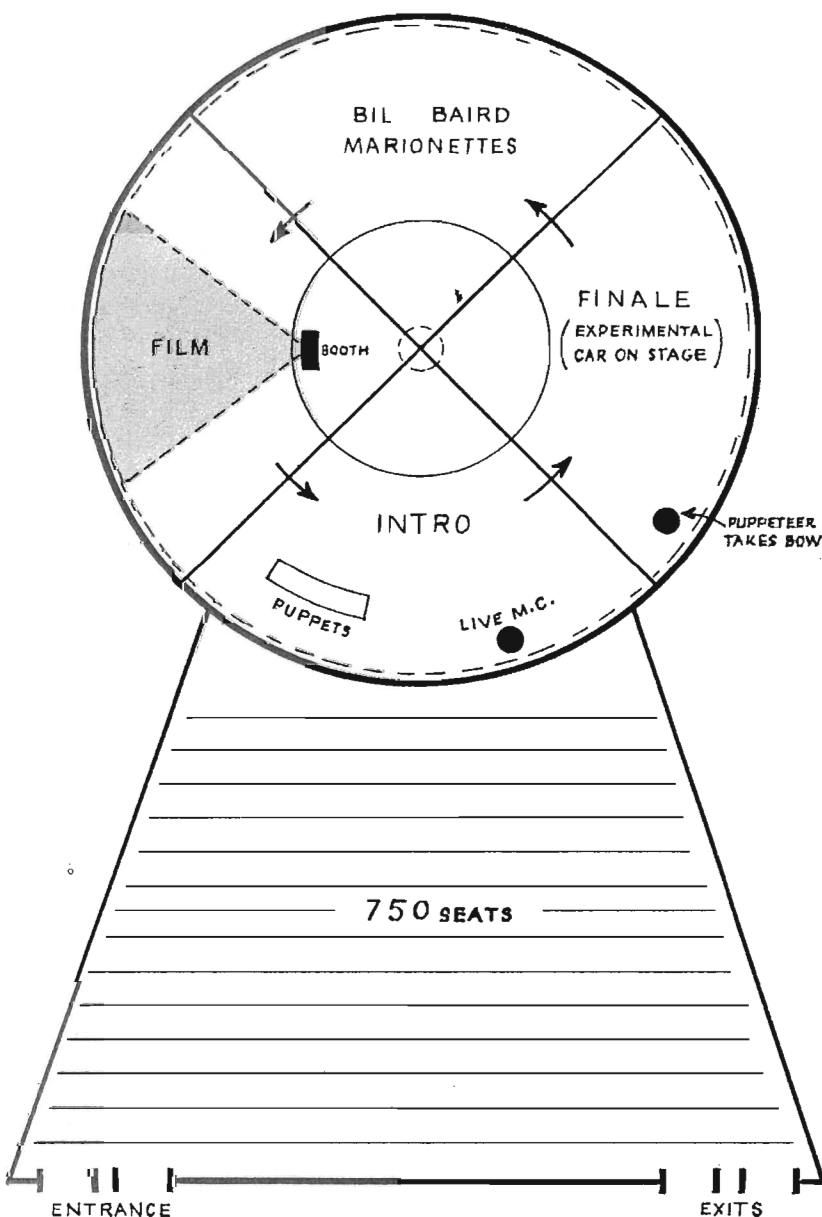




Introductory scene for Chrysler's Show-Go-Round as m.c. introduces one of "stars," a "carburetor" puppet.

## THE CHRYSLER SHOW-GO-AROUND

... films, marionettes and a marvelous car take turns on revolving stage



THE SIX-ACRE Chrysler Corporation exhibit area on Flushing Meadow is dominated by a giant engine model which typifies this "Autofare" with its landscaped islands of displays and mockups. But the focal center is the "Pentastar-roofed" theater in which a Max Liebman Show-Go-Round production is presented on a 70-foot revolving stage serving four pentagon-shaped auditoriums housing some 2,500 persons in their comfortable bucket-shaped seats.

Through this unique design, a

four-phased performance is in continuous action offering a 24-minute interlude of music and whimsy, featuring a film story (introduced on the screen by Bob Hope); the Bil Baird marionettes and a finale in which a Chrysler experimental car (designed by the puppets) closes the entertainment.

In the introductory, first phase of the show, the master-of-ceremonies talks to puppet hero "Bob Bolt" against a backdrop of automotive parts. As the stage revolves to a big-screen, rear-projection setup, Hope (on film) introduces the rest of the little film play about an eager auto designer which starts out on the screen. This Group Productions' film is followed by Phase Three.

In this phase, the marionette creations of Bil and Cora Baird take over the action. Singing and dancing gaskets, dancing spark plugs, animated carburetors and jiving seat belts perform under the skillful hands of four rotating crews of five puppeteers each. The villain, "Monkey Wrench," gives way to a dancing line of 15 girl motor blocks as the stage turns to Phase Four, the big finale . . .

Before the final curtain falls, a completely-assembled puppet-built "experimental car" appears on stage, designed by the young genius with the help of his friends.

Max Liebman's talent, the genius of the Bairds, air-conditioned comfort and the attention-holding film and "live" segments on the revolving stage add up to full houses for these Show-Go-Round performances. In this show, film is the time-compressing link which sets the stage and story line. ●

Left: sketch shows 70-foot revolving stage which serves four pentagon-shaped theaters for the Chrysler Show-Go-Round. Below: typical audience gathers for the introductory scene (see above). Then stage will revolve to film show, marionettes and the "live" car finale.





# wonderful world of CHEMISTRY

*films are blended into lively stage shows*

*in two theaters of Du Pont's circular pavilion*

**T**HE DU PONT PAVILION SHOW, "Wonderful World of Chemistry," is a musical revue in which singers and dancers onstage join in musical interplay with other performers on motion picture film.

It's startling fare, which requires perfect timing, especially when a girl on film passes a rose to a boy onstage, who in turn, hands it to another girl on film.

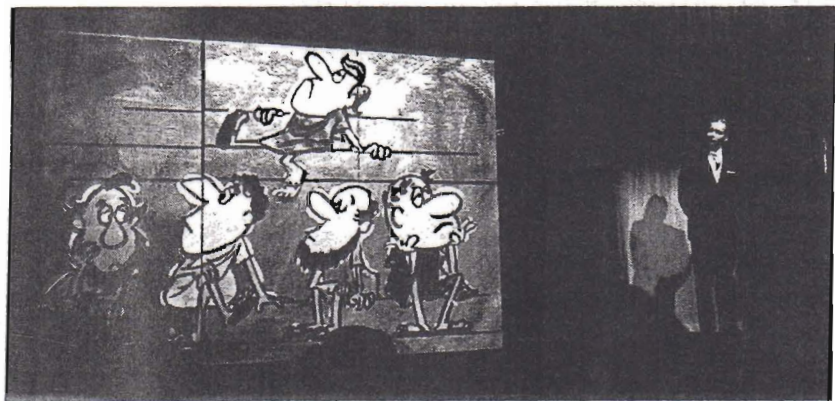
Three circular theaters uphold a N. Y. Fair tradition. In the Blue and Gold Rooms, audiences are

viewing the same musical show; then they move to a dazzling Red Room for science demonstrations.

Michael Brown wrote, produced and directed "Wonderful World," using an Elliott, Unger & Elliott film production. Animation was by Ernest Pintoff; special effects were by Film Effects of Hollywood. Bob Hills was show consultant. Scientific concepts and design of the Red Room show were by Jonathan Karas, with a spectacular finale in Mobilcolor. ●



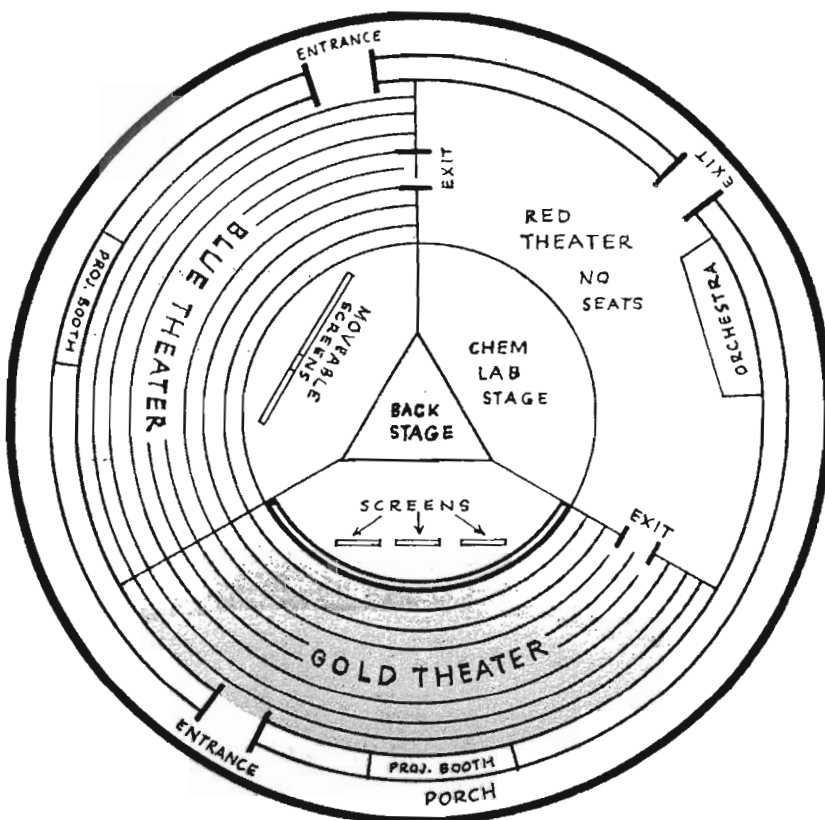
Girls on screens and boys onstage perform the flower-passing sequence.



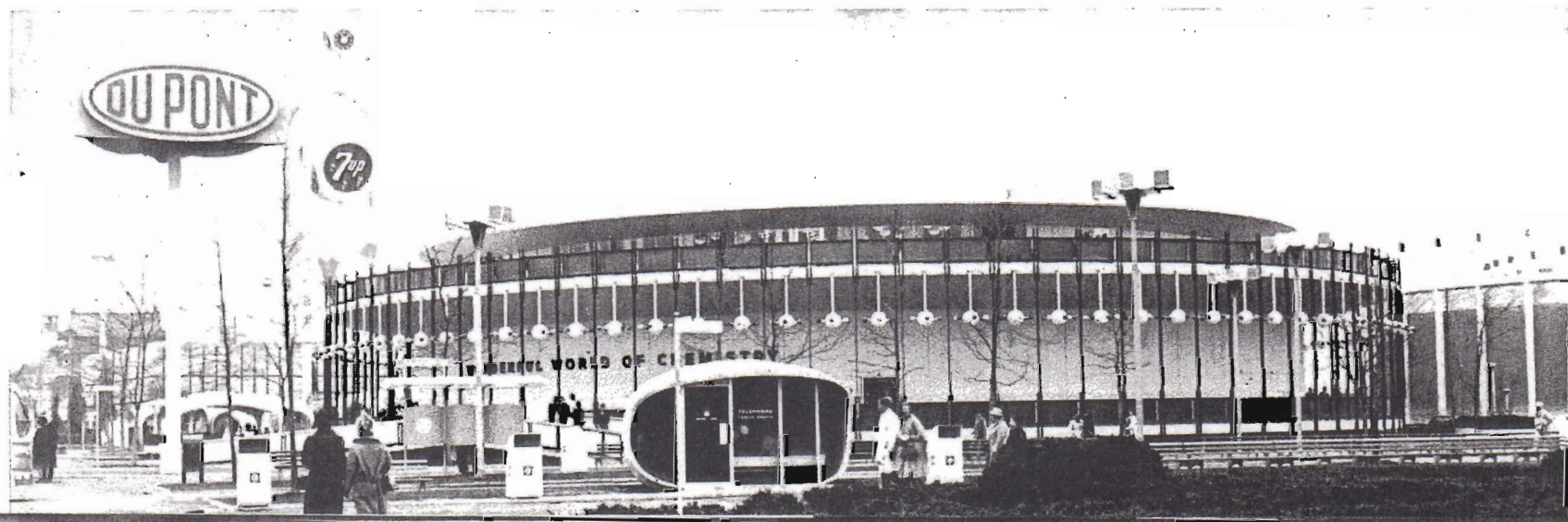
Above: in this animated film sequence, audiences learn that all Greek philosophers did was just sit around and think; other film sequences continue the interplay between live talent onstage, events on screen.



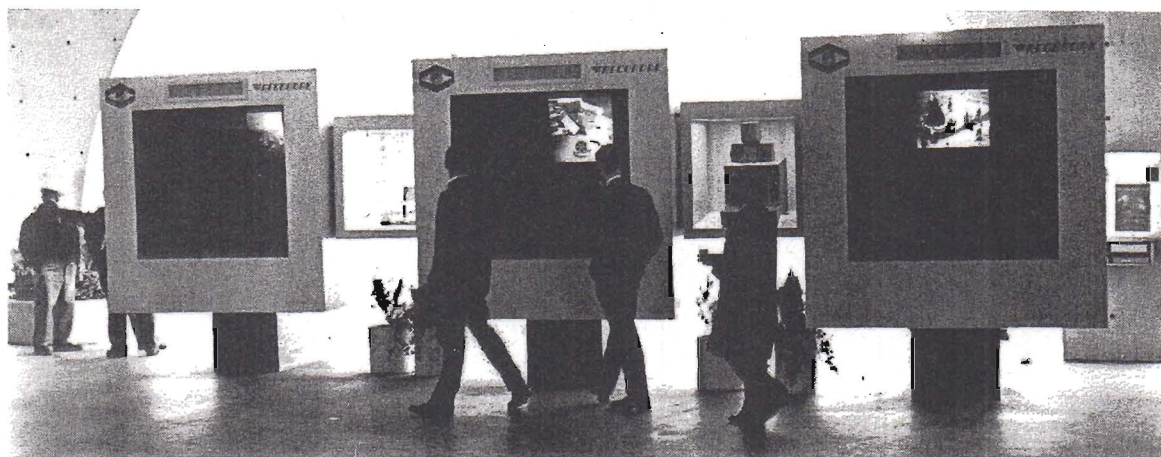
Fairgoers wait on the colonnaded "porch" of the Du Pont Pavilion for their turn to see "The Wonderful World of Chemistry" musical revue.



Above: sketch of the Du Pont circular theater arrangement (all elements are stationary). Both Blue and Gold Rooms offer same musical show. Below: huge circular pavilion which houses Du Pont's exhibit.







Shadow-box "kiosks" present Recordak features on rear-projected continuous slides, using Eastman Carousel equipment in system.

## THE KODAK PAVILION

within its free-form building, two theaters

with 70mm films and many visualized displays

**T**HE ARTISTRY of visualization expected of a leader in photographic equipment and materials has been achieved in the imaginative and exciting free-form building of the Kodak Pavilion.

Picture-making opportunities abound on its "Moondeck" roof; the world's largest outdoor color prints illuminate the dominant "Picture Tower." Within, a pair of round theaters each present excellent 70mm motion pictures.

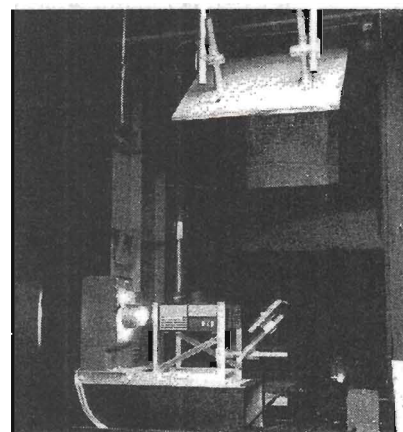
Dozens of small "kiosks" around the exhibit areas offer rear-projected slides and motion pictures

on Kodak products and a good part of the pavilion is devoted to examples of the best in modern picture-taking; aerial photography, TIROS weather pictures, and the like.

And throughout the Fairgrounds, Kodak signs point out good picture possibilities, including correct exposures and even sample prints for the camera fan!

### Projection Engineering

☆ Working closely with producers, architects, technical representatives of Eastman Kodak Company



Slide projection installation in kiosk showing modified Eastman Carousel projector with 450-watt Cinemeccanica Xetron light beam.

and Eastman Chemical Products, Inc. from earliest planning stages. Reevesound provided more than two dozen motion picture technical systems for the Kodak Pavilion. These include projection, sound and control devices located in two theaters and in a number of individual displays strategically located throughout the Pavilion.

Reevesound's projection, sound and control system in the Dome Theater includes one Norelco 35/70mm projector operating at

70mm, equipped with a 2500 watt Zeiss Xenosol II light source. A special selsyn drive electrically interlocks the projector and a pre-programmed 60-channel controller that regulates a six-channel sound system and a dimmer bank for synchronous operation of theater lights.

As adapted by Reevesound, an Industrial Timer controller utilizes sixty of eighty-two available channels, regulating thirty load circuits. One foot of tape controls sixteen seconds of program time. Interlock drive paces the tape as it controls faders, spots, screen and cove lights, a six-channel sound system, an atom model and a Spitz star field projector, main feature of a thirteen-minute film.

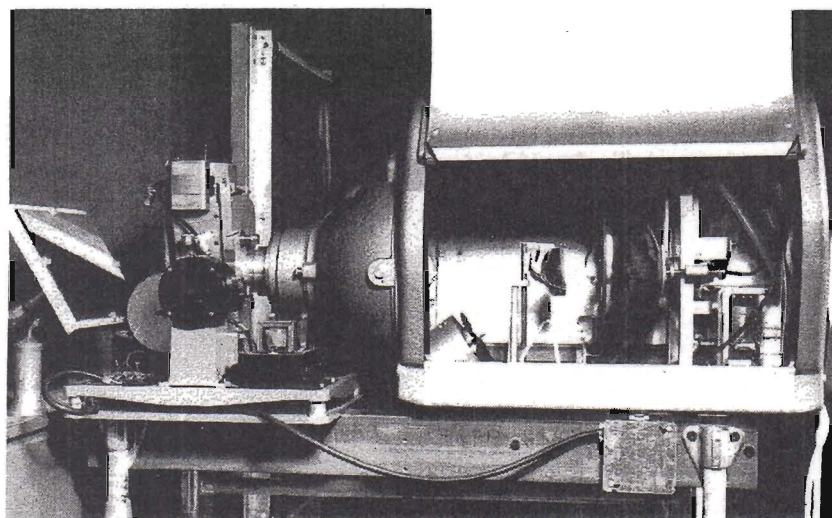
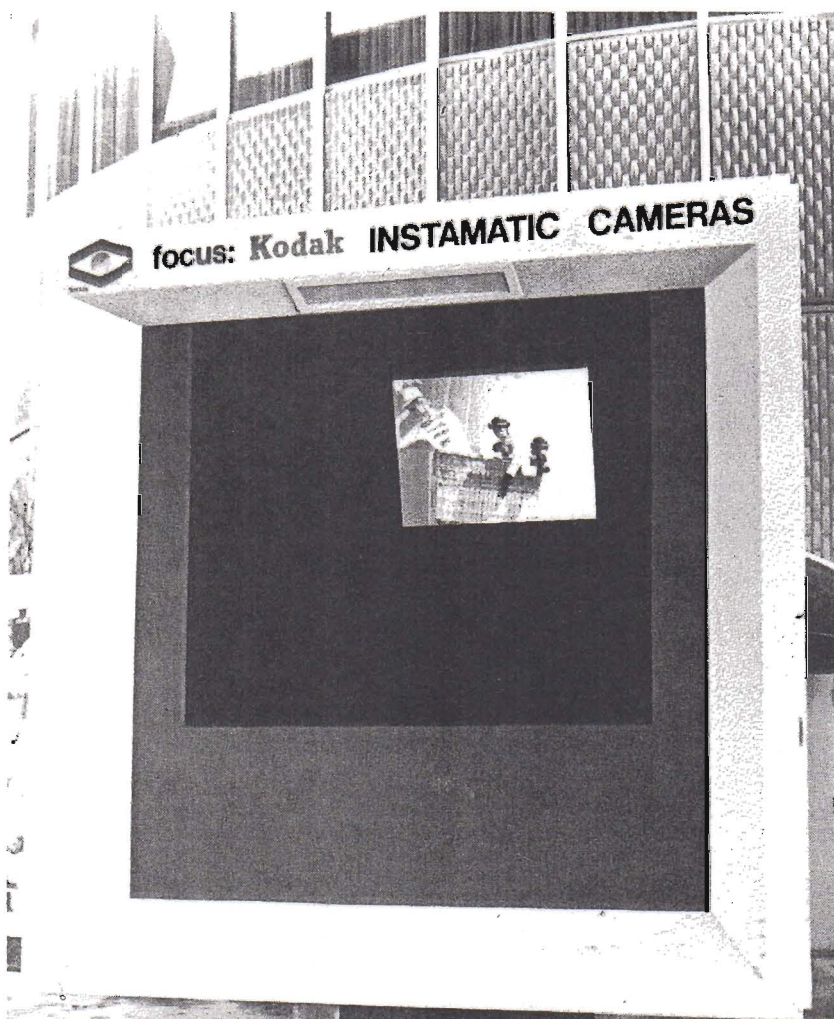
### "The Searching Eye"

Shown daily in the circular Tower Theater, the 20-minute color motion picture, *The Searching Eye*, is one of the focal points of the Kodak Pavilion. Produced by Saul Bass, the film dramatizes the heights of sensitivity to which vision may be honed on a motion picture screen.

Reevesound's unusual motion picture system in the Tower Theater includes two 35/70mm Norelco projectors equipped with 2500 watt Zeiss Xenosol II lighting sources, plus a multi-channel control and audio system.

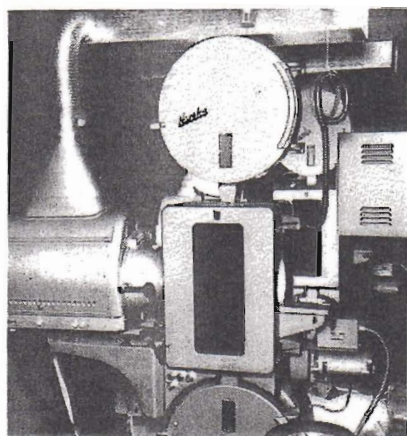
Reevesound's selsyn system electrically interlocks the two Norelco projectors. One presents a 35mm film while its mate shows a 70mm film. Screen images resulting from this interlock operation of 35mm and 70mm projection give the film producer a dual format capability which he needs to develop his theme and story.

This special system allows the



Above: Kodak's "chimpanzee" film projected in the "Instamatic" kiosk (at left) is assured bright, sharp images by use of modified Eastman 16mm arc mechanism with its Zeiss Xenosol II lamphouse and continuous film loop. Long operating life, minimum care were objectives.



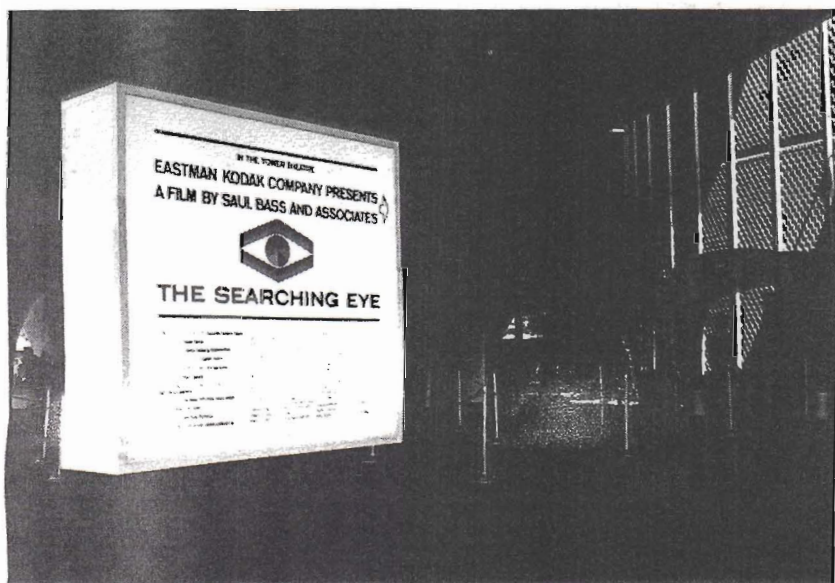


Tower Theater projection system uses two 35/70mm Norelco projectors with 2,500-watt Xenosol arc lamps and magnetic sound heads.

up the story, showing composite prints all made from intermediates.

