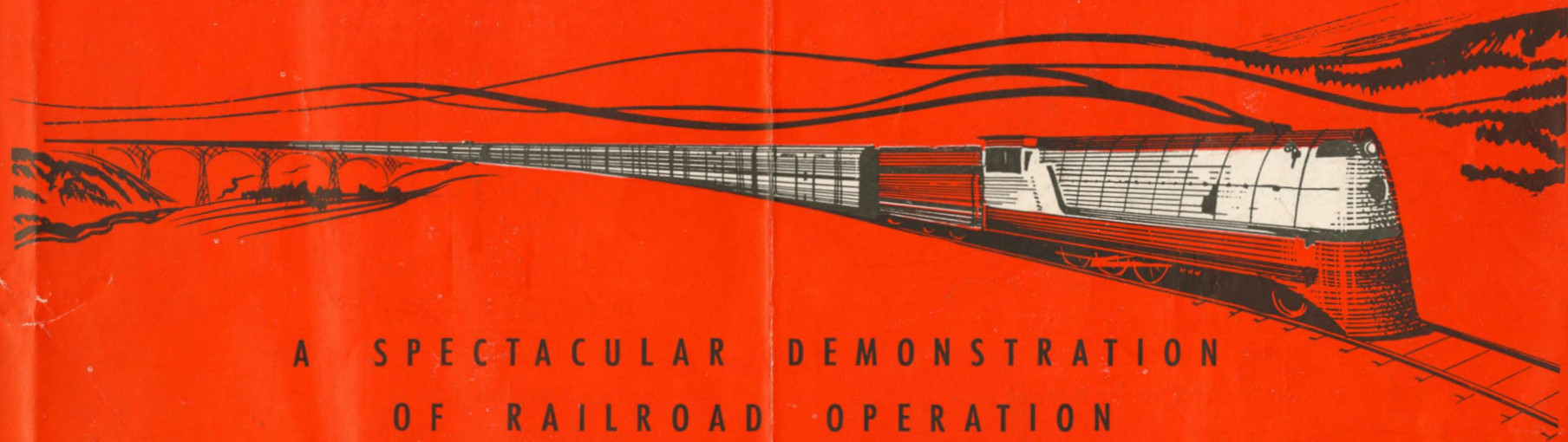


# RAILROADS AT WORK

## SOUVENIR PROGRAM



A SPECTACULAR DEMONSTRATION  
OF RAILROAD OPERATION  
IN MINIATURE

RAILROAD BUILDING • N. Y. WORLD'S FAIR 1939 • Price 5c

## **RAILROADS SPONSORING THIS EXHIBIT**

### **(Eastern Presidents' Conference)**

Baltimore & Ohio Railroad

Bangor & Aroostook Railroad

Bessemer & Lake Erie Railway

Boston & Maine Railroad

Central Railroad Company of New Jersey

Central Vermont Railway

Chesapeake & Ohio Railway

Delaware & Hudson Railroad Corporation

Delaware, Lackawanna & Western  
Railroad

Detroit, Toledo & Ironton Railroad

Erie Railroad

Lehigh & Hudson River Railway

Lehigh & New England Railroad

Lehigh Valley Railroad

Long Island Railroad

Maine Central Railroad

New York Central System

New York, Chicago & St. Louis Railroad

New York, New Haven & Hartford  
Railroad

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Pennsylvania Railroad

Pennsylvania-Reading Seashore Lines

Pere Marquette Railway

Reading Company

Rutland Railroad

Western Maryland Railway

Virginian Railway



# RAILROADS AT WORK

## AN EXHIBIT OF RAILROAD OPERATION IN MINIATURE

WHO has not thrilled at the sound of a train whistle? Whose pulse has not quickened at sight of a limited, flying through the night? What boy, or grown man, has not come to the crossing to watch the fast freight go by and count the endless string of cars? All these thrills of a life time are now bound up in the model show, RAILROADS AT WORK.

For the first time anywhere, the world of railroad fans and model fans (and who is not one or the other?) is viewing the actual operation of an entire railroad system, seeing in miniature the trains and locomotives "go by"—on the self same errand as their big brothers, hearing the warning whistle, seeing the smoke and steam just as in life. This thrilling model show, in a word, is a dramatic presentation of the every day life of a railroad throughout the 24 hours it serves the public, presented on a scale and with a completeness never before attempted. Only in miniature could this be done. For to present the same demonstration in life would require 50 square miles laid with 40 miles of track, and a plane ride to view it. The huge scenic diorama for its presentation—160 feet wide and 40 feet deep, the largest ever built—has compressed this area of approximately 50 square miles into its 7,000 square feet, laid it with the equivalent of 40 miles of track and made the viewing possible from the comfort of a seat.