Transitions from one machine to another are timed with great accuracy. Automatic dowers close to keep lamp heat off black leader on the machine that is not in use. The dower operations were programmed during production of the film, and operate by control tones carried on two of the magnetic stripes on the 35mm print.

Special Kodak/Reevesound motion picture systems are located in ground-level kiosks at Eastman Kodak Pavilion, displaying uses of photography in science. Systems include Eastman Model 25-B 16mm arc projector mechanism

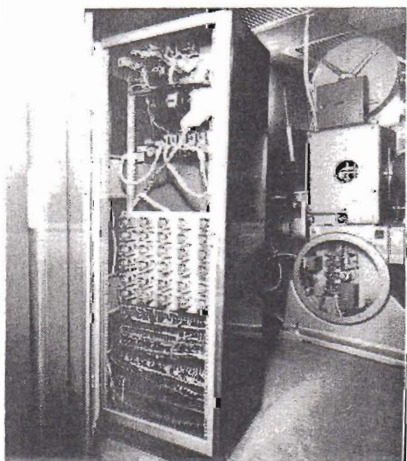


At entrance to pavilion's Tower Theater, this lighted panel proclaims "The Searching Eye" 70mm film feature, gives credits for production.

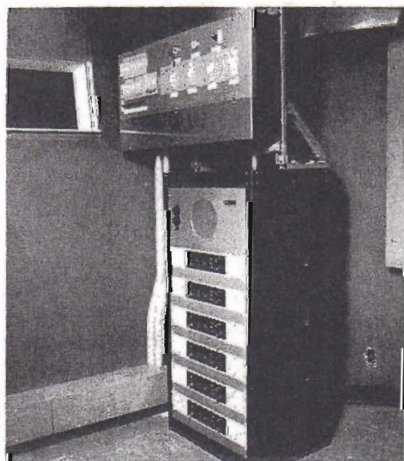
two projectors to show alternate segments of film. The 35mm machine opens the show, projecting first-generation prints from original camera film. As the show progresses, the 70-mm projector picks

equipped with 1600 watt Zeiss Xenosol II light source and 130-foot 16mm Reevesound synchronous loop equipment.

First-surface mirrors mounted at front of projector mechanism



Modified Industrial Timer controller utilizes 60 of 82 available channels to control dimmer bank, 35/70mm projector, six-channel sound system and other devices in the Dome Theater.



Lumitron dimmer bank atop six-channel sound system activates fader, spots, screen, and cove lights in Dome Theater. Both units are automatically controlled by Timer shown at left.



Visible all over the Fairgrounds, the Kodak Picture Tower dominates the free-form Pavilion building with its multitude of visual shows.

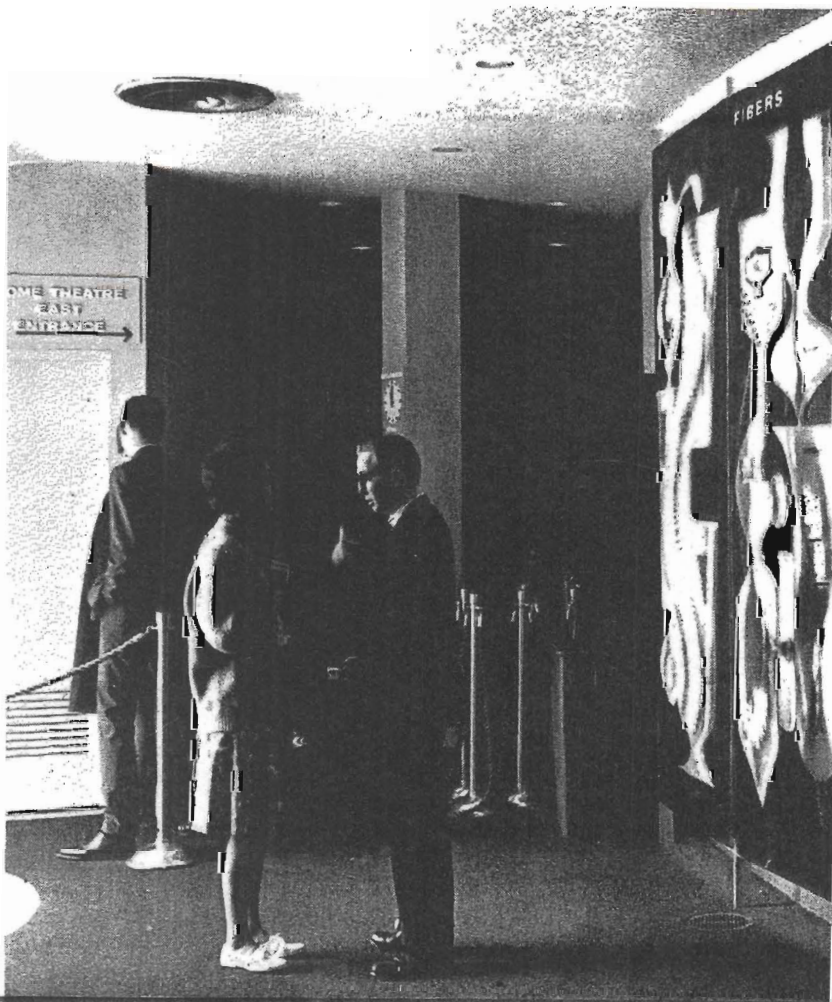
and above projection equipment re-direct light until it reaches rear projection screen, where image is formed.

This special system for projecting a seven-minute sound motion picture utilizes a Xenon light source and continuous film loop for long operating life with minimum maintenance requirements.

An unusual Reevesound system

in the Astronaut Bubble is designed to activate an animated astronaut in synch with optical sound track on 16mm film and motion picture display. The sound track carries narration, as well as a sub-sonic signal to activate the astronaut. The system includes a Reevesound-modified Eastman 25-B 16mm mechanism equipped with a 900-watt Xenon arc lamp.

Below: one of company's many well-trained "hosts" greets visitors at entrance to Dome Theater where Eastman Chemical film is shown.







While line gathers before Ford Rotunda, convertible on runway above prepares to enter the "dinosaur to the wheel" show area just beyond.

## ON FORD'S MAGIC SKYWAY

*a convertible ride into prehistoric times*

**S**IGHTS UNSEEN for millions of years on earth are recreated in animated dioramas along a "ride" which is the feature of the Ford Rotunda at the Fair. Taped sound is fed through speakers of Ford convertibles in which visitors are towed past the dinosaurs, through the Birth of Man, emergence of the cave man and the invention of the wheel.

☆ Walt Disney "Audio-Animatronic" figures make it all pretty realistic and the new cars are an unbeatable "commercial" by themselves. Henry Ford II does the introductory talk; a professional narrator carries on during the ride. Crowd lines are generally long. Principal early problem was keeping sound going through those car speakers along the ride. ●

Fair visitors hear narrated story on car speakers as they watch two Audio-Animatronic triceratops during hatching of prehistoric babies.



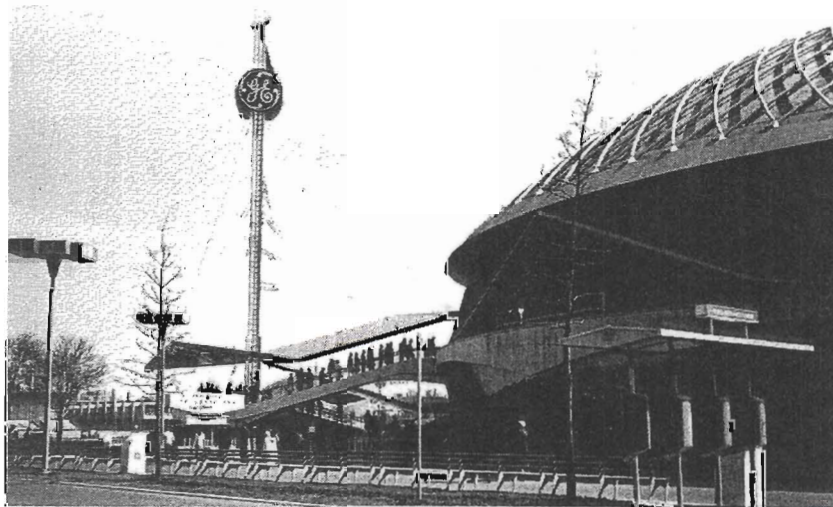
## G.E. IN PROGRESSLAND

*a carousel ride beyond "electrical living"*

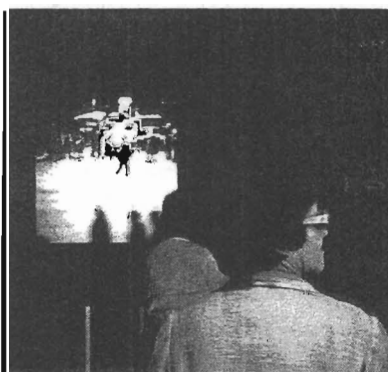
*leads to a demonstration of nuclear fusion*

**G**ENERAL ELECTRIC'S "Progressland" show ends up with an actual demonstration of controlled nuclear fusion. No Fair exhibitor can top that for a finale!

☆ The big G-E Pavilion features a Carousel of Progress ride on which six audiences of 250 visitors apiece move along ramps and into theaters. The show opens with



Crowds move up the ramps to the Carousel of Progress within the G-E Pavilion. Circular building is 200 feet in diameter, 80 feet in height.



On the lower level of the G-E Pavilion, two little "stand-up" theaters offer continuous showings of G-E product pictures.

Disney-designed "Audio Animatronic" figures in re-enactings of life-at-home in the 1890's, through the 1920's, 40's and the up-to-the-minute all-electric home of today!

Groups are moved out of the nostalgic past into a "Time Tube" which opens on the third floor "Galaxy of Science and Engineering" with its dramatized examples of G-E scientists working on current research projects. Kaleidoscopic mirror effects are a feature of this sequence.

Inexorably, visitors find themselves in the top-level "Skydome" with its "Spectacular," a projected

In the 1920's: the family's latest "electrical servants" are connected to cords dangling from ceiling as "father" proudly notes progress.





Re-Creations of the Past and Visions of the Future Are  
in These Three Major Pavilions of the New York Fair

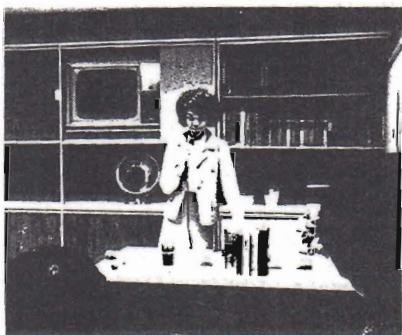
and narrated dramatization of the power of nature's energy and man's efforts to harness it. It ends with an explanation of nuclear fusion as audiences then descend the central well of Progressland for the nuclear fusion "bang."

The Carousel returns visitors to "Medallion City" on the first floor. This model, all-electric community features the latest innovations in home living, electronics and space exploration.

Displays in Medallion City are enlivened by programmed sound

sequences installed by Wilding-Dramaturgy specialists. These help tell the story (on tape) of the Hotpoint Story Book Kitchen, the Medallion Home, a model classroom at Steinmetz High School, closed circuit tv in a hospital, an automated hot-strip steel mill.

Two little "stand-up" theaters show G-E product films in the Medallion City area; 87 projectors are used to cover the big dome ("largest screen in the world") for the Skydome show with images of stars, lightning and rockets. •

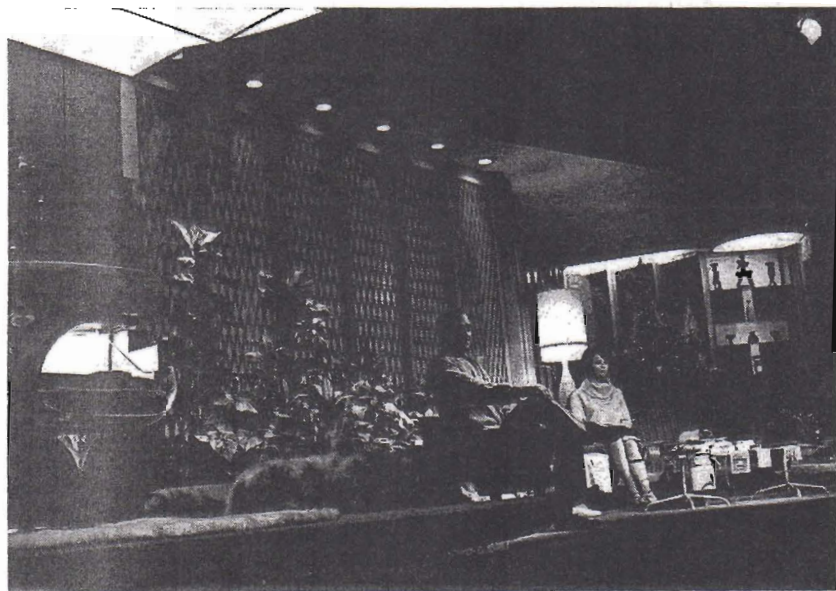


Programmed sound sequences enliven these Medallion City displays. Left: Hotpoint Story Book Kitchen; right: model high school classroom.



Above: Wilding-Dramaturgy taped sounds describe use of closed circuit television at Coolidge Hospital (scene at left) and (right) a three-dimensional diorama shows modern automated hot-strip steel mill.

The present: a beautifully-appointed, all-electric Medallion Home is described by the animated figures as dog "woofs" and cat wags tail.



Largest building at the Fair is the General Motors Pavilion. Entering below this flaring facade, visitors see and hear the world of future.

## RIDE THROUGH FUTURAMA

science finds space for growing populations

**T**RAVELING THREE ABREAST in sleek, space-type chairs, visitors to the giant General Motors Pavilion regularly discard the realities of the present and cross over into the fantastic world of the future.

Highlight of the GM Exhibit, the Futurama Ride permits visitors to see, hear and feel the world as it may be known in the future . . . a lunar outpost, a permanent community in once-lifeless Antarctica, a vacation playground amid the strange beauty of the ocean floor, Metropolis of Tomorrow, U.S.A., where an extensive freeway network speeds traffic to a park-like industrial sector or recreational and cultural areas, while moving sidewalks whisk shoppers from store to store.

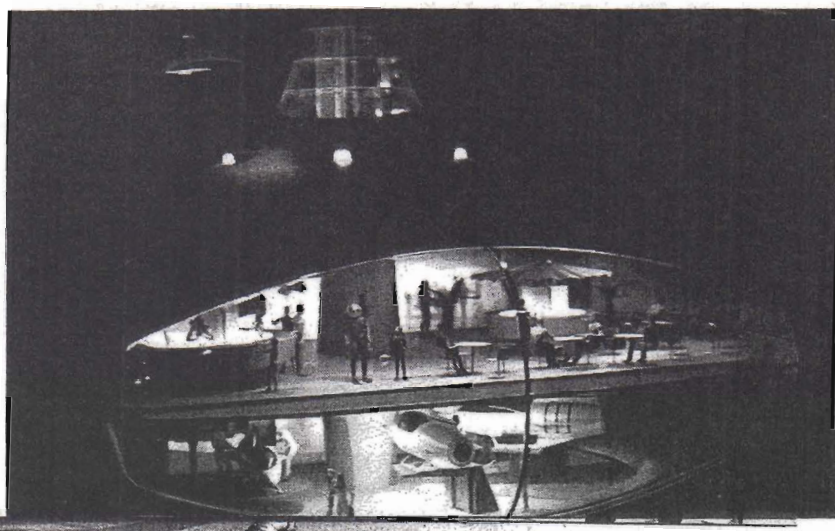
A unique system, designed, manufactured and installed by Reevesound, provides stereophonic sound for the 1,389-passenger ride which consists of 463 three-

chair cars. Each chair is equipped with a special Reevesound two-car listening system. The speech program, originating on every third car from a multi-track sound film reproducer, feeds the succeeding two cars for a total of nine passengers per individual sound unit.

Reevesound created the multi-channel photographic sound track reproducing system for those high-reliability, low-maintenance applications in which a single program has to be repeated continually, and where it is possible to have that program doubled up on a single recording medium and run back and forth, as contrasted with endless loop systems, which run continually in a single direction.

The four-track, 16mm reproducing system is based upon existing motion picture industry dimensional standards, formerly used only on 35mm film. The system (CONCLUDED ON PAGE SIXTY)

Below: mankind's hope of the future is expressed in "Futurama" which takes Fair visitors past models showing how the world and outer space are yet to be conquered. Space station of future is pictured below.







produced by Fred Niles Communications Centers, Inc. The film carries its viewers from the Golden Gate to the Grand Canyon (spectacular shots) — through the Midwest and on to the towers of Manhattan.

The turntable show is fast-paced, there's no long wait as four synchronized projectors show slides of travel history, give way to animated U. S. map. The "audio" then cites advantages of bus travel and guests are told about tours. But the "big show" is that four-minute CinemaScope film. •

## Across the Land in CinemaScope

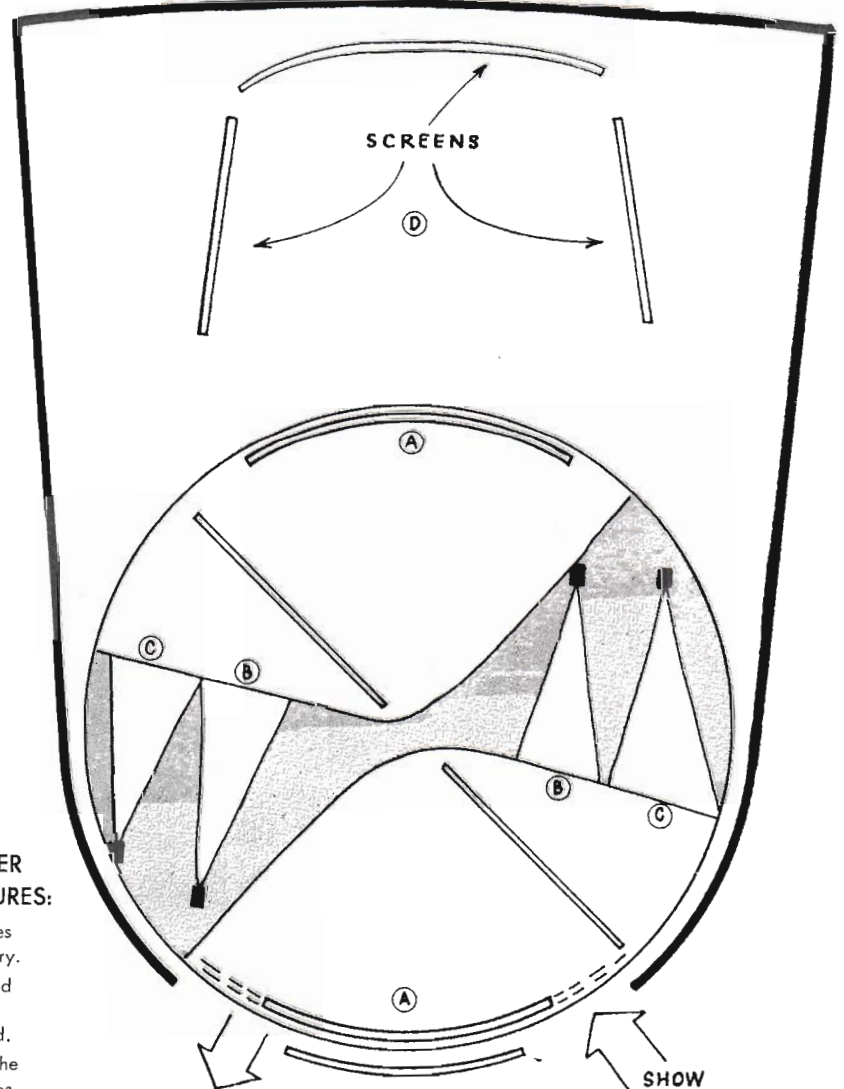
*from the Golden Gate to Manhattan's Towers by Greyhound*

**B**EHIND THE WIDE FACADE of the Greyhound Pavilion, lobby film showings of travel pictures entertain waiting bus riders but the main attraction is in the turntable "Circle Theater" which al-

ternates illuminated transparencies, an animated map and synchronized slide showings on multiple screens with the main feature: a four-minute 35mm CinemaScope film journey from coast-to-coast,



A scene from the all-too-brief, four-minute CinemaScope color picture which carries viewers on Greyhound trip from California to New York and is the feature attraction in the Circle Theater (see sketch below).



### CIRCLE THEATER DESIGN FEATURES:

- (A) Transparencies show travel history.
- (B) & (C) Projected scenes and aerial view are featured.
- (D) Screens for the synchronized slides.



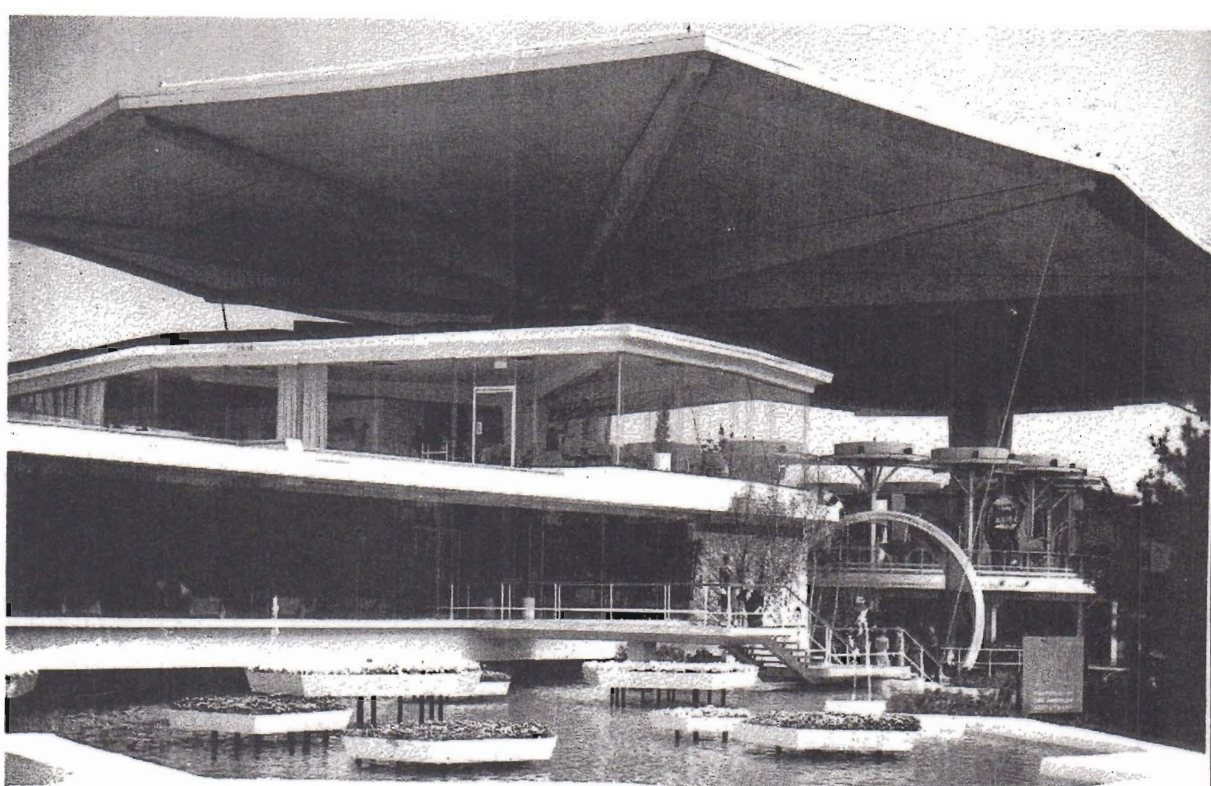
# Festival of GAS

*beneath this pavilion's cool white umbrella,  
two light-hearted film "entertainments"*

SHOWCASE OF THE GAS INDUSTRY at the Fair in New York is the Festival of Gas with exhibits nestling beneath the octagonal white "umbrella" roof that shelters the cool interiors. Pleasantly-landscaped pools reflect the foliage and the area provides a comfortable retreat for the travel-weary.

Pleasant, too, is the screen fare which provides two main attractions in this pavilion. The puppet picture, *Tale of Truthful George*, is followed (in the Theater of Food area) by a *Heinz Magic of Food* picture, a "live" magic show put on film, featuring H. J. Heinz' food products.

A third and very well-conceived use of films is represented in the use of rear-projections at pipe ends (see illustration below) of the huge natural gas pipelines, within a "sculpt" design.



*Under the light, airy white "umbrella" roof of the Gas Pavilion, there's a puppet film, a "food magic" show, also on film, cooking demonstrations and clever use of rear-projection images within the ends of huge natural gas pipelines, set up in a "sculpt" design.*

## Meet Truthful George in a Puppet Fantasy

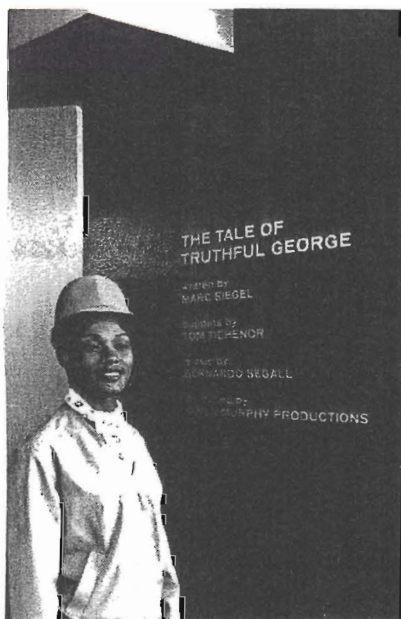
☆ Audiences sit on the carpeted floor of the modest, curve-shaped theater where they watch those amusing Tom Tichenor puppets as they move about the three screens of Owen Murphy's film production, *The Tale of Truthful George*.

In this fantasy, Tom Therm is the puppet creation of the film's magician. Tom symbolizes gas energy as he solves the problems of a loveable puppet family.

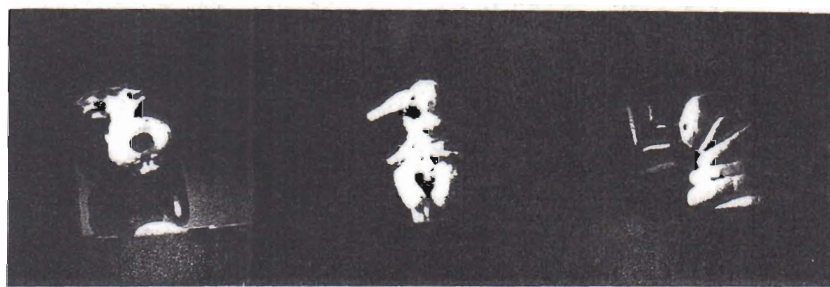
It's the kind of Fair-oriented light entertainment sure to please viewers of all ages. Tichenor's talents were displayed on Broadway in the hit show, "Carnival," and his characters come to life in this Owen Murphy production.

Marc Siegall wrote the script; Bernardo Segall contributed the light-hearted score. Bauer 16mm sound projectors put the images bright and sharp on the three screens of the Gas Industry theater.

It's one of the better shows at the Fair in '64!

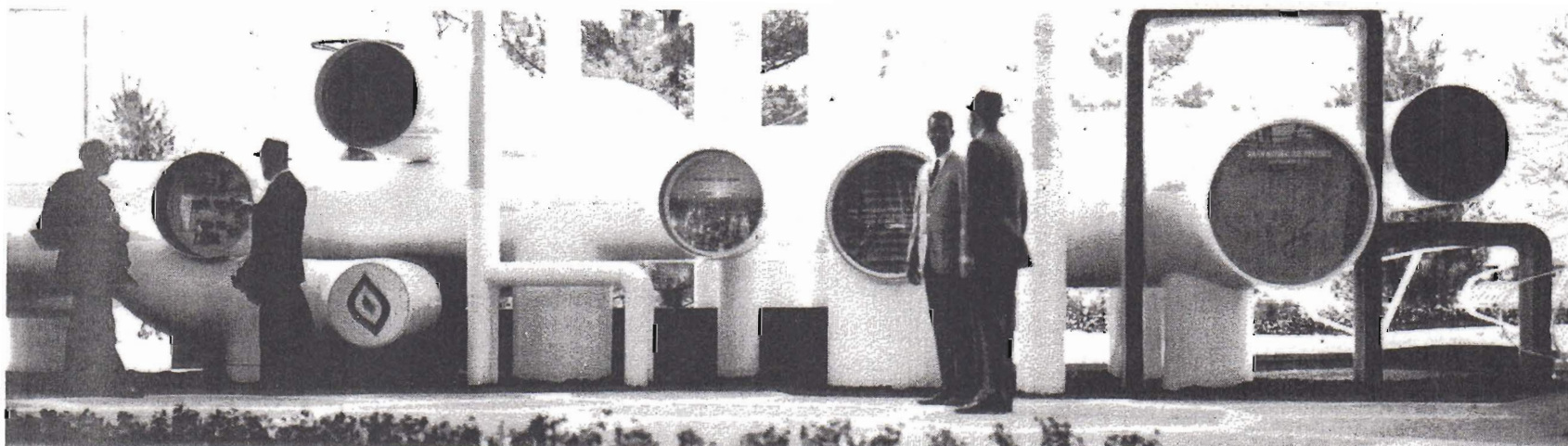


*One of the hostesses at the Gas pavilion greets visitors at the entrance to 150-capacity theater where puppet film is shown.*



*Puppet characters created by Tom Tichenor help tell "The Tale of Truthful George" in curve-shaped theater of the Festival of Gas Pavilion. Audiences sit on the carpeted floor (150 capacity). Below: end titles of this most entertaining Owen Murphy film production.*

*Rear-projected pictures are cleverly designed into pipe ends along the Pipe Labyrinth within the Gas Pavilion. This sculptured display uses actual pipe which carries natural gas cross-country. Relevant projected visuals tie-in the story of the gas industry, its cross-country pipelines and industrial applications.*







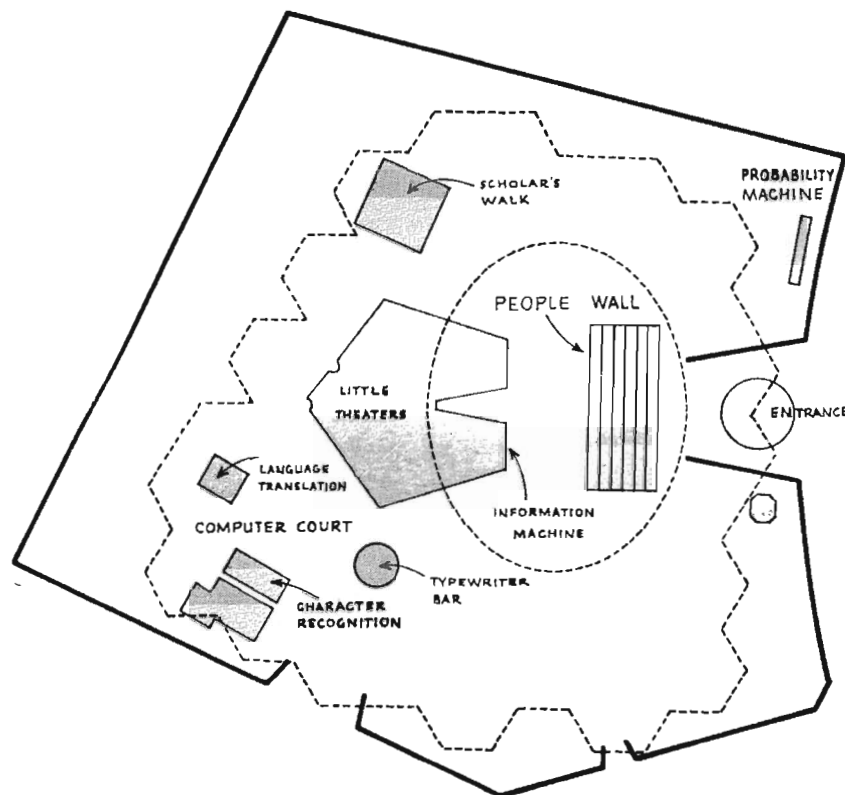
## I.B.M. CREATES AN INFORMATION MACHINE

ride the "people wall" up into a multi-screen explanation of computers

**T**HE MULTIPLE SCREEN presentation inside the big white egg-shaped pavilion which houses the International Business Machines' exhibit at the Fair is called an "Information Machine." Its purpose: to explain how methods used by computer systems are similar to those used in solving human problems in a variety of everyday situations.

One of the Fair's mechanical marvels carries groups of 500 visitors at a time into the Machine's 90-foot high ovoid theater. Seated along 12 steeply-rising tiers of this "People Wall" the audience slowly rises into the darkened loft to await the action.

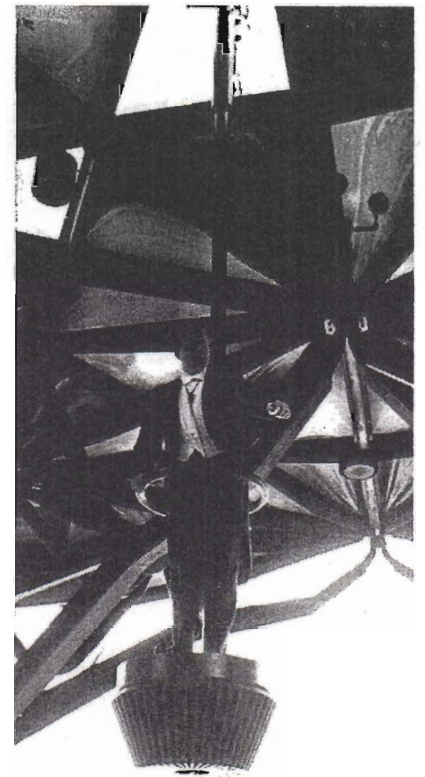
And so begins one of the most complex visual presentations to be seen on the grounds: a 13-minute synchronized presentation which takes place on 15 motion picture and slide screens spread over the front wall of the big dome. The films, designed and produced by Charles Eames, inter-act on a variety of shapes and sizes of screens (see illustration right be-



This sketch shows all the principal features within the IBM pavilion, including the area occupied by the ovoid theater, the "little theaters" and "computer court" with demonstrations of the machines at work.

low on facing page) with much swiveling of heads as viewers try to take in all the action.

The program's intention is to show how data is stored and sorted by a computer; how the conclusions reached by these ma-



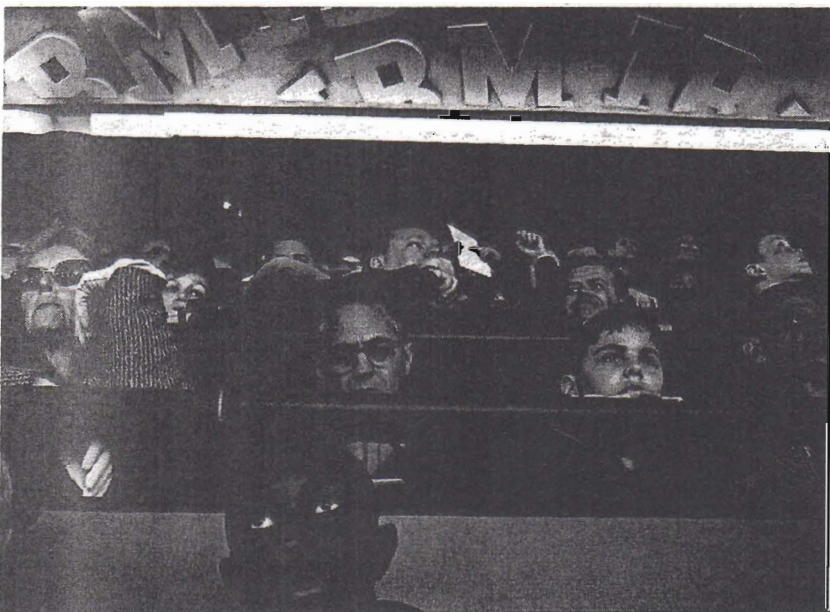
Narrator descends from the ovoid ball on this little elevator to greet the "Machine" audience as they board the "People Wall."

chines are not unlike those reached by the human mind when it compiles everyday data.

For instance, one sequence shows a woman planning a party and drawing a seating plan while people pop on — and off — as she decides whom to invite and who should sit next to whom. The viewer is taken "inside" the lady's mind as the considerations of the party take place on the 15 screens all around him.

Helping to connect the visuals with the workings of a computer

People along the IBM "Wall" awaiting the multi-screen film presentation which is projected (for 11 minutes) in the "Information Machine."



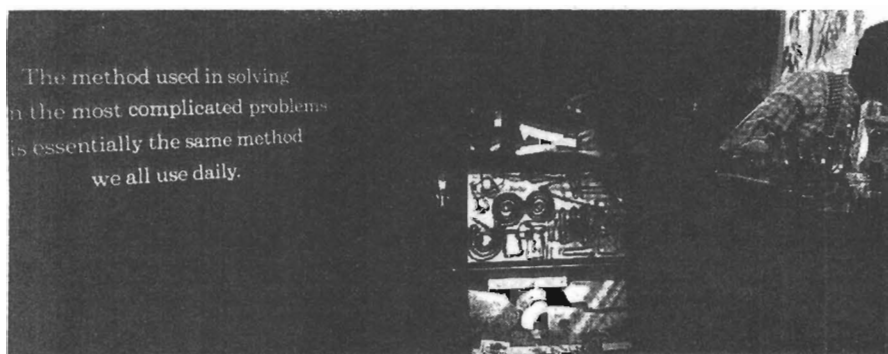
This view along the "People Wall" shows steel framework of theater and a partial glimpse of the frieze of trademark characters on dome.







Bob Seymour's camera has captured this wonderful shot of "People Wall" with its typical cross-section of IBM exhibit visitors awaiting show.



Captions and multiple scenes which are a part of the Information Machine program, shown in greater detail in the large view of the theater below.

## LITTLE THEATERS

★ Three animated theaters within the IBM Pavilion feature puppet like devices that help dispel many mysteries about computers. In one of these Sherlock Holmes unravels "The Singular Case of the Plural Green Moustache" using the same kind of logic as a computer and the logic which *you* use to solve your problems.

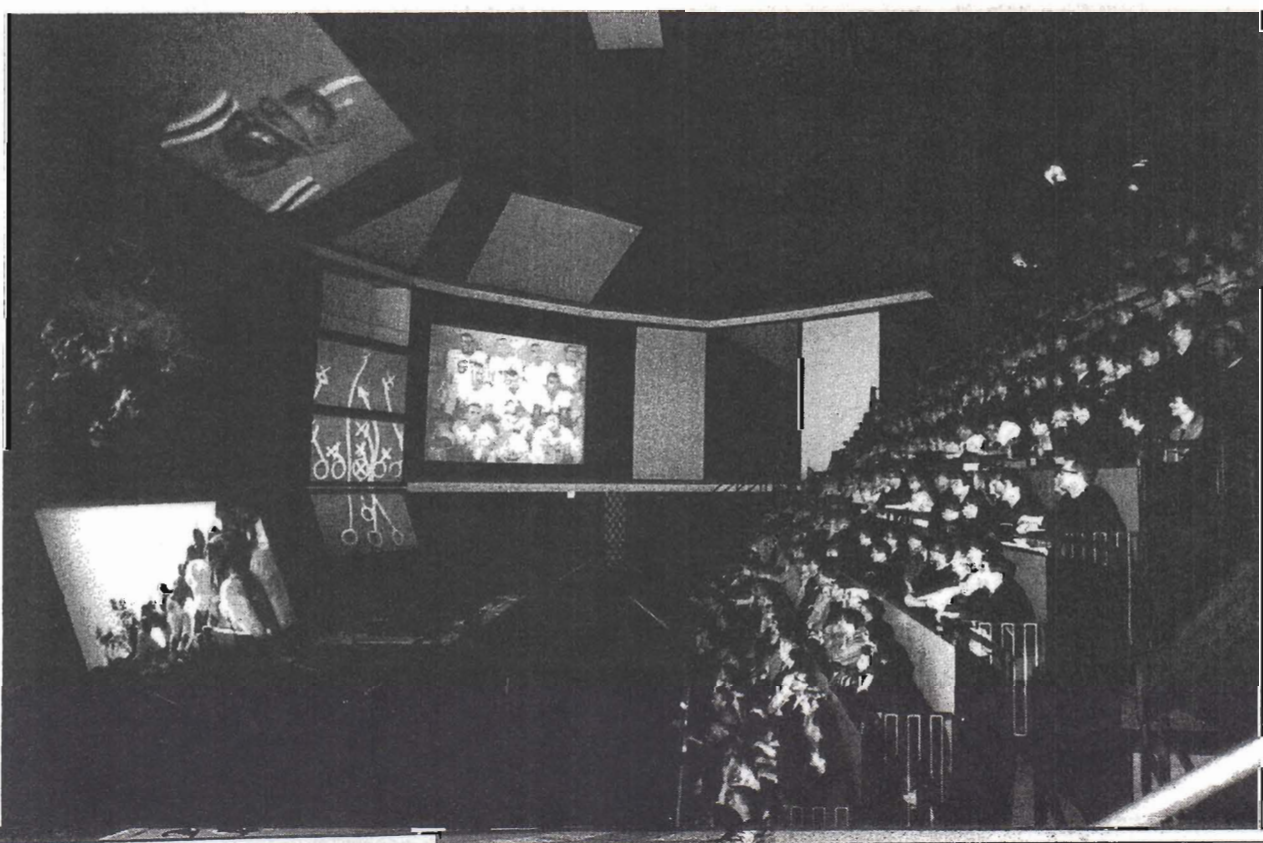
"Cast of Characters" and "Computer Day at Midvale" are the other playlets. •

is a live narrator who is suddenly spotlighted here and there (he's on an elevator, too) on various levels of the screens.

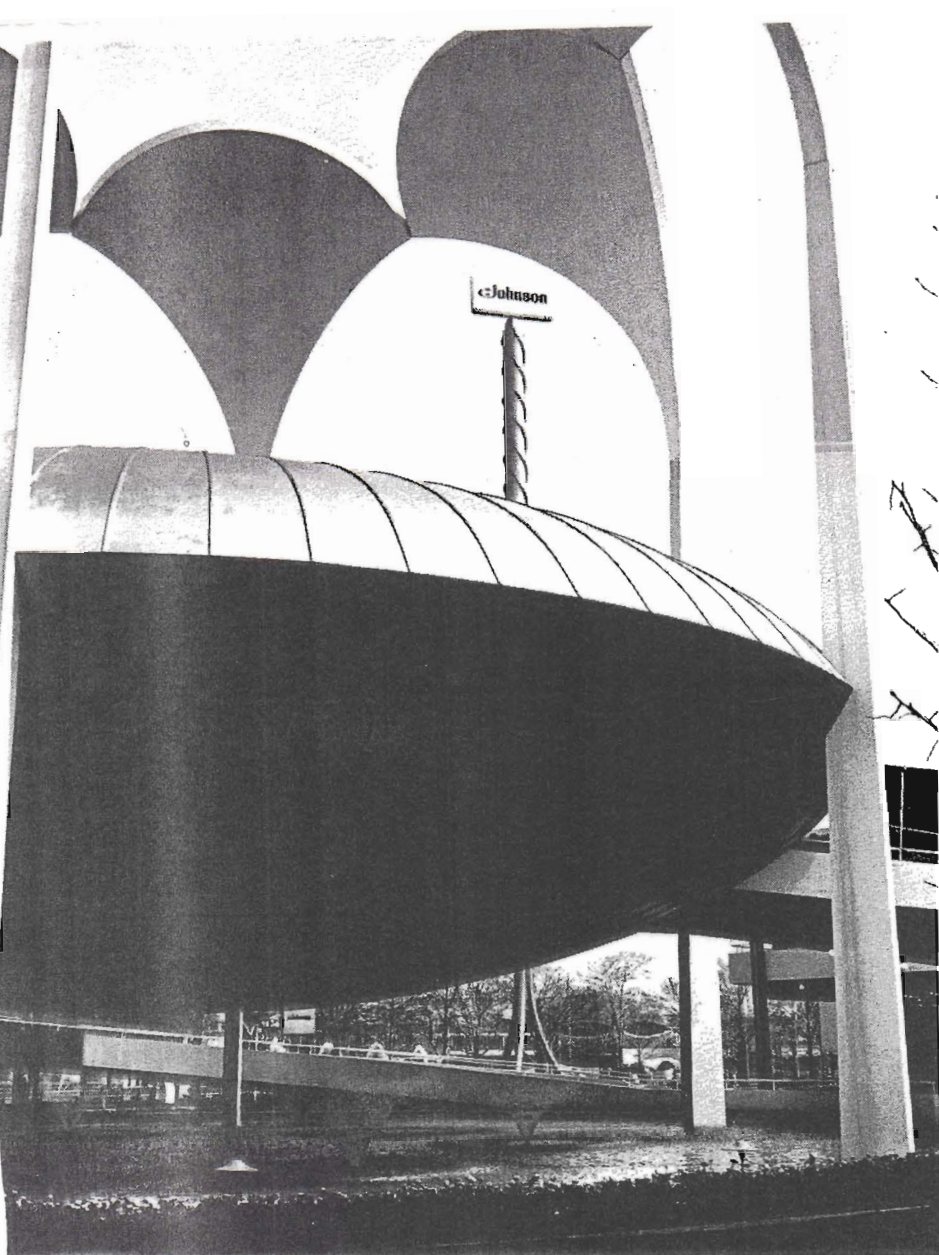
Foreign visitors to the IBM Pavilion may hear translations of the narration on special headsets along the "People Wall" which offer five language versions: French, German, Italian, Spanish and Japanese.

Elsewhere in the pavilion are little "theaters" where mechanical puppets act out playlets on such topics as speed, logic and information handling systems. Computers are at work to demonstrate how Russian technical data may be rapidly converted into English.

Crowd-handling is very good at the IBM Pavilion. •







*Beneath these graceful arches and within the Golden Rondelle Theater of the Johnson Pavilion, audiences are seeing a three-screen hit film.*

## IT'S GREAT "TO BE ALIVE!"

**on three separate screens, the joyous unity of happiness, shared by mankind everywhere**

**W**IDELY-ACCLAIMED by press and public alike as one of the most exciting film presentations at the Fair, the multi-image motion picture, *To Be Alive*, is the undisputed highlight of the Johnson Pavilion.

Produced by Francis Thompson

and Alexander Hammid, veteran documentary film makers, the 17-½-minute picture, depicting the joy and delights of simply being alive, is projected onto three 18-foot wide Hurley matte white screens through use of the Tri-Arc 335 projection system design-

*Fair visitors in this shaded waiting line will soon be rewarded when they enter the Golden Rondelle Theater for showing of "To Be Alive!"*



ed, engineered and operated by Reevesound.

Working in close collaboration with the producers, designers Lippincott & Margulies, and the staff of S. C. Johnson, Reevesound created the projection and control systems and advised on sight lines and acoustics for the 500-seat Golden Rondelle Theatre, main feature of the Johnson Pavilion.

Reevesound's special technical facilities include three Century 35mm motion picture projectors equipped with sync interlock drive and 78 amp Xetron light sources. Designed to run in interlock position as the picture does, the company's unique three-channel sound system reproduces three photographic sound tracks, one carried on each film print. Sound system includes Fairchild power amplifiers and speakers located between and above the screens.

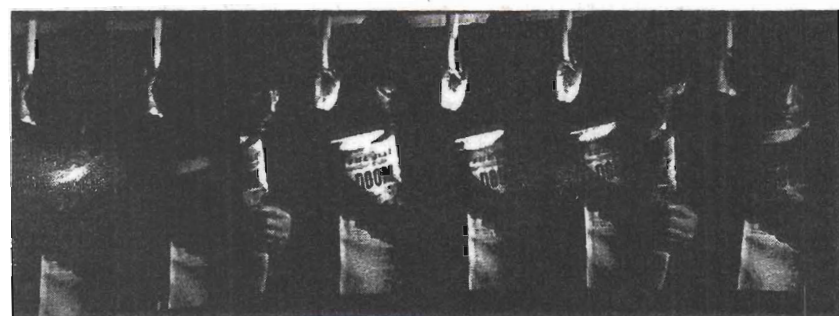
*To Be Alive!* has been warmly received in national magazine stories on the Fair, with deserved accolades in the *NEW YORKER*, *TIME* and other periodicals.

Beyond the evident talents of its



*Johnson's exhibit is pleasing large number of children among Fair visitors with gadgets like this joyful "Nonsense Machine."*

☆ *To Be Alive!* is said to have taken its creators nearly 18 months to produce on location throughout the world. Its message, reminding all who see it of the sheer joy of living, was worth every second of their creative effort.



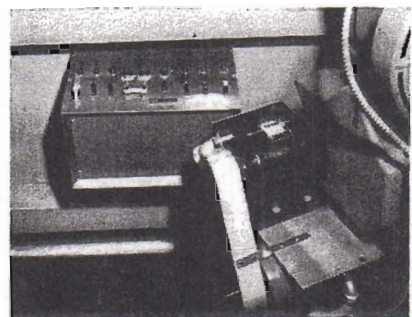
*Multiple opening scenes from "To Be Alive!" use speeded-up action to stress the pressures of today's harried existence; after transition, the scene below of a happy little Chinese boy who finds a turtle . . .*



producers, special mention is due the narration written by Edward Field, winner of the 1962 Lamont Award for his poetry and to composer Gene Forrell, whose musical score upholds his reputation for original work on the ballet, opera and films.

Superb color sequences were processed by Moviellab, Inc. A total absence of *any* commercials (not even the customary title credits) adds to the sponsor's laurels. The film will be remembered.

*Below: master control panel at Johnson's Wax Pavilion operates lights, sound and projectors.*



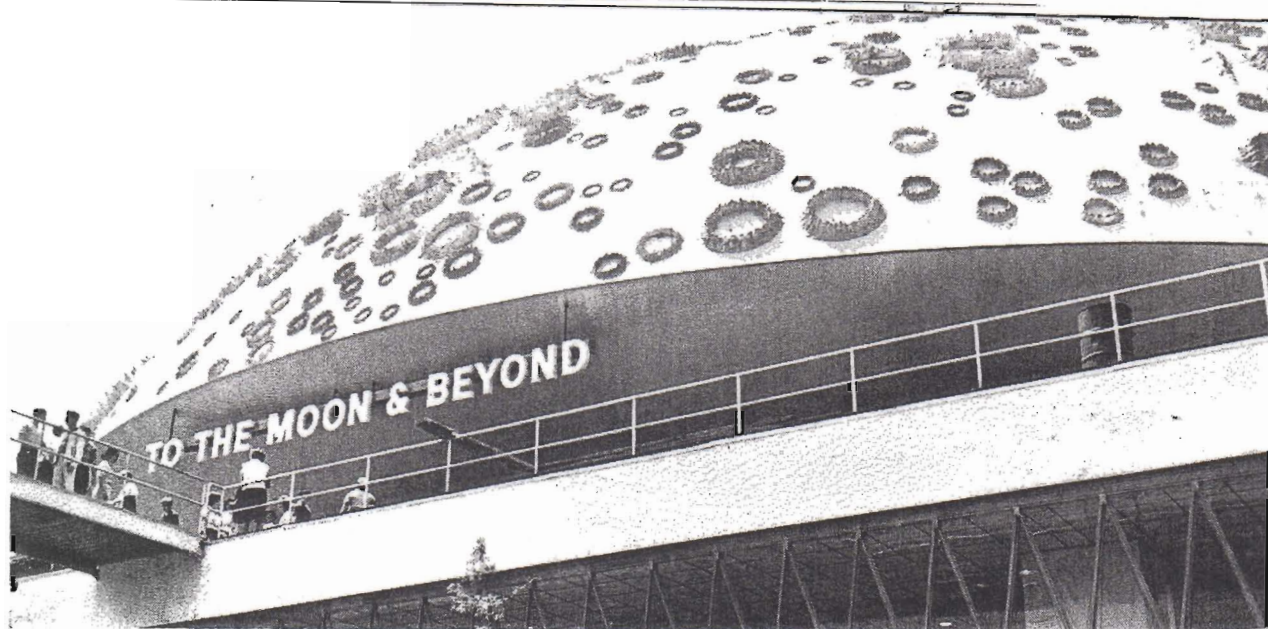


# to the MOON in Cinerama

exploration of outer space  
on an 80-foot Spacearium dome

**R**OCKETING VIEWERS into outer space, past the moon and into the far galaxies, the Cinerama film *To the Moon and Beyond* projects exploration of space against the 80-foot dome of a Spacearium on top of the Transportation and Travel Pavilion at the Fair.

Presently sponsored by the KLM Royal Dutch Airlines, the film is shown to paid admissions. It was produced by Graphic Films Corporation for Cinerama, Inc.



KLM-Royal Dutch Airlines is sponsor of this Cinerama journey into outer space showing in dome theater.

and Rod Serling narrates the film.

The audience is taken within the action which generally occurs in darkness to free the viewer from conventional ideas of size and time. Speeding up the events known to astronomers, the picture shows (through animation) how clouds of gas whirl into great galaxies, expanding outward from one another, with old generations of stars exploding to distribute the gaseous components of subsequent stellar generations, visible in our time.

Returning to earth, the film takes us to a great rocky canyon to illustrate the shape of matter on the stars . . . to the middle

Left: a moving stairway takes viewers up to the dome theater for Cinerama "Moon" journey.



Scene from Graphic Films' production which explores the vast events out beyond outer space.

the insects crawling in and out above. But the intricate workings of molecular and atomic space are the film's true goal. From a broad view of the cosmos, attention shifts to the familiar building processes that we call the chemistry of the planets: the relation of liquid water to the diverse manifestations of life. The incredible complexity of living forms is revealed.

As a stirring conclusion, the pulsing image of a single living cell is invaded by the camera, accompanied by loud "booms" of sound on the track.

*To the Moon* was lensed by Graphic Films in double-frame 65mm. Final magnification to the 600X screen dimension required utmost care in the production of convincing special effects material. In this, it has succeeded. •

of a great forest and to the bottom of the sea. In one sequence the audience finds itself at the bottom of an anthole, watching

## A LOOK INTO "PATTERNS IN SPORTS"

**Sky-divers, boxers and halfbacks in action  
on a circular screen at the bottom of a well**

**A** CANOPIED KIOSK in the General Cigar Hall of Magic at the Fair houses a unique sports picture, which was shot as it is viewed, looking into action from above as from a helicopter.

Visitors gaze down the sloping pit walls (bell-shaped) as an overhead 16mm sound projector puts exciting action sequences onto the six-foot circular screen. A most exciting sequence shows the free-fall, sky-diving parachutists as they hurtle towards the earth.

Within the brief three-minutes, there's also indoor action of bil-

liards, boxing and golf and a "worm's eye" view as the camera looks upward at a boxer skipping rope.

*Patterns in Sport* is co-sponsored by SPORTS ILLUSTRATED. It was created from an idea developed by Gordon Auchincloss and George Marck. Filming was by Gerald Productions, Inc., designed by George Canata and under the direction of Jerry Auerbach. Technical equipment was designed and built by Reevesound, under the supervision of William Szabo. Another good Fair idea! •

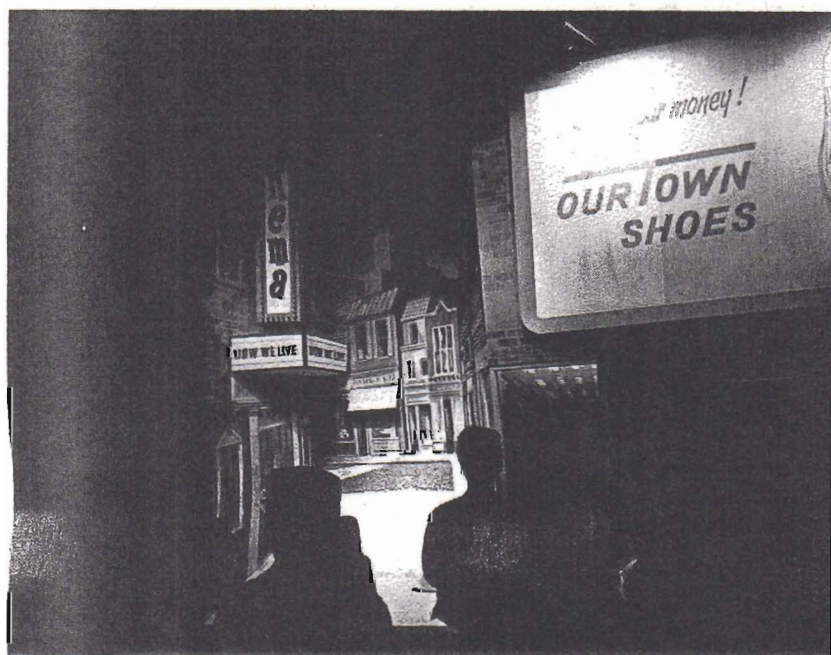
At right: you're watching the "big game" from a hovering helicopter as you look down this picture well to see the "round" movie produced for the General Cigar exhibit area by editors of Sports Illustrated.







The Hall of Free Enterprise, located in the International Area at the Fair, has a 100-seat theater in which a 15-minute sight/sound show on economics is presented. The scene below shows one of the dioramas in this combined slide and diorama presentation. Action takes place all around the theater; audience is seated on swivel chairs to follow it.



At right: the Dynamic Maturity exhibit at the Fair (sponsored by retired persons) brings its guests one of the earliest kinds of visual devices: the Camera Obscura. Tower in the picture below shows a mirror and lens arrangement; images are projected down onto a circular screen at the bottom of a "well." Viewers watch scenes of the Fair outside at showings which take place every five minutes in this hall.

### Vignettes Show the Services of American Express

The American Express pavilion below is opposite the main gate of the Fair. Within its main hall, seven slide shows are being shown on a continuous basis. They offer "vignettes" (each of 11½-minutes) on Express services such as Travelers' Checks, the Credit Card, etc. 370 slides are presented on five Kodak Master projectors, modified

## ECONOMICS FOR EVERYMAN

*dioramas and slides combine to help tell the story of free enterprise in this fair theater*

THE HALL OF FREE ENTERPRISE, located in the International Area, is sponsored by the American Economic Foundation with the hope of spreading the validity of a free market economy and private competitive enterprise.

Exhibits in the pavilion are designed to show the superiority of the economic principles on which a democratic system of free enterprise rests.

A principle vehicle used is a 15-minute sight/sound show entitled *Mr. Both Comes to Town*, which is staged with dioramas, slides, and other illuminated settings completely around the perimeter walls of a 100-seat theatre

in which all the chairs swivel so that the action may be followed in any direction.

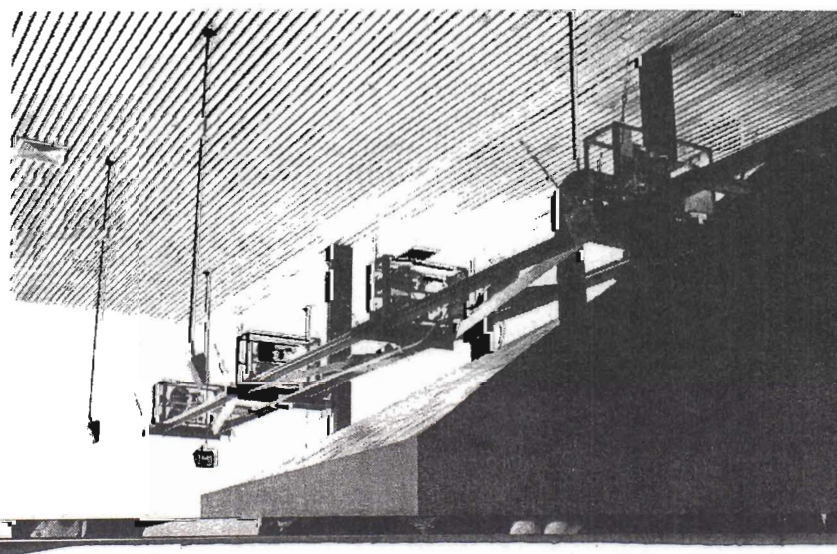
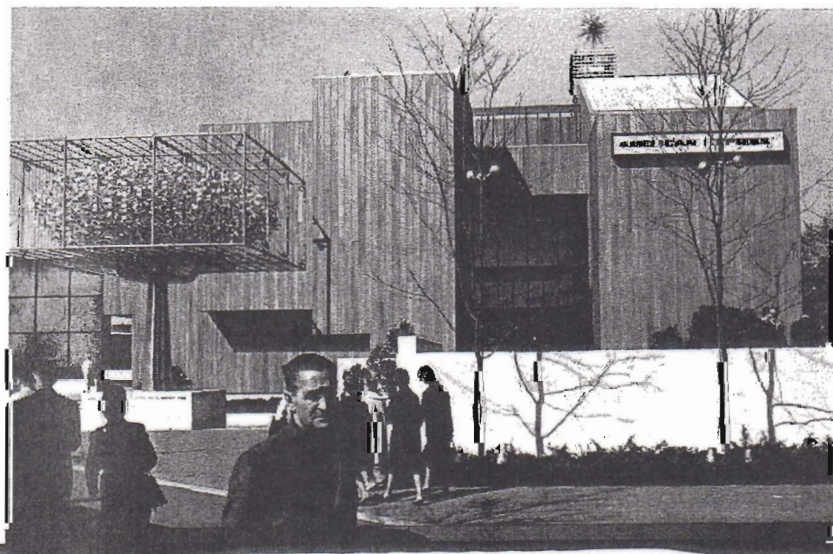
The "plot" is that Mr. Everyman is "Mr. Both" — he wants higher wages for his work, but wants to buy goods at lower prices. The solution proposed is that a free, non-regulated economy is the best answer to Mr. Both's dilemma.

Other exhibits offered in the Hall include: *Money in Motion*, an animated display showing how America's corporate economy works and *The Tree of Economic Life*, which demonstrates the interrelationship of natural resources, jobs, tools and capital. •

### There's Even a "Camera Obscura" at the Fair



by the show's producer and designer, Roger Wade Productions. These are the same units which showed the memorable Kodak Pavilion slide program at the 1939-40 New York Fair. Each projector has two lenses; screen images dissolve from one to the other. Programming is on a master tape which controls all five machines, operating individually or as a unit. Sound is carried by directional speakers in the ceiling to avoid interference. Screen surface measures 37½ x 7½-feet.





ONE OF THE MOST novel and successful films being shown at the Fair is *A-Round New York*, a 14-minute Theaterama 360-degree production being presented in the New York State Pavilion.

Produced by Coleman Productions, Inc., the film treats viewers to a whirlwind tour of the state, highlighting significant scenic, industrial, cultural and entertainment centers. The feeling of presence experienced in the 360-degree film is extraordinary.

#### A New 360-Degree Approach

This process differs from earlier attempts at reproducing a total 360-degree field of view in several substantial areas. Most significant, it utilizes 35mm film, rather than the previous 16mm, which permits a projected image of sufficient dimensions to do justice to total all-encircling panorama.

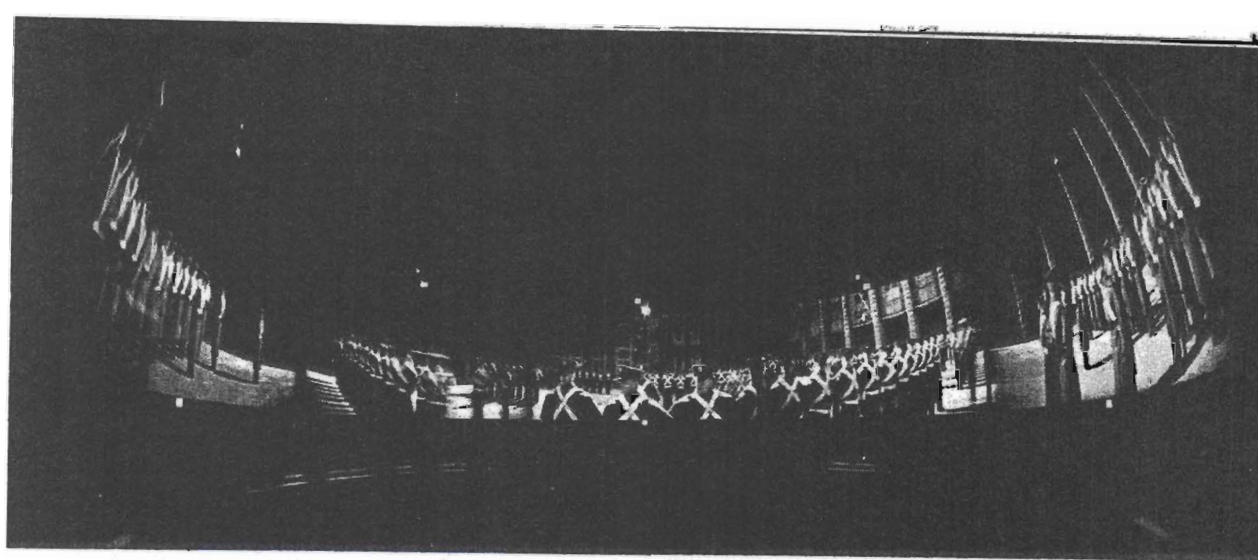
Additionally, because the Mitchell Mark II cameras are equipped with identically-matched anamorphic lenses, only six cameras are required to complete the 360 degree horizontal coverage, rather than the 10 or 11 cameras required by other processes. This advantage is immediately obvious. The biggest obstacle to be overcome in multiple projection is edge-matching. By using only six units, the number of edges to be matched is reduced by nearly half.

#### Special System Was Built

In order to more adequately fulfill his conception of Theaterama, Harry L. Coleman, president of Coleman Productions, Inc., commissioned the Cinerama Camera Corporation, of Hollywood, to design and construct a multiple camera system to certain of his own specifications.

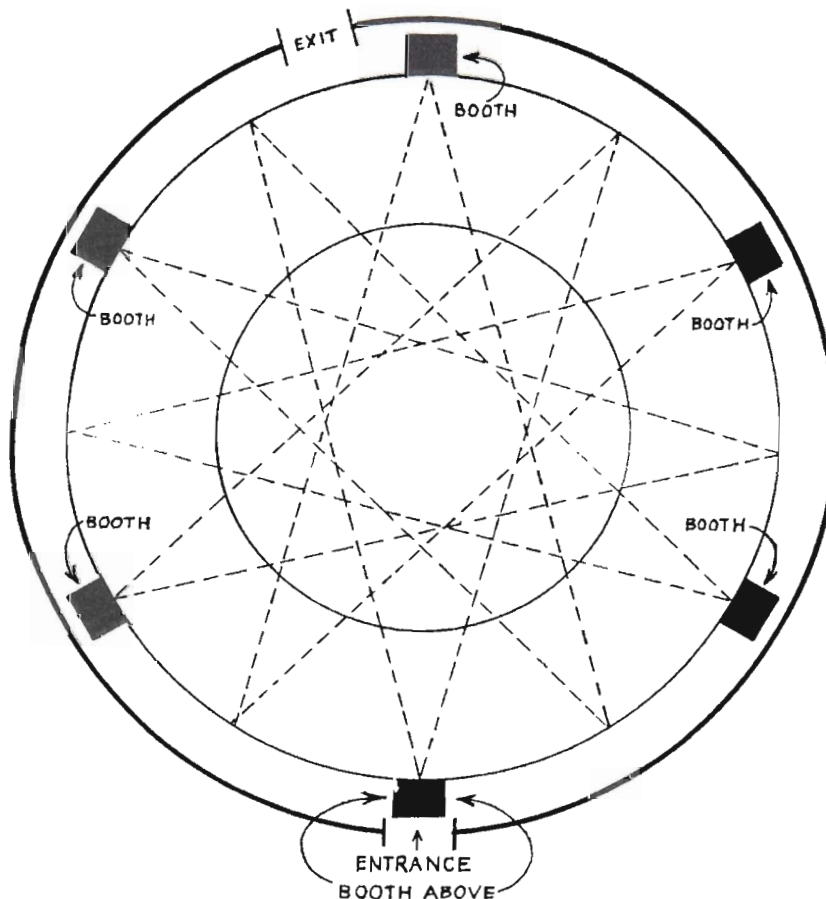
The result of their combined efforts is the 60-pound camera set-up approximating the shape of a cylinder — 48 inches high by 52 inches in diameter, including 1000-foot magazines.

The six Mark II's are mounted vertically on a pedestal, shooting up into a turret of six front-sur-



## A 360-DEGREE TOUR "A-ROUND NEW YORK"

*encircling vistas of the Empire State put viewers right "in" the action*



*Sketch of New York State "Theaterama" building shows how the six 35mm Norelco Pulse-Lite projectors cover equal number of 20 x 42-foot screens, encircling viewers who stand in center on marble floor.*

face mirrors, arranged to present a 45 degree surface to each lens. Without this feature, the cameras would necessarily be mounted hori-

zontally, shooting outward like spokes of a wheel.

In the latter arrangement, the edges of the angle of view origi-

nating at the nodal point of each individual lens could not possibly correspond. Thus, at close range, a subject passing from the field of view of one camera to that of another would be lost from sight during that interval.

#### Avoiding the Loss of Field

By establishing an effective nodal point for all cameras (hypothetically dead center of the system) and reflecting the field accepted at this common point into each individual lens, there is no loss of field at any distance from the lens, from minimum to infinity. This is the value and necessity of the optically-correct, perfectly-aligned turret of mirrors.

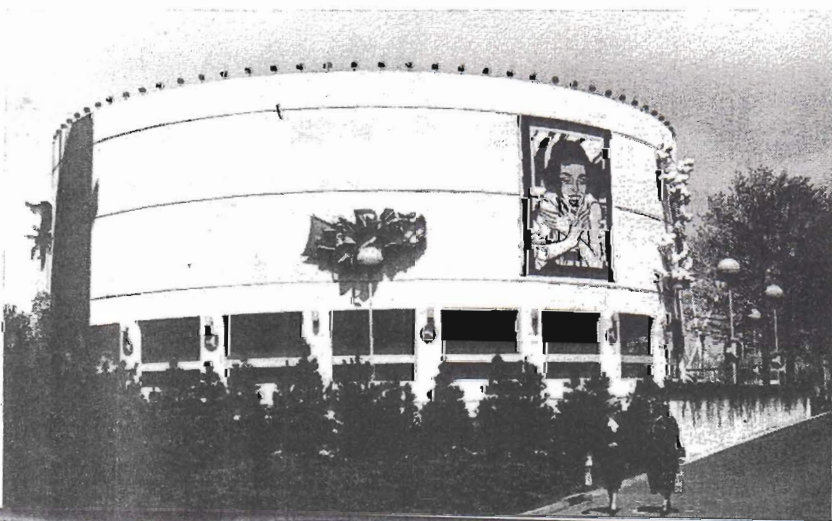
Reducing the number of cameras, thereby providing more uninterrupted screen in projecting 360-degrees, created optical problems which challenged the best engineering minds in the business. Since each of the six cameras must accept a full 60-degrees of horizontal coverage, a lens with a focal length of not more than 40mm is required. A 40mm lens could not accept the necessary anamorphic addition without vignetting.

#### Lenses Were Ground Overseas

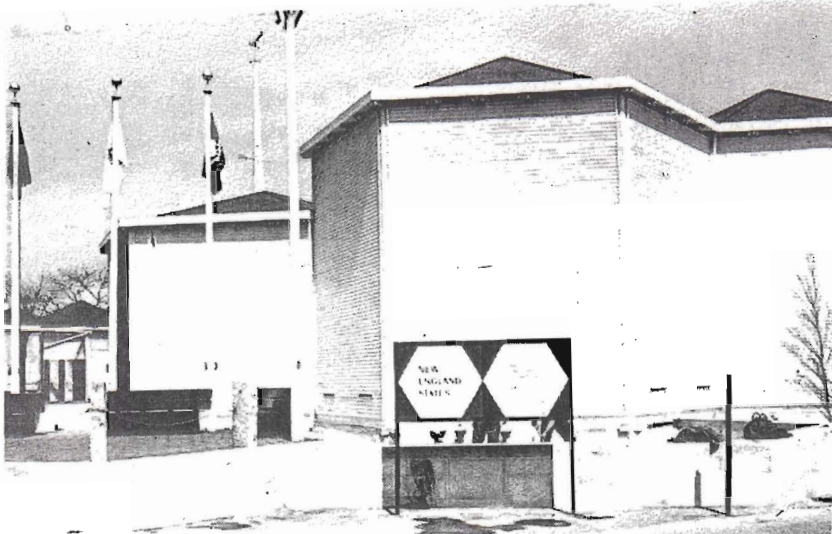
The problem was deported, with recommendations to an overseas optical manufacturer. The solution received was a set of six (CONCLUDED ON PAGE 76)

*Circular Theaterama building in which Coleman-produced 360-degree film is shown. Examples of "pop" art are used around outside walls.*

*View of the New York State area with Theaterama ticket booth in foreground. A modest 25¢ admission is charged for the 12-minute picture.*

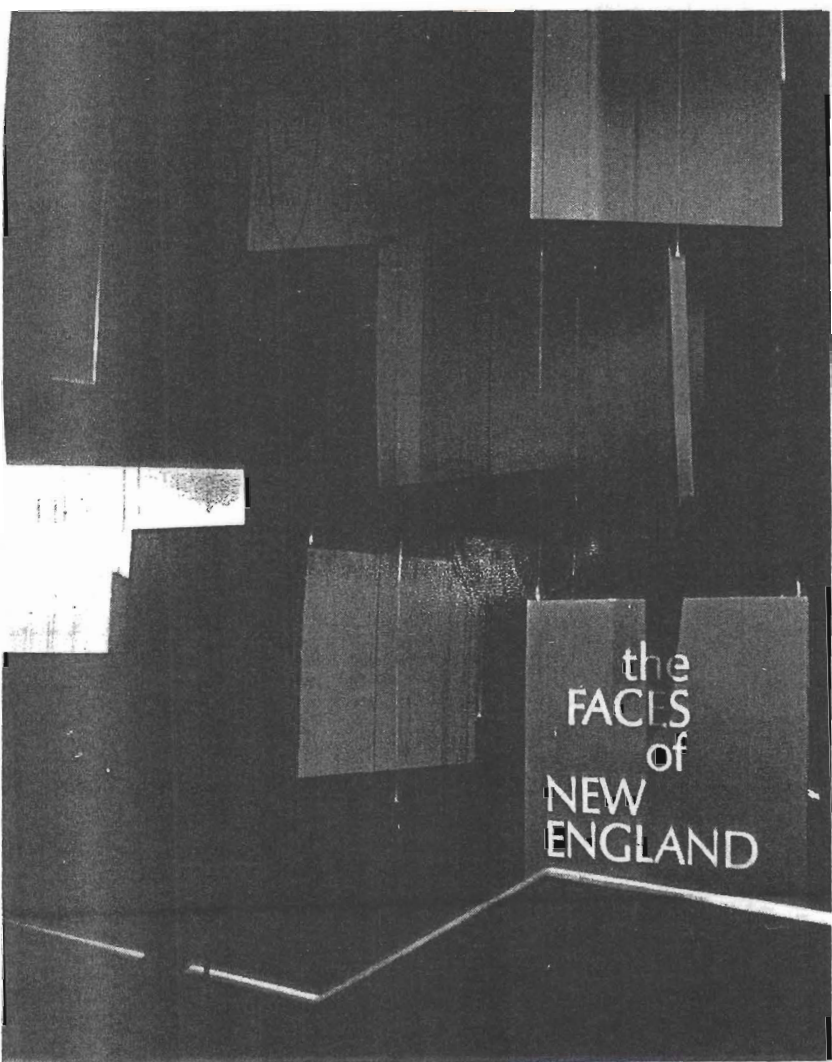






A traditional architectural motif exemplifies the New England States exhibit area, which features multi-screen slide scenes of the area.

### Multi-Screen Gallery of New England Scenes

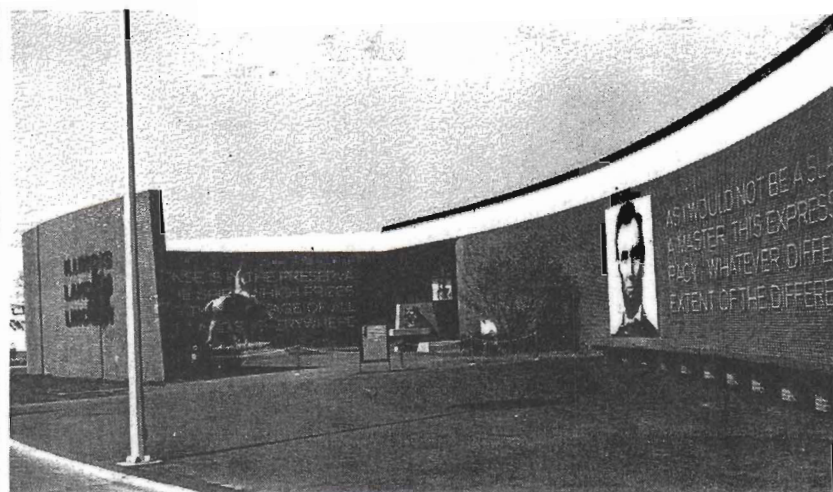


Above: continuously changing scenes of New England are projected on these free-hanging screens, simultaneously and without cross-interference, with both front and rear projection from the several dozen automated sound and slide projectors, most of them Spindler & Sauppe Selectroslides. Smith's (of Boston) developed the unique showing of the people, places, industry and historical sites which comprise the many "Faces of New England." Polacoat created the specially-coated rear-projection screens; repeater-tape sound units were by Cousino.



## NEW ENGLAND TO HAWAII:

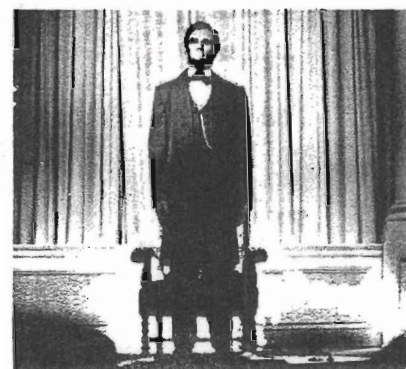
slides and motion pictures help woo industry...



The Illinois Pavilion has Walt Disney's Audio-Animatronic figure of Abe Lincoln, who speaks to appreciative audiences every 12 minutes.

### Illinois Has Lincoln

ABRAHAM LINCOLN stands, speaks and gestures with amazing realism in the Disney-created Audio-Animatronic feature of Illinois' Fair pavilion. The simplicity of the stage setting and the expressive excerpts from six of Lincoln's speeches are drawing appreciative audiences to the 12-minute performances. State exhibit also has an adjacent theater for promotional film showings.



Lincoln stands up and delivers excerpts from six famed speeches.

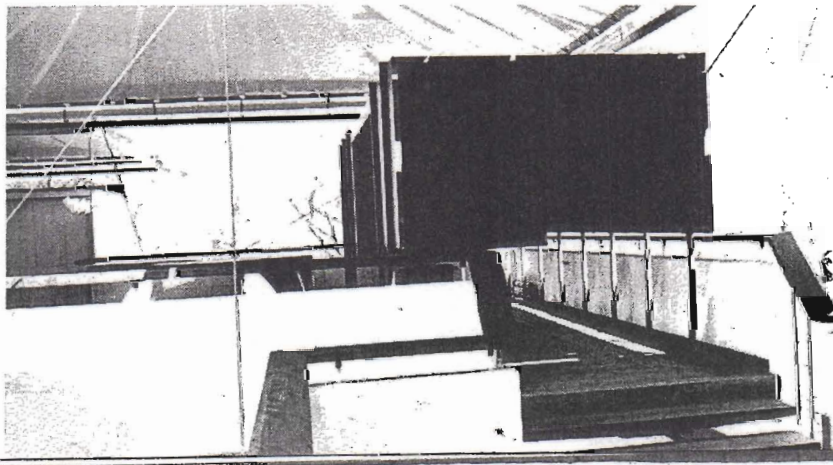
### West Virginia's Film

Right: West Virginia Pavilion shows a radio telescope film.



Left: the big radio telescope at Greenbank, W. Va., is shown on screen above area model in this state's 75-capacity film theater.

New Jersey has this theater area; the darkened rectangle houses a rear-screen motion picture projector, showing films about the state.





# SEVEN STATES AT THE FAIR

*promote tourism, re-create historical tradition*

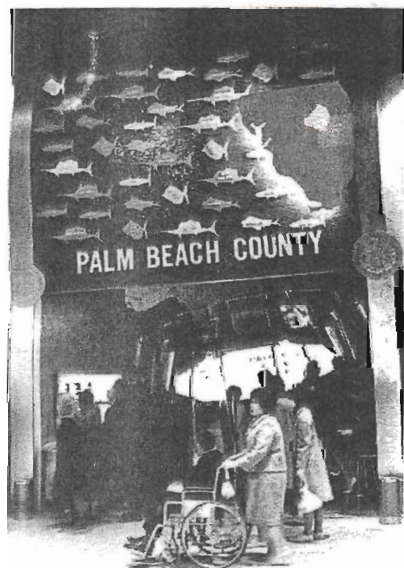


*Florida's attractions are exhibited within this big circular pavilion.*

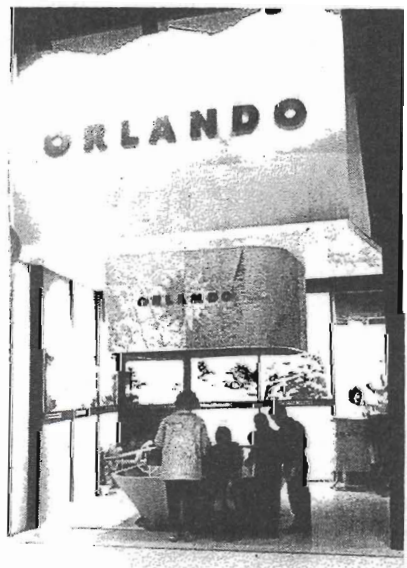
## Visualizing the Good Life in Sunny Florida

RESORT PROMOTION is understandably a primary motif within the large circular Florida Pavilion. Various tourist areas, such as Miami, Orlando and Palm Beach, are using sight/sound

media to show visitors the delights awaiting them. Transparencies are shown on "revolving ride" in the Palm Beach booth; the Miami show uses slide boxes turning on a center core.



*Plastic stalls take visitors on a sight/sound "ride" past activities of Palm Beach County environs.*



*Fair visitors are watching a slide program about Orlando projected within this well.*

## a Pineapple Show and Travel Films on Hawaii

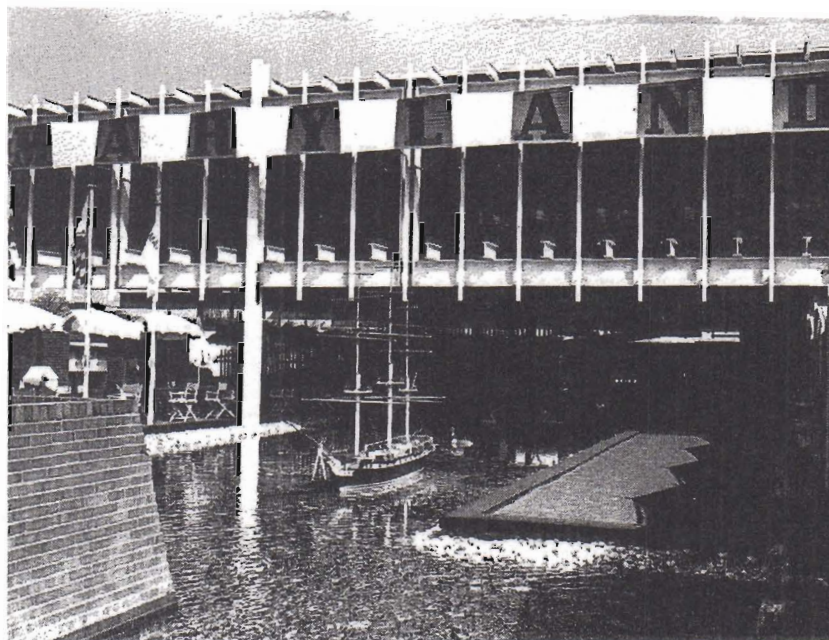
Below: travel pictures about Hawaii are shown within . . .



IT COSTS a quarter to see and hear a two-minute sound/slide show, *The Story of Pineapple in Hawaii*, which is one of the two audio-visual attractions in the Hawaiian Pavilion at the Fair.

But you can enjoy some lush color and sound travel films of the area free of charge in a nearby "stand-up" theater.

Even if you're not "pineapple minded" that show has a cute trick in its use of listening cups along the railing (see illustration right, below for details).

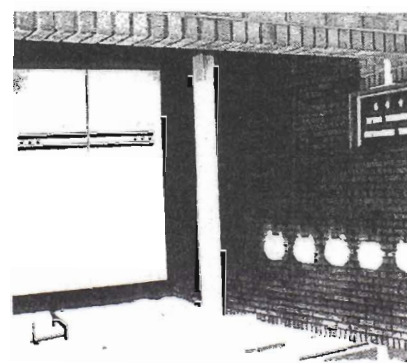


*Maryland features a maritime motif in the design of its pavilion; an 11-minute film tells how the Star Spangled Banner was written.*

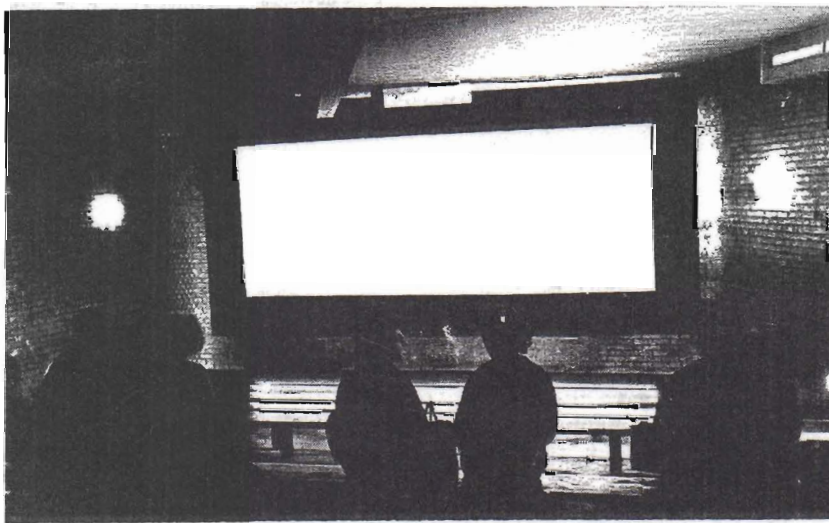
## "O'er the Ramparts" is Maryland's Feature

THE STORY of the writing of our National Anthem is told in the film *O'er the Ramparts*, an 11-minute color picture created by Milner-Fenwick Productions for the principal attraction in Maryland's Pavilion theater.

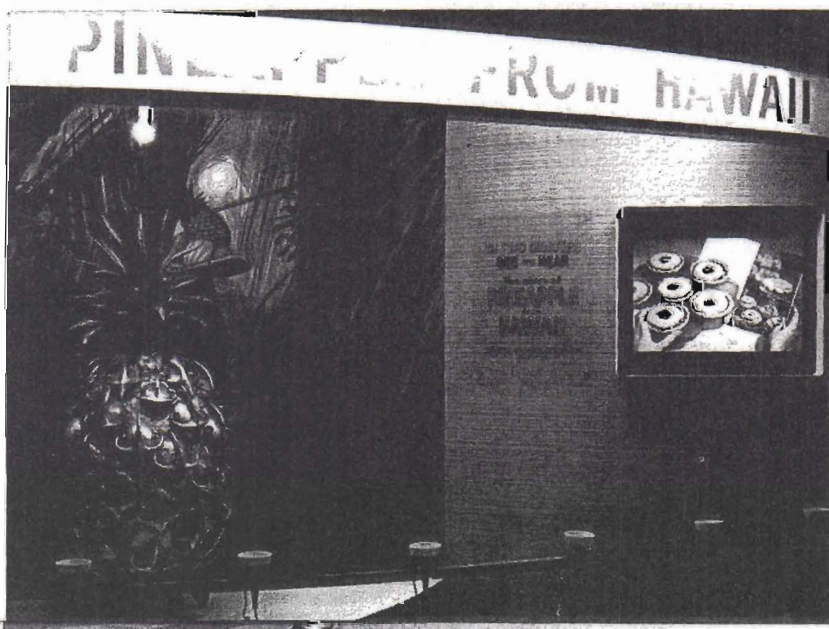
U. S. Rubber sponsored the film; it is narrated by Arthur Godfrey and shown on a Bauer 16mm sound projector.



*Above (right) and below: entrance and interior of Maryland's theater.*



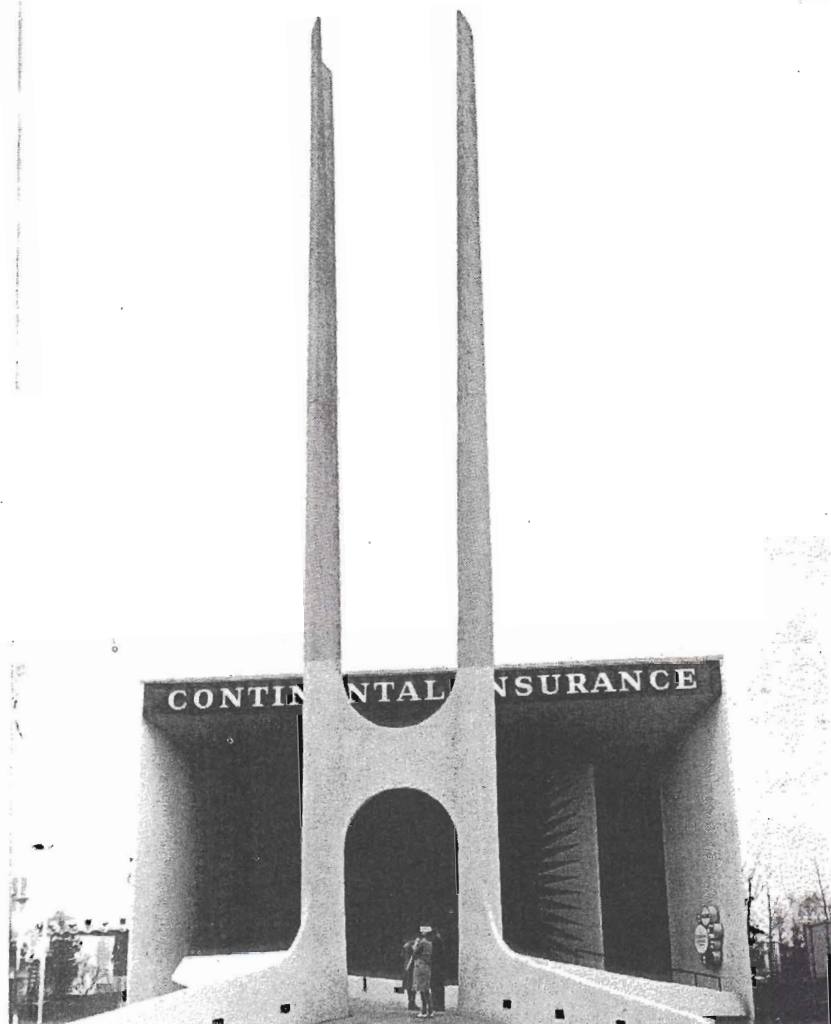
*Below: projected images tell the story of pineapple from Hawaii as sound emerges through the little listening "cups" along the railing.*



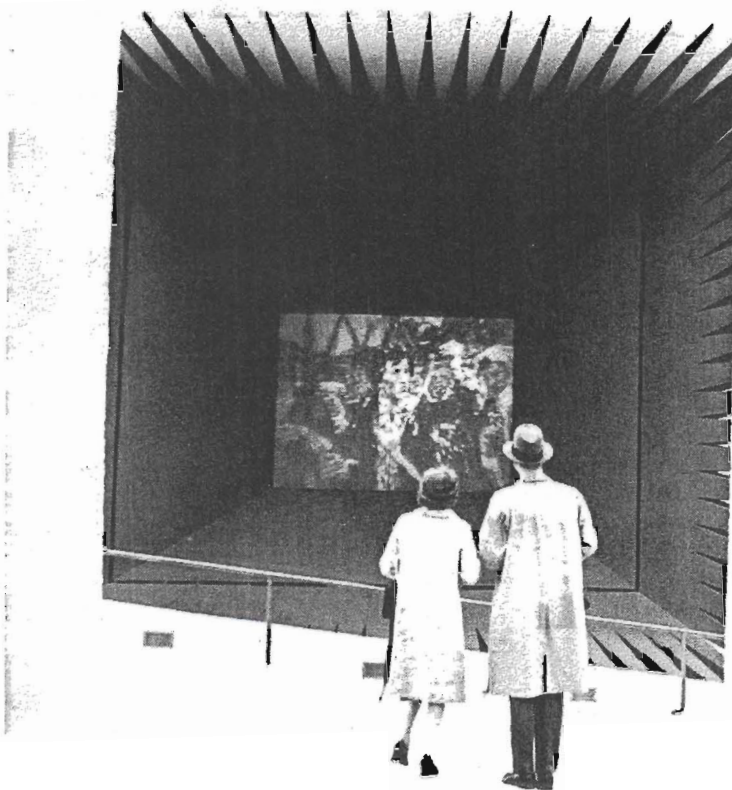


## CONTINENTAL IN CINEMA-76

*heroes of the American Revolution are seen  
in this unique outdoor slide projection show*



Above: heroes of the American Revolution are the slide show feature within this striking Continental Insurance Pavilion at the Fair. The photos (by our own Bob Seymour) are excellent visualizations of this "Cinema 76" presentation and its setting. Right: closeup of a scene in the show; inside building are dioramas of early American history.



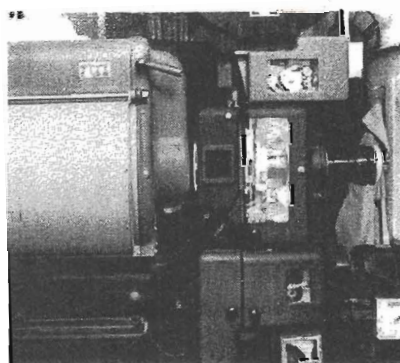
### United Shows "From Here to There"

VISITORS to the United Air Lines Exhibit in the Travel and Transportation Pavilion are ushered into a plush, compact little red and blue theater where the Saul Bass' film production, *From Here to There*, is shown by a special Reevesound motion picture projection system.

The system includes a 35mm Simplex XL projector equipped with a Strong Arc X-16 light source and single-track Ampex

magnetic sound reproducer, a 50 watt Fairchild power amplifier and a 27 amp Strong Arc Rectifier.

The 35mm film uses the big Cinemascope image to relate the story of a United jet enroute from Los Angeles, soaring cross-country and arriving at an East Coast destination. The film begins in narrow-image format which gradually enlarges to the full wide-image dimension as the plane



takes off from the Pacific Coast.

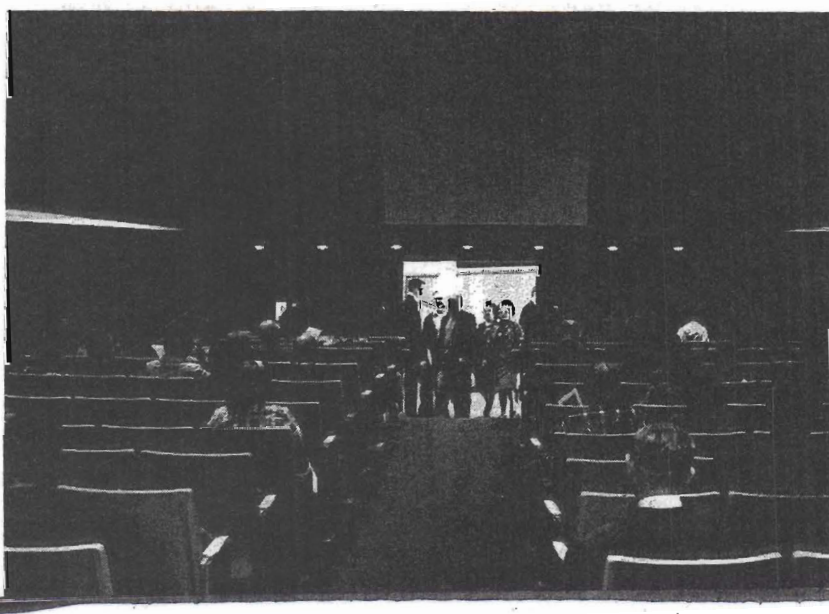
This transition from narrow to wide-image is an effect printed onto the film. It is accomplished by control tones, carried by the single

sound track, which trigger curtains at either side of the screen, causing them to move out as the plane ascends. Accurate timing permits the expanding screen image to precede by one second the opening of the traveling curtain, thus providing a continuous clean picture edge.

As the story nears its conclusion and the filmed image of the United plane begins its descent, the curtains begin to close, returning the screen again to narrow-image format. As this action takes place, the printed image follows the curtain by approximately one second to maintain the clean picture edge.

All popular Fair exhibits have their waiting lines. This one is seen at the entrance to United Air Line's 188-seat Jetarama film theater.

Comfortable theater seats provide a restful pause within the United theater, just before a showing of Saul Bass' "From Here to There."





# PORT AUTHORITY THEATER

*ride aloft with cameramen for an exciting  
new look around New York's vast waterfront*

**T**HE TOWERING PILLARS of the Heliport at the Fair, operated by Port of New York Authority, shelter the 195-foot circumference of a circular theater in which another spectacular 360-degree color film surrounds the audience with the Port-sponsored film, *From Every Horizon*.

This 12-minute "stereo" picture, produced by Fred A. Niles Communications Centers, rides above and around the far-flung facilities of this great port, shows its bridges and tunnels as they funnel millions of people back and forth from suburbia to the working canyons of Manhattan each day. It takes viewers aloft in its many helicopter-shot sequences to show how the Port's international trade operations — docks and airports — play such an important part in the commerce of the area.

Niles' crews produced the film with a specially-designed rig of 10 Arriflex 16mm cameras, matching their "takes" to the ultimate

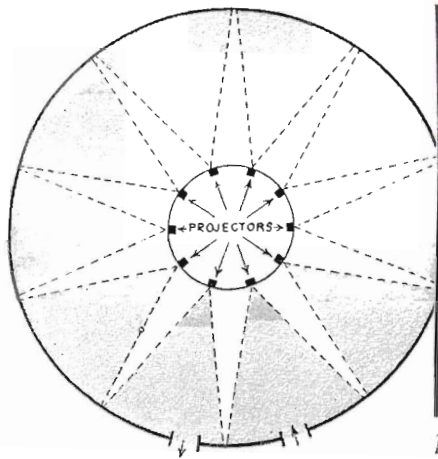
10-screen projection setup which envelops viewers in the circular "stand-up" theater (see sketch below). The camera setup was trundled all over the Port area by special vehicle and, most notably, taken aloft by helicopter to give the Fair viewers some very exciting moments as the whole viewing area and tilting horizon make him feel part of the action.

Projection is via a "pod" suspended in the center of the theater's ceiling. In this booth, 10 Eastman Kodak Model 25 16mm sound projectors were set up by William Ralke for synchronous operation. Each has a 36-degree field of view to cover its section of the 10 screen panels which encircle the auditorium.

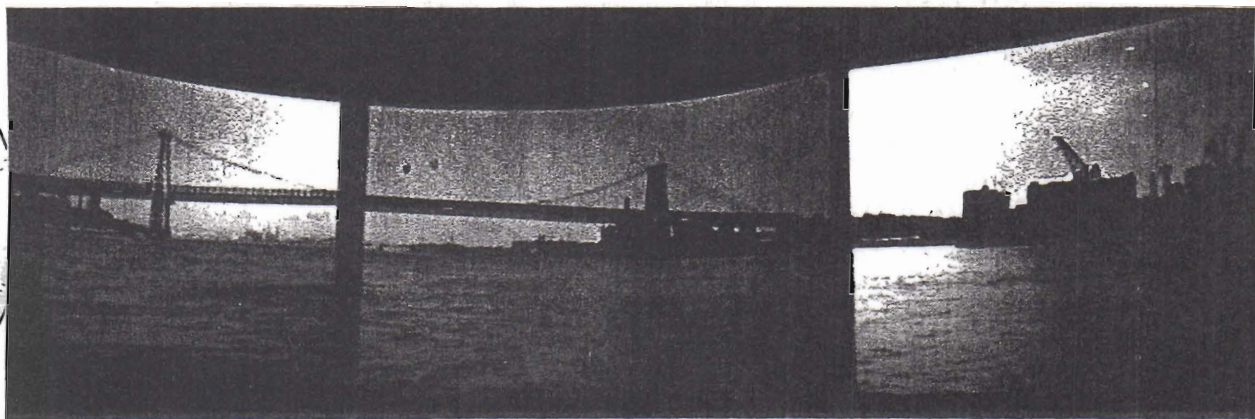
Narration has a "stereo" effect as voices come from the "Jersey" side of the Hudson River seen on the screen and, again, from the New York side, thus emphasizing the bi-state nature of the Port Authority to the audience. •



*Beneath this Port Authority Heliport is the circular theater in which Fairgoers see "From Every Horizon," a 360-degree look at the Port.*



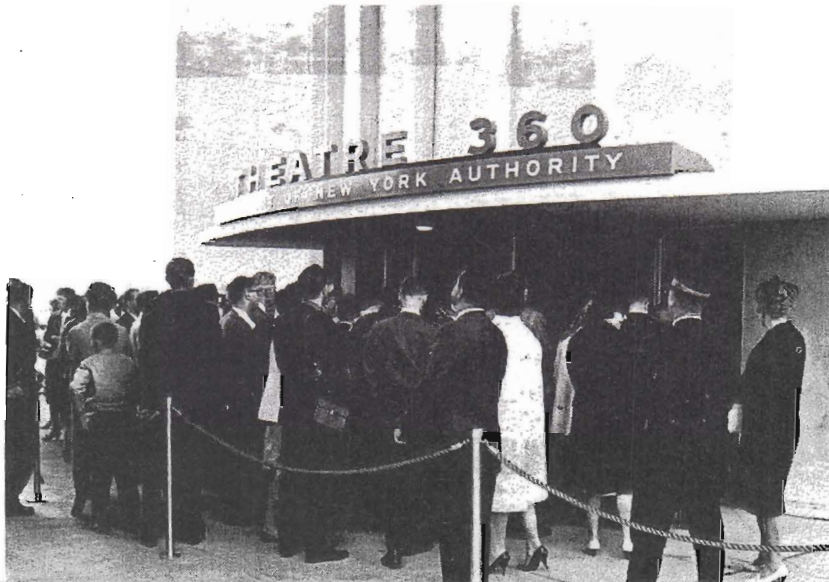
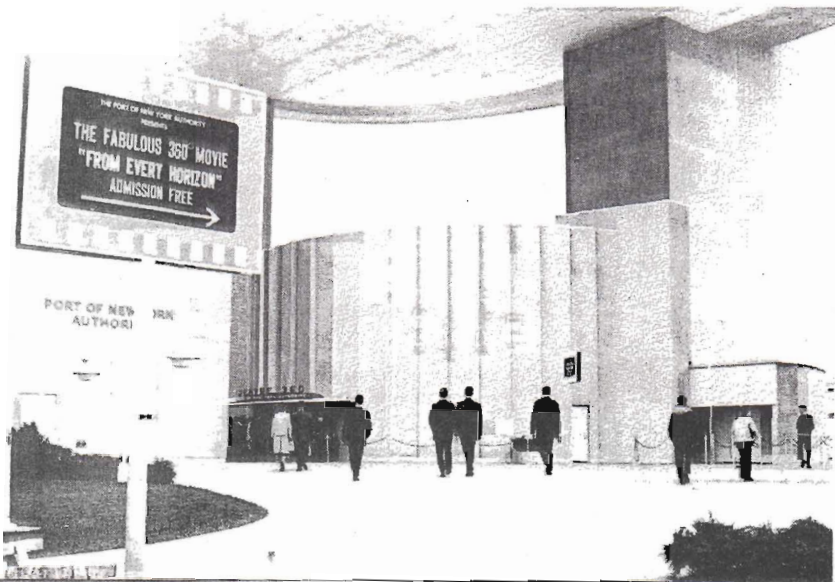
*Sketch of the 10-screen theater*



*Many of the scenes in "From Every Horizon" were lensed by Niles' crews from helicopters; our picture caught only three of ten screens which enfold viewers, to show one of bridges along New York waterfront.*

Port Authority picture is shown in this circular theater beneath the Heliport (background); there is no admission charge to this program.

The Port's "Theater 360" is now drawing good audiences at nearly all performances as this entrance shot of a typical waiting line proves.







A 330-foot facade of multi-colored glass draws the visitor's eye to the beauty of the United States Pavilion.

## THE MANY IMAGES OF THE UNITED STATES

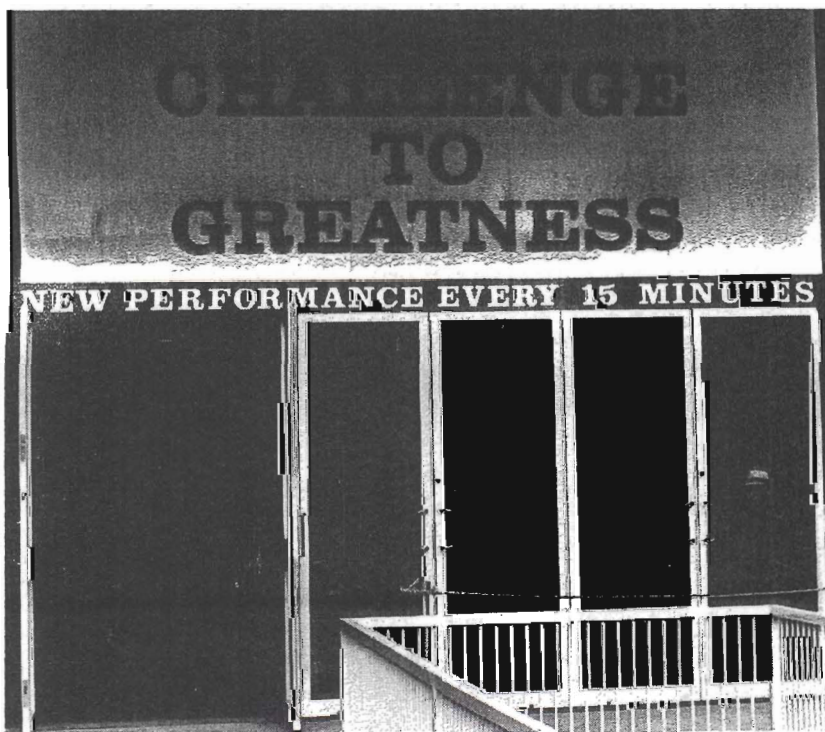
*the big show is a Cinerama "ride" through 400 years of American history*

**F**EATURE SHOW on the top floor of the huge United States Pavilion is a "ride" with film that takes the visitor through 400 years of the history of this nation.

The *American Journey*, produced by Cinerama, Inc., requires a dozen 55-seat vehicles which move along a 1,200-foot journey which passes 110 screens of every shape and size. 159 projectors (both movie and still) are used to fill the screens with scenes ranging from the depths of the sea to the outer reaches of space. Individual headsets built into each chair carry the narration . . . "here is our past, look at it!"

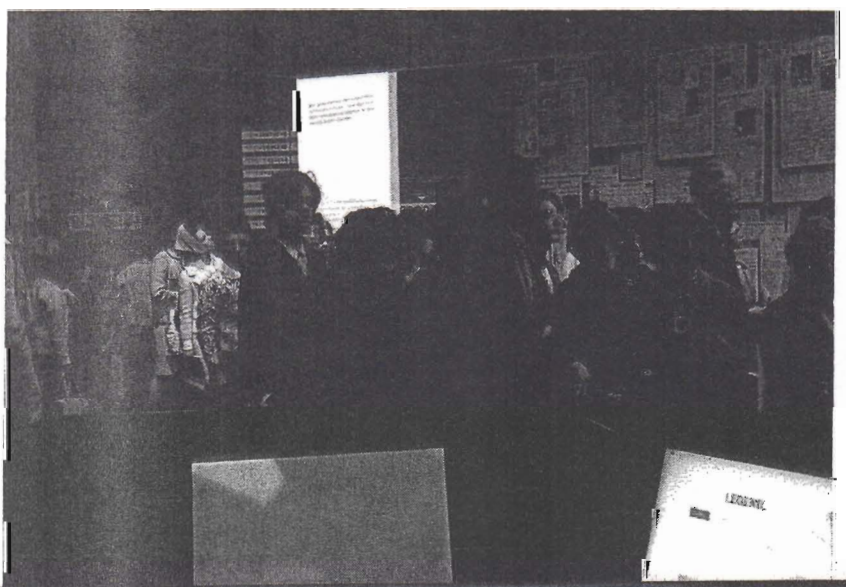
### An "Environmental" Film

The experience is called an "environmental" film program, designed to encourage audiences to feel "in" the events as they happen, to psychologically participate in the nation's history as it unfolds. The *Journey* begins with early scenes of America before the explorers arrived, rolls on through



The late John F. Kennedy endorsed "Challenge to Greatness" theme of the United States Pavilion. This is the entrance to the Cinerama "ride" which takes groups of Fair visitors on "The American Journey."

Films are also projected in several "wells" in the U. S. Pavilion; here they are shown on side walls by overhead repeater projectors.



pictorial highlights on the past, leading up to the challenges of today's jet age.

There are 19-35mm motion picture, 14-16mm motion picture and 126 Eastman Carousel slide projectors along the ride. Narration for *The American Journey* was written by Ray Bradbury; Jeremy Leppard directed for Cinerama. The musical score is all "Americana" with sounds of railroad whistles, old tunes, harmonicas and the like.

### Film "Voyage to America"

☆ Before reaching the Cinerama show, visitors are first received in a 500-seat theater for a showing of *Voyage to America*. This introductory film was produced by Graphic Films Corporation in collaboration with John Houseman. Its black & white images utilize both live action and animation to move through America's Colonial period, to the phase of American Immigration and the period of Expansion (from 1820 to 1920).

An original music score by Virgil Thomson, direction by Ben Jackson, and editing by Pieter Van Deusen of Graphic Films make this a notable film. It was narrated by Alexander Scourby and designed to create an understanding and mood of excitement and confidence in the American way of life — past, present and future.

This nine-minute black & white film should be made available to the nation's schools when the Fair closes.

\* \* \*

The Pavilion's theme "Challenge to Greatness" was endorsed by the late John F. Kennedy. It is exemplified in a Pavilion area of "Challenge" through which visitors walk on their way to the *Journey* film. Here several hundred other displays include continuous films shown at the bottom of a "well" set in the floor of the United States Pavilion.

The "Voyage to America" picture is shown in this 500-seat theater; Graphic Films collaborated with John Houseman for this production.







Cine-Globe Cruiser scene shows a Navy fighter on a "strike" mission, viewed from the pilot's angle; audience figures are in foreground.

## NAVY CINE-GLOBE CRUISER

**ultra-realism of a superb training device**

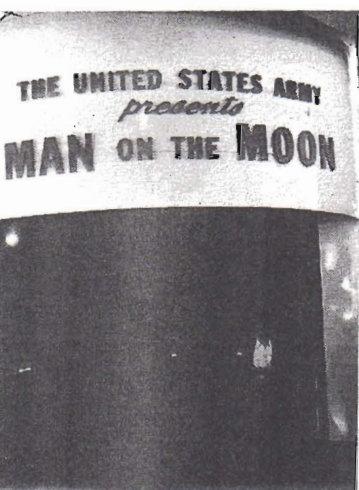
**surrounds viewers with action on the screen**

THE "WRAP-AROUND" projection system developed by The Jam Handy Organization is bringing visitors a bigger-than-life look at the Navy and Marine Corps in action. The system is used in a Cine-Globe Cruiser theater within the Travel & Transportation Pavilion.

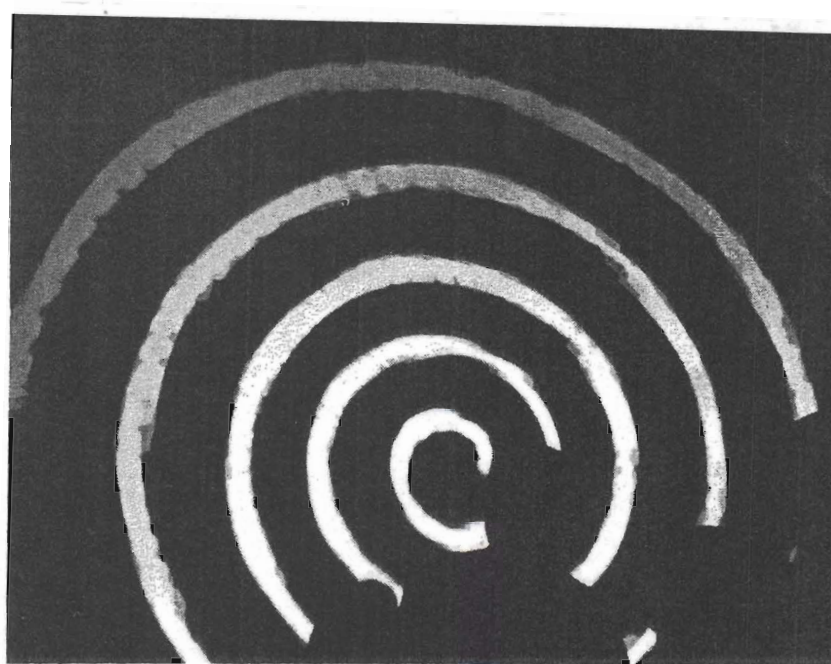
Landing a fast jet on an aircraft carrier, plunging beneath the sea to a nuclear submarine, hitting a beach with the Marines . . . these are typical scenes as the Cine-Globe presentation gives amazing realism on its hemispheric screen. The system uses a Handy-designed lens of a unique type that completely fills the spectator's field of vision. The screen curves around and above the viewer to give the "you are there" effect.



Small continuous repeater projectors like these offer films on Navy and Marine Corps subjects in the Transportation Pavilion.



The U. S. Army has this small walk-in theater in the Travel Transportation Pavilion. It shows a movie, transparencies and dioramas of modern Army.



Opening scene in the Cine-Globe Cruiser show has jet trails revolving outward until they fill the entire area of hemispheric screen.

on its upper tiers (above the projector) for about 75 standees; a dozen or so children are permitted to sit on the floor "within" the screen area, practically "inside" the picture.

The Cine-Globe Cruiser's physical setup, utilizing a single very wide-angle lens for both production and projection, standard 35-mm motion picture films and a fold-up-and-carry hemispheric screen has already been utilized by The Jam Handy Organization in some stunning commercial presentations.

It is this kind of "carry-out" idea which business users of the film will be seeking at the Fair. The cost and complexity of larger,

"permanent-type" exhibits discourages their use outside of the exposition grounds.

### The Army's Little Theater

Typical of dozens of such installations around the Fair is the small (10 persons) "walk-in" theater in the T&T Pavilion now showing a *Man on the Moon* film under U. S. Army auspices.

Also featured in the Navy and Marine Corps exhibit area at the Fair are six 16mm rear-projection (continuous) motion picture setups enclosed in round balls set on poles. Films shown are concerned with life in the services and the advantages they offer to young men and women.

Below: young viewers are encouraged to sit on the floor, "inside" the Cine-Globe Cruiser screen area which surrounds them. Their parents stand in tiers up and beyond the projector shown at top right.



Standard-gauge 35mm film is used and the "taking" lens for production of the sequences is similar to that of the projection lens so that the simulated 3-D effect of the system is without image distortion. The Cine-Globe system was originally devised by JHO with the cooperation of the U. S. Navy to provide a realistic training device for Naval Aviation and in Marine Corps tank training. It simulates combat conditions, especially those involving fast motion (such as a jet plane attack). The lens covers an extremely wide angle (142 degrees) to almost match the field of vision of the human eye.

### Ten Minutes of Real Action

The 10-minute presentation takes place in a theater with room





View of the Protestant and Orthodox Center at the Fair; theater inside is showing controversial "Parable" film.

### "Parable" in the Protestant Center

THE CONTROVERSIAL religious film, *Parable*, is showing several times daily in the Protestant and Orthodox Center at the Fair.

It was produced for the Protestant Council of Greater New York by the Fred Niles Communications Centers, Inc. Rolf Forsberg was

## RELIGION AT THE FAIR

the author of the *Parable* script.

Chief character in the 22-minute film is a clown called Mime, who plays the role of a committed Christian. It is this character which has brought on controversy among church people, since he can be identified with Christ, depending on individual interpretation. Two members of the sponsoring Council actually resigned over this point.

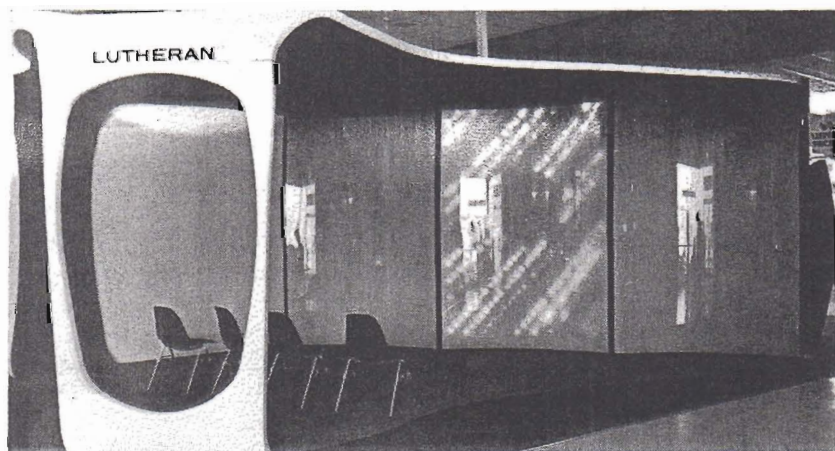
Filmed in a circus atmosphere (at Baraboo, Wis), the film shows

Mime taking upon himself various disagreeable tasks. Each of his actions win him the friendship of underdogs and the enmity of his masters, who kill him in a brutal attack while he is dangling on the puppet strings of Magnus, the antagonist who induces the tragedy.

In the end, a white clown, who can be identified as either Mime, Magnus, or Christ, is seen riding on a donkey behind a circus, a scene almost identical to the one opening the film.

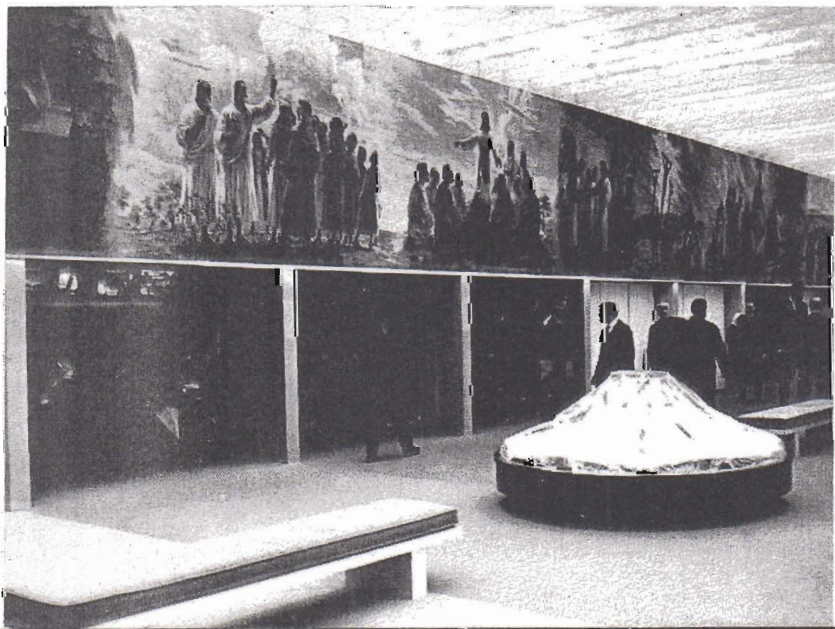


At left: within the Protestant and Orthodox Center, this Lutheran alcove has three screens on which abstract displays of light are projected while a narrator tells of the work of the church around the world. Above: the "Guide Posts" exhibit has telephone receivers which deliver brief recorded messages on God's Power, narrated by noted personalities while visuals are projected on screens above.



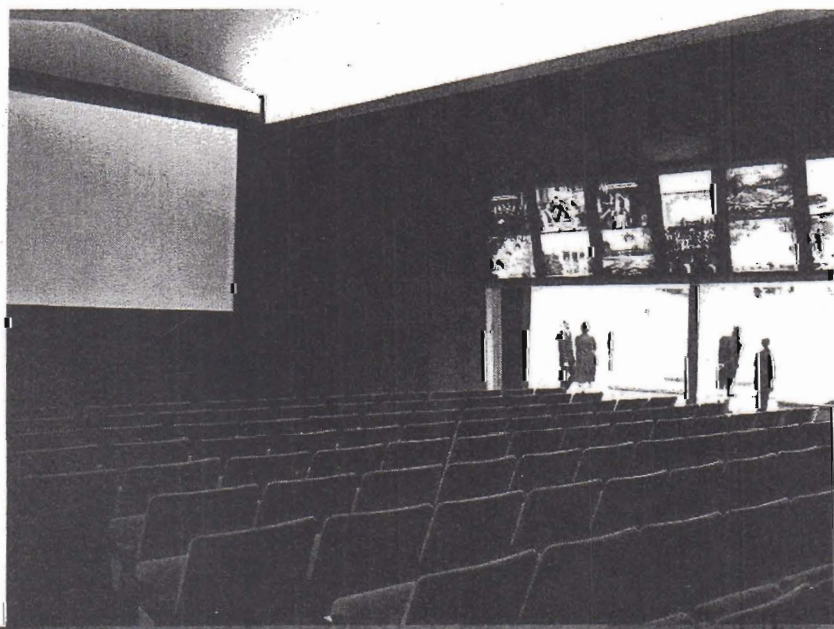
### Mormon History on the Screen in Twin Theaters

Mormon pavilion theater entrance (below the historical mural) where viewers are seeing a 15-minute film on the history of that church.



FOUNDED IN NEW YORK state 134 years ago, the Church of the Latter Day Saints (Mormon) has symbolically returned home in

Interior of one of twin 140-seat Mormon theaters which use a 35mm Century arc for projection. Note lighted transparencies at the right.





the recent dedication of its pavilion at the Fair. It features a 127-foot replica of the eastern spires of the famed Salt Lake City Mormon Temple.

There are also a pair of twin 140-seat theaters within the pavilion, alternately showing a film on Mormon history. It is a 35mm production, projected on Century-arc equipment for its 15-minute duration. Walls of the theater are open at one side, below a fine mural which also depicts historical episodes in the life of the church founded by Joseph Smith. Transparencies along the wall of the theater illuminate both historical episode and activities of the church.

The pavilion was dedicated on May 18th, in the presence of high-ranking dignitaries, headed by President Hugh B. Brown, First Counselor in the First Presidency



127-foot tall replica of the eastern spires of the Mormon Temple is part of the Church pavilion.

of the Church. G. Stanley McAllister, President of the New York Stake ((diocese) presided at the pavilion dedication. •

\* \* \*

#### Five Church Pavilions Show Films at the Fair

☆ Of the seven pavilions sponsored by religious organizations at the Fair, five use films as either feature attractions or as major elements in their exhibit buildings.

This Fair is *unique* in exposition history in its emphasis on these religious pavilions. And they are drawing goodly throngs of visitors at all hours, warm testament to the interest shown by the people of the U. S. and those from abroad who come there. •



The Vatican Pavilion at the New York World's Fair is one of the most impressive structures in the area.

☆ ☆ ☆ ☆

#### The Vatican: the *Pieta* and Films

SYMBOLIC of the important participation of churches of many faiths at the New York World's Fair is the beauty and grace of the Vatican Pavilion. The most important work of art of the Fair is on display here: the 465-

year-old *Pieta*, carved in marble by Michelangelo and generally considered the finest example of Christian art in any medium. It was sent to New York by special permission of the late Pope John.

Theme of the Vatican pavilion

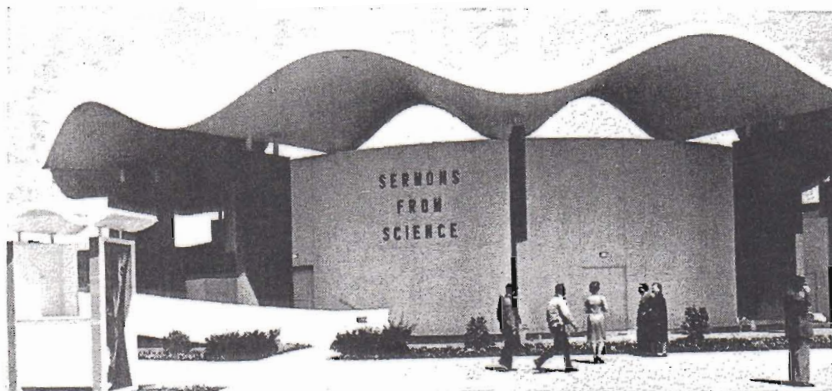
exhibit is "The Church is Christ Living in the World" and a multiple screen wall carries ten one-minute films which reflect various aspects of Christ's love and the Church as an instrument thereof. Each of these films contributes its own separate images to the theme.

In another ground floor room are the celebrated LIFE transparencies of Michelangelo's Sistine Chapel ceiling and a photo exhibition on Catholic sacramental life. •

The Vatican Pavilion has the "*Pieta*" as its featured attraction but it also has this unique multiple screen wall on which one-minute films are rear-projected on subjects reflecting various aspects of Christ's love.







The Sermons from Science Pavilion houses a 600-seat theater where Moody science films are shown hourly, plus scientific demonstrations.

### Moody Science Films at the Fair

WITHIN the Sermons from Science Pavilion, a 600-seat theater is offering 30 different half-hour programs. These include the well-known Moody science films, such as the award-winning *City of Bees* and *Red River of Life*. Lectures and science demonstrations alternate on the program.

Show's basis theme is the relation of basic laws for science and religion. Narration can be heard

in 13 different languages via earphones and a dial system.

Projection is by a specially-modified Graflex 800 16mm unit linked by a synchronous drive to a Stancil-Hoffman playback with five sound heads. Thus, while optical sound is fed to speakers in the theater, earphones receive translations (five versions at a time) from the tape playback linked to dials at special seats. •

### Billy Graham in 70mm Todd-AO

BILLY GRAHAM's Pavilion is a showcase for the noted evangelist's 70mm Todd-AO motion picture, *Man in the 5th Dimension*, showing daily "on the hour."

Rev. Graham's prologue notes: "You are about to embark on a breathtaking journey through the four-dimensional world of space and time, into the realm of the fifth dimension, the dimension of the spirit . . ."

Scenes taken at Mount Palomar

show our own galaxy and the galactic systems millions of light years away. The story of creation is told in the setting of the Earth's "oldest living things," the giant redwoods of California. Billy Graham demonstrates the continuity of Christian witness down through ancient and modern times to the present day.

An imported 70mm projection system is used to beam Todd-AO images to a wrap-around screen. •

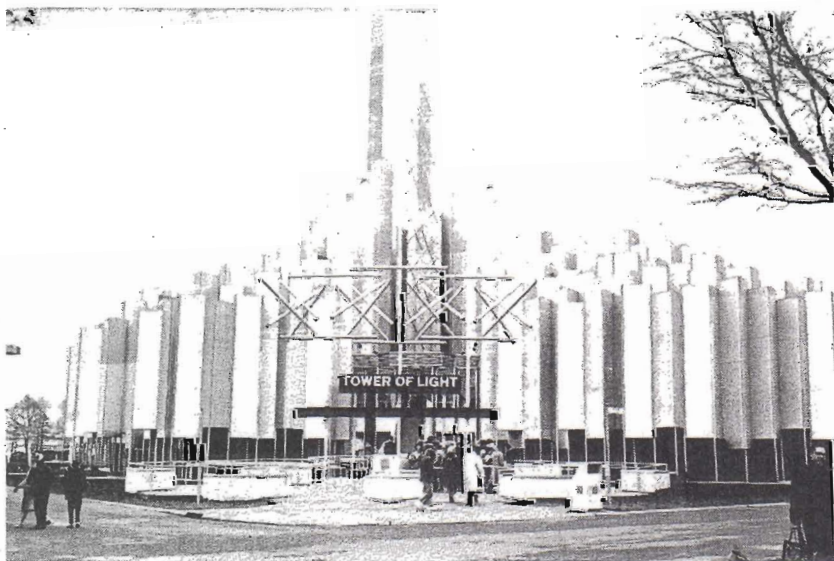


## THE TOWER OF LIGHT SHOW

an automated story of electric power & light

INTEGRATED FOUR-MINUTE FILM images provide interesting accents to the fully automated show at the Electric Power & Light Exhibit's Tower of Light, where five motion picture projection systems, designed and engineered by Reevesound, are in operation. Each system includes one 35mm Norel-

co virtually instantaneous changeover in the event of burnout, giving the system a "continuous running" capability that is further enhanced through the use of Reevesound-designed 35mm continuous film loops. Fifty-watt Fairchild power amplifiers are used with the system.

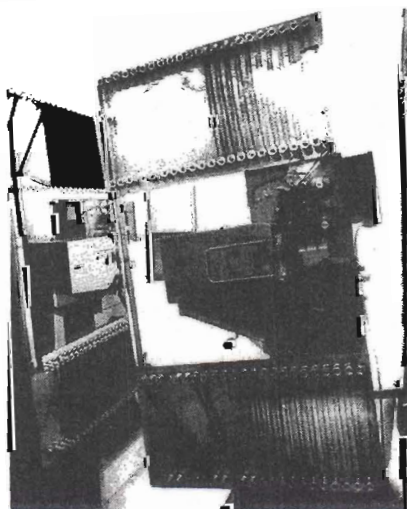


co Pulsed-Lite projector, with start-stop operation triggered by stop cues that are reflective patches on the film.

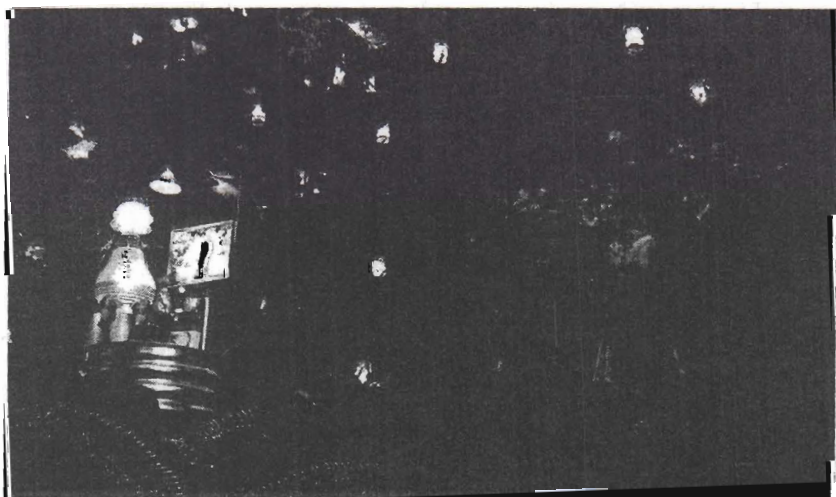
Norelco Pulsed-Lite lamps used on the projectors permit great flexibility in system design and operation. The light sources are water-cooled short-arc mercury tubes pulsed 72 times per second by a synchronizing signal from the film advance mechanism of the projector.

The water-cooled mercury tubes make it unnecessary to vent the lamps to the outside. They are mounted in pairs within the lamp-house water jacket with automatic,

Below: the Tower of Light show combines film scenes (at right) with this animated light bulb.



Above: 35mm Norelco Pulsed-Lite projector for Tower of Light is modified for cued, start-stop operation of integrated show.







Audio-Animatronic dolls representing 26 lands sing and dance along Pepsi-Cola's boat ride.

## Pepsi-Cola's "Small World"

THE PEPSI-COLA Fair Exhibit transports the magic of Disneyland to Flushing Meadow as it takes visitors on a water-jet voyage titled "It's a Small World," a Salute to UNICEF. Once again, Audio-Animatronic figures of the world's children sing and dance in full-color fantasy settings of their native countries.

Canals wind through 26 lands, past a Very Leaning Tower of Pisa, a confetti-draped Eiffel Tower, miniature Swiss Alps and a Disneyesque Taj Mahal. Great fun for the small fry as the Irish "wee folk" sing, a Swiss yodels and Dickens-inspired Britains carol atop a Cockney moon.

Within the two-acre Pepsi-Cola area, the U. S. Committee for UNICEF is operating its own pavilion, dramatizing its role in helping meet the needs of children in over 100 developing countries.

The cruise is housed in a 47,000-foot air-conditioned building. It can handle some 55,000 passengers along its waterway.

The pneumatic and hydraulic tubes of these Audio-Animatronic figures are activated by audible and inaudible impulses fed by a complex magnetic tape system. A setup like this requires the services of electronic experts for constant maintenance. It is not calculated to give the average exhibitor any notions about the adoption of the idea except in static, long-term situations, also warranting the considerable expense involved in creation of the figures.

But this combination of entertainment and international welfare is one of the Fair's best!

## MAKING IT A WORLD'S FAIR

*the sounds (and sights) of the Emerald Isle*

*within Ireland's most attractive pavilion . . .*

IN CREATING its Pavilion, the Government of Ireland has provided visitors with a series of rich, varied and pleasing experiences that communicate most effectively the mood and feeling of the Emerald Isle.

Almost square in plan, the two-story Irish Pavilion features a

To permit the beauty of the natural Irish stone background to be seen, the map is constructed as an openwork design with aluminum strips forming the outlines of the continents and other land masses.

Through the use of four copper symbols with baked enamel sur-



These "listening posts" in the Irish Pavilion's artificial forest offer a speech program by Irish writers, spoken by that country's noted actors and actresses and reproduced on a photographic sound system.

conical tower and a seven-foot wall composed of panels made in Ireland. The panels consist of a concrete core and a facing of large slabs of stone set in a bold pattern.

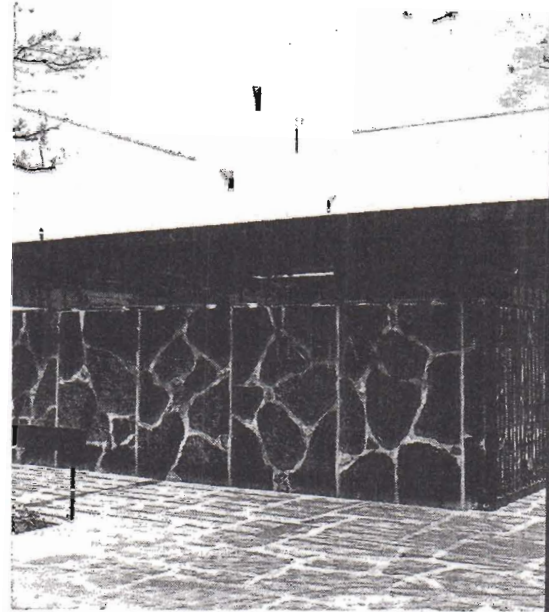
Chartered architects for the Irish Pavilion were Robinson, Keefe & Devane of Dublin. George Nelson of George Nelson & Company, New York, was coordinating architect. Mr. Nelson and Robert Fymat of the same firm were exhibit designers.

Visitors enter the Pavilion through a 50x30-foot open court which is partly shaded with a low wood trellis. On the east wall, a 15x7-foot world map is displayed.

faces in a variety of colors, the map indicates the extent of Ireland's relationship to the rest of the world in terms of cultural influence, emigration, missionary achievements and military emigration.

A dark-green plate-glass wall, bordered with shrubs and flowers common to the Irish countryside, separates the entrance court from the main exhibit hall. Opposite this glass wall, a 40-foot wall of copper-faced plywood containing four maps of the four original Irish provinces is displayed. Within the outlines of the counties are printed the names of those families which originated in these areas.

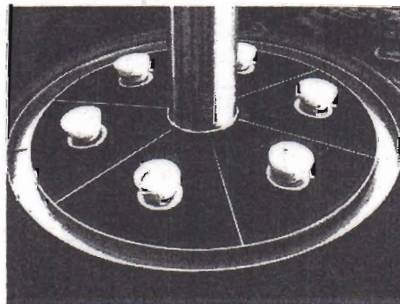
Scenes from Ireland's wide-screen slide show are projected in this stand-up theater in the pavilion. This room also has a "well" projection system which features a filmed trip over Ireland by helicopter.



The handsome Irish Pavilion has a big screen slide show and a helicopter film trip to Ireland.

Hidden loudspeakers give a quiet, continuous roll call, with a variety of Irish voices reading the names of the families which appear on the maps.

The first indoor space is the introductory area, a 30x50-foot air-conditioned room which is used as a projection area. Two types of presentation are featured in this space. One is a kind of glass capsule through which visitors can peer down at an aerial film projected on a circular pit about six feet in diameter. The illusion created is that of a flight in a balloon at about 1,000 feet above ground level. The flight is silent except for



Pull-out headphones at listening posts for the speech program.

occasional local noises such as the sounds of birds in the swamp, a bell in the distant church steeple, the barking of dogs, etc.

To show the four-minute films, Reevesound provided a modified 16mm Norelco FP-20B projector and a Reevesound-designed con-



## INTERNATIONAL PAVILIONS:

(CONT'D FROM PRECEDING PAGE) tinuous 16mm film looping rack. The fully automatic, remote controlled system is in continuous operation.

In a second major presentation in the introductory area, three electrically-interlocked Spindler & Säupe slide projectors are used to tell the story of the Irish people at their daily tasks, in views of the country's magnificent landscapes and seascapes. During the eight-minute show, some 300 slides are projected onto three screens that

utilize a space twenty feet wide. Folk music of Ireland, recorded in the studio of Radio Eireann in Dublin, accompanies the slide projection.

Linking the darkened introductory area with the main exhibition hall is a tower, a truncated cone similar to the ancient watchtowers still to be found at intervals on the Irish coast.

Main feature of the 3,500 square foot box-like exhibition hall, and focal point of the Pavilion, is a kind of geometric forest

bearing evidence of Ireland's outstanding cultural activities.

Consisting of eight tree-like metallic structures which serve as "listening posts," the forest is a place where visitors can listen to the words of the greatest Irish poets, novelists, and dramatists, as spoken by the finest voices in the Irish theatre.

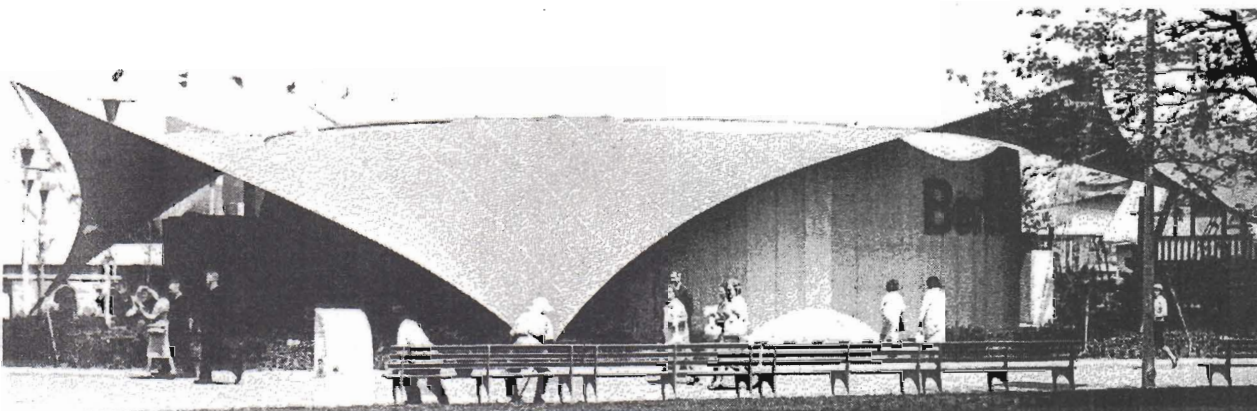
Six seats, situated around each post, permit forty-eight people to listen simultaneously to the recordings through the use of individual "hearphones." Reevesound's unique multi-channel photographic sound track reproducing system

provides the speech program played through the conical-shaped "hearphones."

Forward and reverse running capability of the system, in wide use at both the General Motors and Bell System Pavilions, permit one sound reproducing unit to feed the program for two "trees."

The metal tubes which form the "tree trunks" in this artificial forest extend upward, branching out into hundreds of cubes covered with information regarding Ireland's greatest writers. Photographs, paintings, engravings, manuscripts, busts, and first editions are displayed on the cubes, providing additional information on the great names in Irish literature.

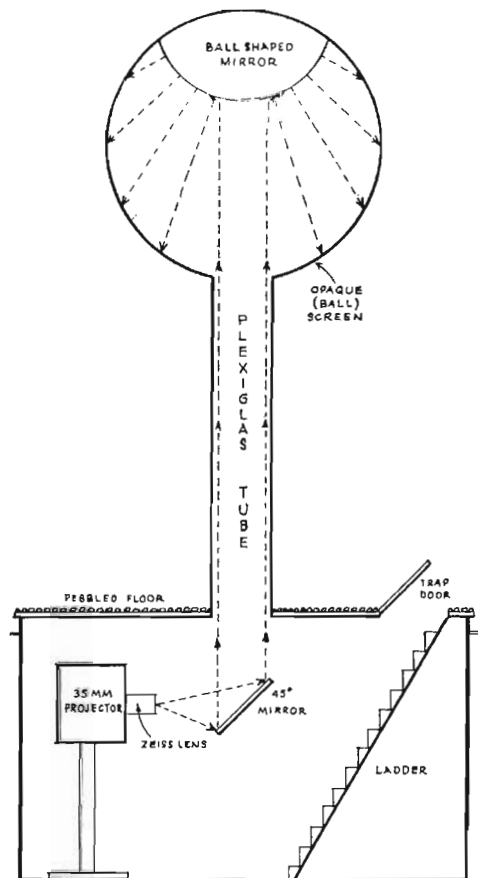
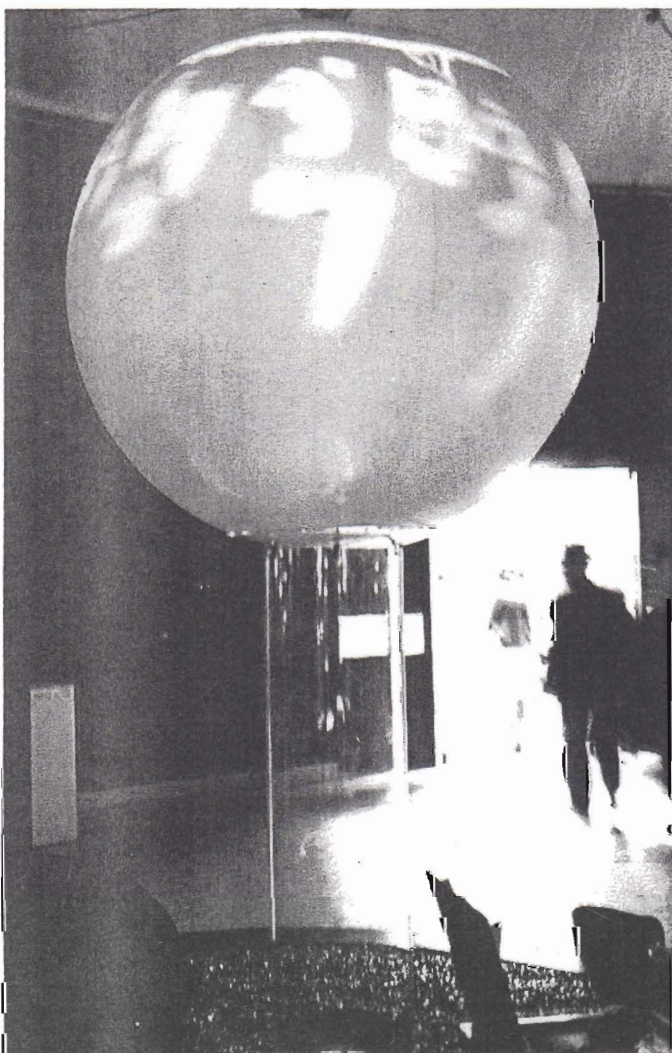
In the main exhibition hall the visitor is left free to study and enjoy what he chooses to concern himself with and ignore what fails to interest him. In leaving the hall, he passes out of the air-conditioned space into a quiet garden where he can pause, sit at marble-topped tables and sip Irish coffee while "punkahs," the slowly-revolving ceiling-mounted electric fans of another era, whirr overhead. The anachronistic devices were used to heighten the sense of pre-industrial tranquility that is characteristic of many regions of Ireland today.



The Berlin Pavilion at New York Fair features the spherical projection system described in this Fair report.

### Spherical View of Berlin

WEST BERLINERS going about their daily chores are pictured in the cartoon film projected on a novel, spherical globe in the City's Pavilion at the Fair. Another short film takes up technological productivity; maps with special lighting effects portray the Berlin of the future. •

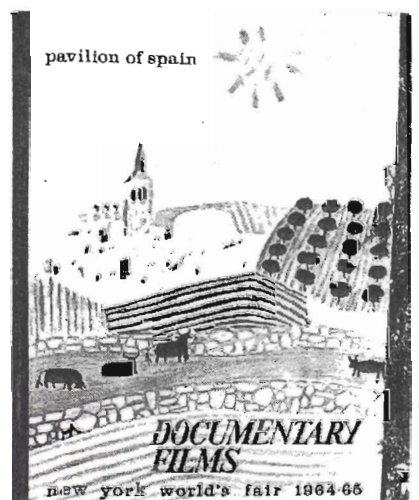


Left: this translucent sphere carries a cartoon film about life in West Berlin. It has an approximate four-ft. diameter. Above: our own sketch shows how images are reflected upwards through Plexiglas tube from 35mm (German-made) repeater projector down below floor. A Zeiss lens; 45-degree mirror are used.

## SPAIN on film

SPAIN'S PAVILION has been hailed as the most beautiful at the Fair and the accolade is well-deserved for it is solidly-constructed, has charm and grace in all its aspects of design.

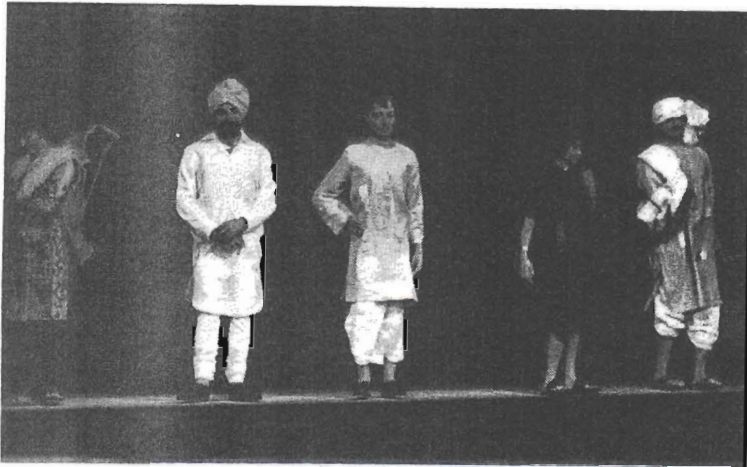
It's an expensive rendezvous, too, with elegant and costly restaurants; a distinguished exhibition of great Spanish art (Velazquez, Goya and El Greco) has a dollar



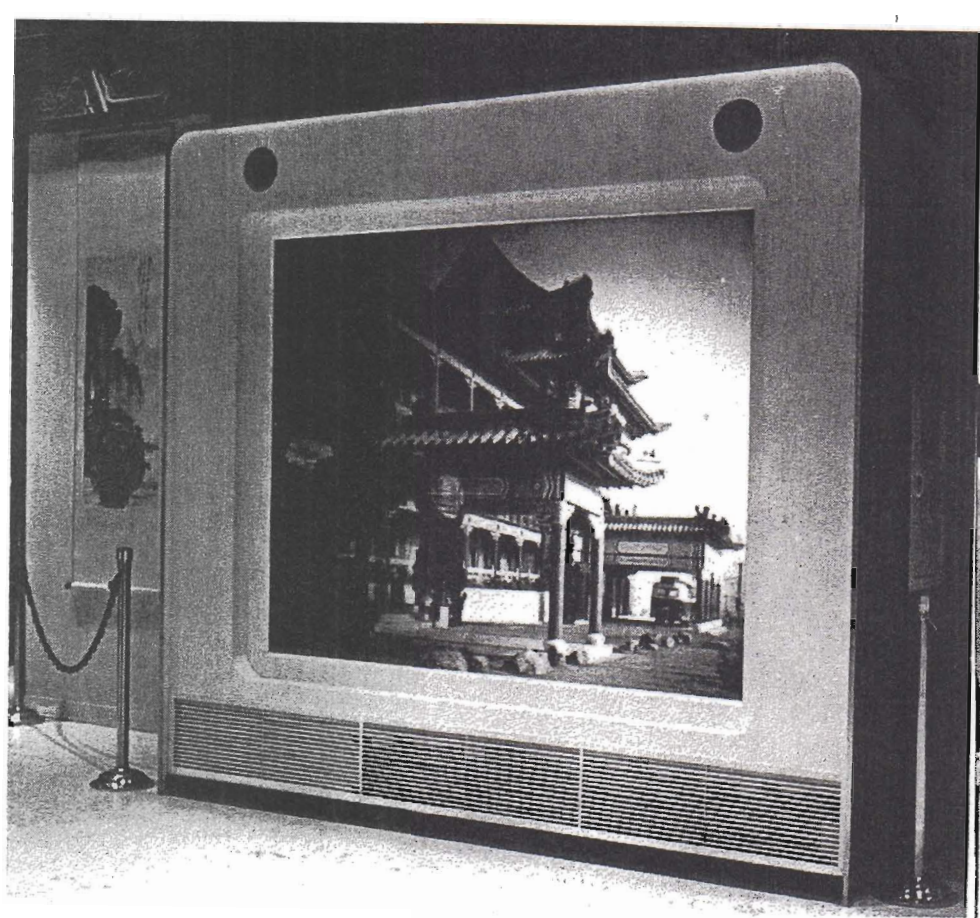


# AROUND THE WIDE WORLD

**I**NDIA'S PAVILION is one of the most interesting at the Fair, reflecting the industrial and social progress which this land has made since becoming an independent nation. Through dioramas (see below) and in visual displays and recordings, the pavilion shows the diversity of its people and the development of modern industry.



India uses a mirror-like screen to present these dolls, fading lights to show how the peasant becomes the technician; the village girl turns into a nurse. It is one of the interesting visual devices at the Fair.



Modern Taiwan (Formosa) has this very large rear-projection slide set-up which takes Fair visitors through the changing patterns of this old yet new country, showing its people, industry and good scenic views.

## SPAIN at the Fair:

admission fee. And there's flamenco dancing of the purest antecedents with Spanish music to be heard... also at a fee.

But, every morning at 10 a.m., Spain's opulent 400-foot theater opens its doors for continuous, free showings of documentary films (see poster cut) which are a joy to behold. Projection is by standard 35mm Century theater arcs so the sights-and-sounds of the land come through bright and clean on the screen.

\* \* \*

## Footnotes on Exhibits:

☆ Venezuela's pavilion has a continuous slide projection system. Two Selectroslides with dual automatic dimmers are used.

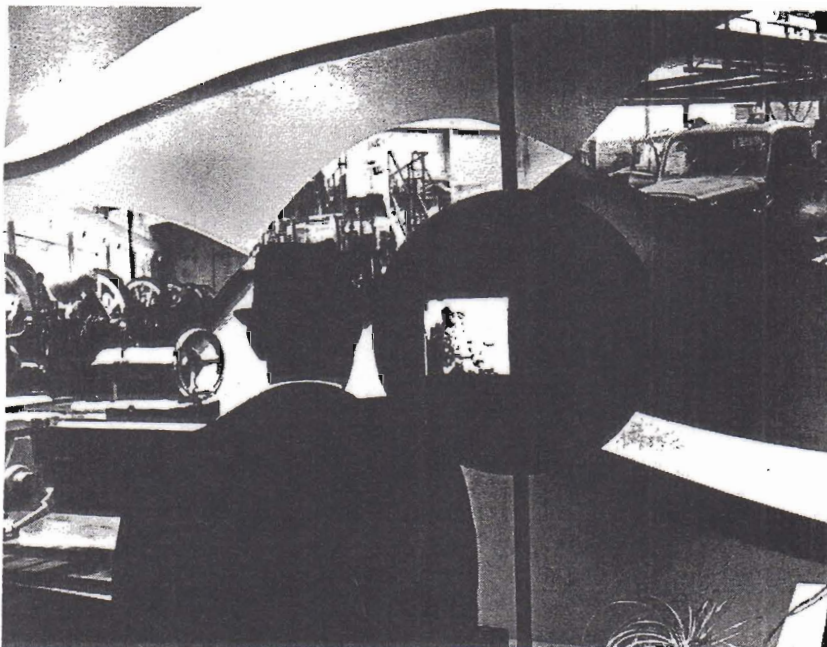
☆ Those continuous slide projectors of Jordan (see picture) are also Selectroslides.

☆ The American Interiors pavilion has a United States Rubber show which uses two DuKane Vista-Sell projectors to promote its vinyl carpets and Naugahyde.

☆ Singer Sewing Machine Company is using a Triangle 16mm and two Selectroslide projectors.

☆ Selectroslides are also being used by the National Catholic Education Association (Hall of Education) and by Kroehler Manufacturing Co. (American Interiors Pavilion).

☆ We'll supplement this report during the summer. Such exhibits

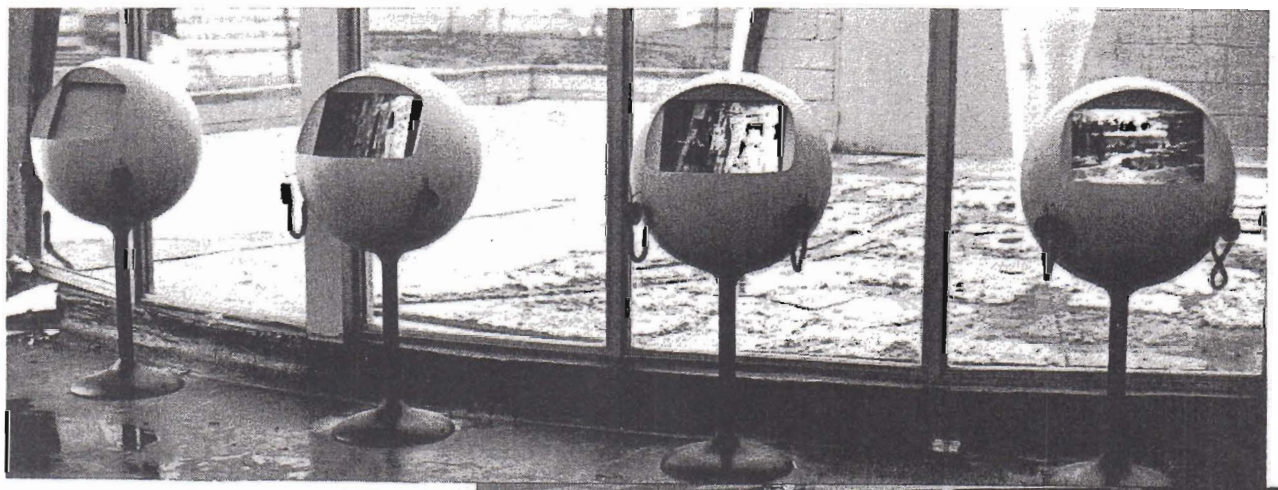


The United Arab Republic is showing films on modern industrial development in Egypt within this continuous repeater-projector at Fair.

as the Hall of Education were just being completed in late May; other pavilions were making alterations in their setups. The Fair

will also be analysed after closing in October, noting the equipment and the programs which have earned their popularity.

Jordan uses six of these round balls, containing continuous slide projectors and accompanying sound.



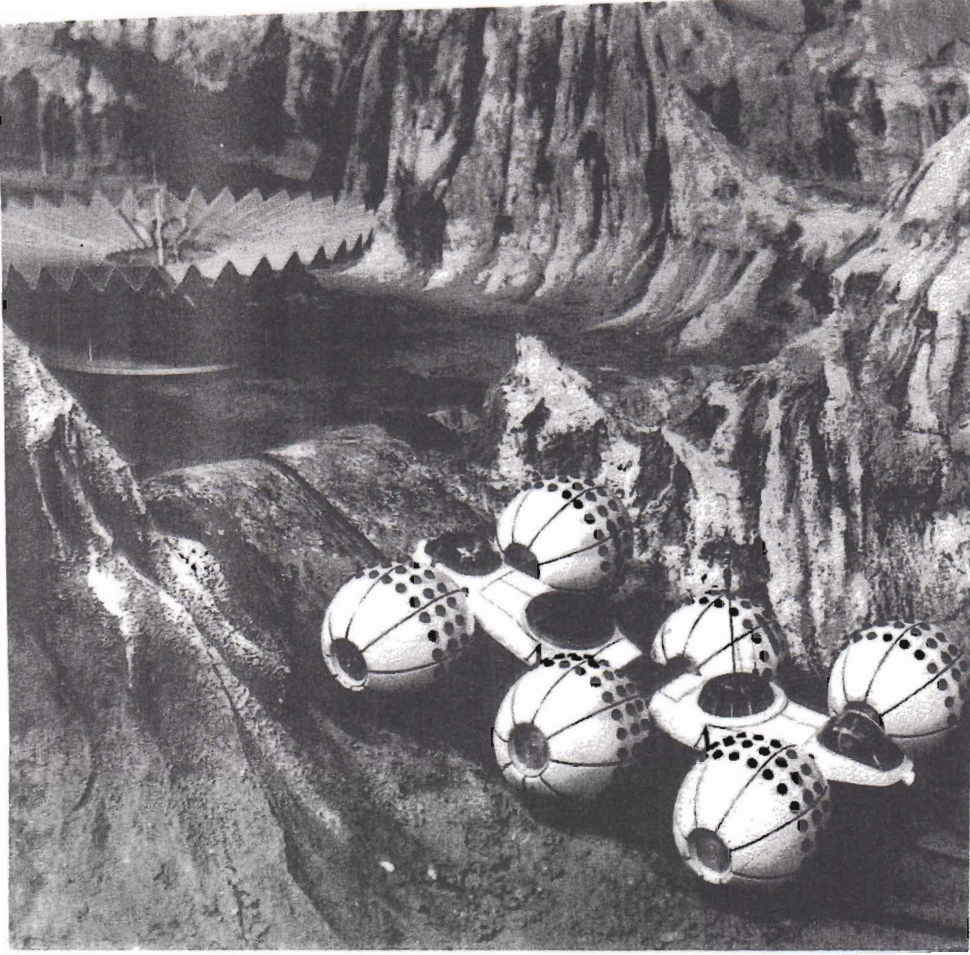
## The Images of Modern Jordan

**J**ORDAN'S PAVILION, scene of much controversy over a mural on the wall which calls attention to the plight of homeless Palestinian Arabs (which has aroused objections from Israeli groups) features an open hall downstairs with a lunch counter and a stage equipped for live or film showings in the center. There is a seating capacity of 125. Just off the same hall are actual specimens of the Dead Sea Scrolls.

The film being shown here on a regular basis is *This Is Jordan* (produced by United States Productions) showing many of the travel attractions of modern Jordan. Equipment used is a Triangle 16mm continuous projector.

Upstairs, opposite the mural, are continuous slide projectors, operating with individual sound tapes which describe Jordan's expanding economy and increasing number of schools, hospitals, roads and other facilities.





Futurama riders in the General Motors Pavilion can watch this big articulated crawler, capable of surmounting any terrain obstacle, as it moves across surface of the moon to a communications post.

## TRAVELERS HAS "TRIUMPH OF MAN"

*under a red umbrella, a film takes up search for life*

HOUSED IN A DOMED stone structure designed to resemble its red umbrella symbol of insurance protection, the Travelers Exhibit presents a dioramic portrayal of man's struggles and growth through the ages.

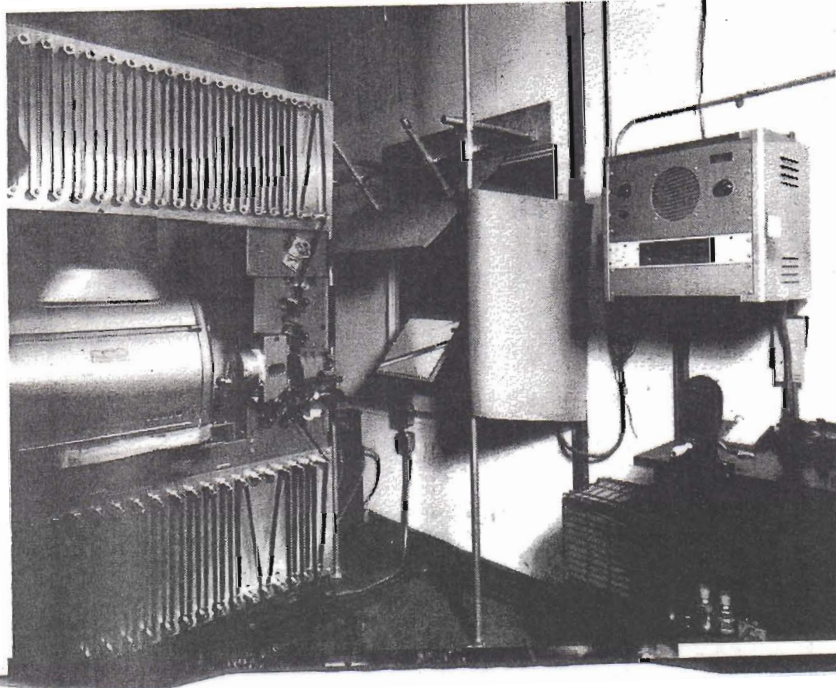
Beginning in prehistoric times, the dioramas trace human existence through more than two billion years from the dawn of man to the present. This story, "The Triumph of Man," culminates in an unusual motion picture depicting man's current explorations in

the reaches of outer space, his current searching for the basis of life itself.

Produced by Robert P. Davis of Little Movies, Inc., the film is projected by a specially designed Reevesound motion picture system. The picture images and ultraviolet stars are received by a dark blue screen wall and ceiling shaped like a half-sphere.

Reevesound's projection system consists of a 35mm Norelco FP-20 projector with conventional shutter, a 2500 watt Zeiss Xenosol II

Below: this special Reevesound-engineered projection system for the Travelers' Pavilion shows motion pictures on a dark blue screen wall. First-surface mirrors at top and front of projector step up images.



## THE GENERAL MOTORS RIDE THROUGH FUTURAMA:

(CONTINUED FROM PAGE 39) uses existing production facilities, recorders, printing machines and conventional methods for making release prints.

The 16mm photographic sound print has two pairs of tracks, one pair in the right-going direction, and one pair in the left-going direction. Each pair of tracks provides separate right-ear and left-ear programs, resulting in a full binaural reproducing system free from cross talk between adjacent channels. Forward and reverse running capability of the transport provides a unique solution to the long running time requirement. Reevesound malfunction detectors

are placed in fixed locations along the ride's route, while others are mounted on the ride itself to assure maximum reliability.

Interspersed among the dioramic Futurama displays are a number of 16mm motion picture images projected by professional Norelco units supplied by Reevesound. Some units are equipped with integral dichroic reflector incandescent light sources, and others with Xetron 450 watt Xenon lamps.

Reevesound's installation at the General Motors Pavilion was done in collaboration with the creative and technical staffs of General Motors Styling.



Travelers Companies' pavilion is reflected in Pool of Industry at the New York World's Fair.



Repulse of Attila the Hun is depicted in one of the dioramas at the "Triumph of Man" show.

light source, and a Reevesound-designed continuous 35mm film looping rack. The Reevesound-modified projector has intermittent start-stop operation, triggered every four minutes by a sensing device signalling the conclusion of the dioramic display one floor below.

Two first-surface mirrors, one mounted at the front of the projector mechanism and another located overhead, receive light beams leaving the machine, redirect them to the screen wall, thereby increasing projector distance and image size. The system operates with a 50 watt Fairchild power amplifier.

Donald Deskey and Associates were architects for the Travelers Pavilion, which was constructed by the George A. Fuller Company. Designers were Lippincott & Margulies.

\* \* \*

At right: 35mm Norelco projector, modified for intermittent start-stop operation, is being used for Travelers' film show. It has sensing device and 2,500-watt Zeiss Xenon light source.

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