It is a realistic presentation against a realistic background. The diorama of mountain, valley, forest, lake, river, waterfall, and ocean reflecting the topographical features of the eastern states over which the eastern roads operate, are assembled on one canvas to demonstrate

this operation in every detail. Dotted with cities, towns, farms, oil refineries, steel mill, factories and terminals, the setting is realistic to the last detail.

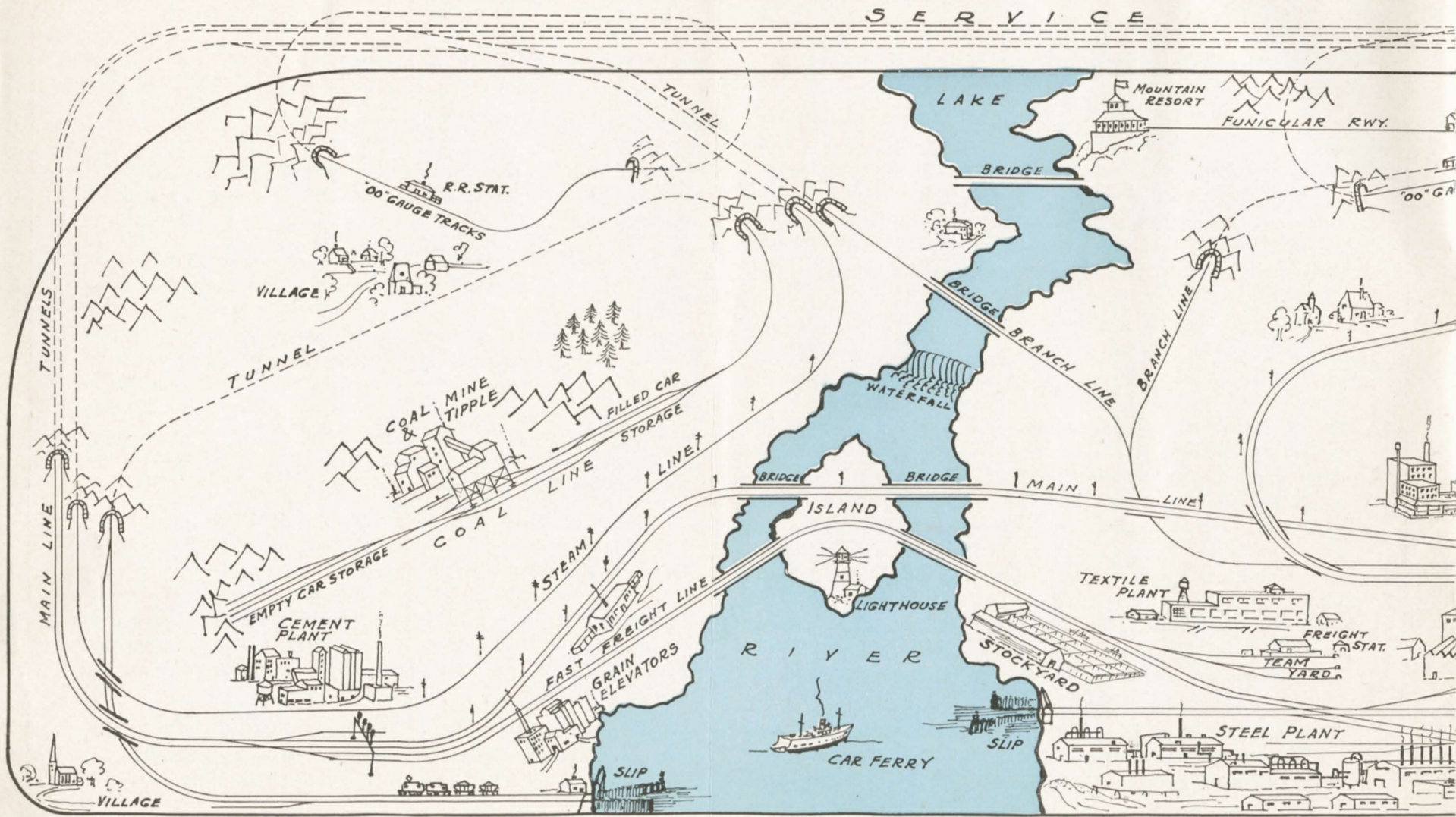
The actors in this show are model trains and locomotives, barges, tugs, car ferry, signal towers, rotary car dump, coal tippie, roundhouse and so on. Over the 3,500 feet of "O" gauge track laid for the operation, 500 pieces of rolling stock, including 50 locomotives, perform as in life, cross bridges, disappear in tunnels, bring coal from mine head to car ferry, and on again from ferry slip to steamship to be dumped automatically into the ship's hold; demonstrate suburban and main line passenger service, the arrival and departure of trains at station stops, automatic block signal system; freight service, high speed and local.

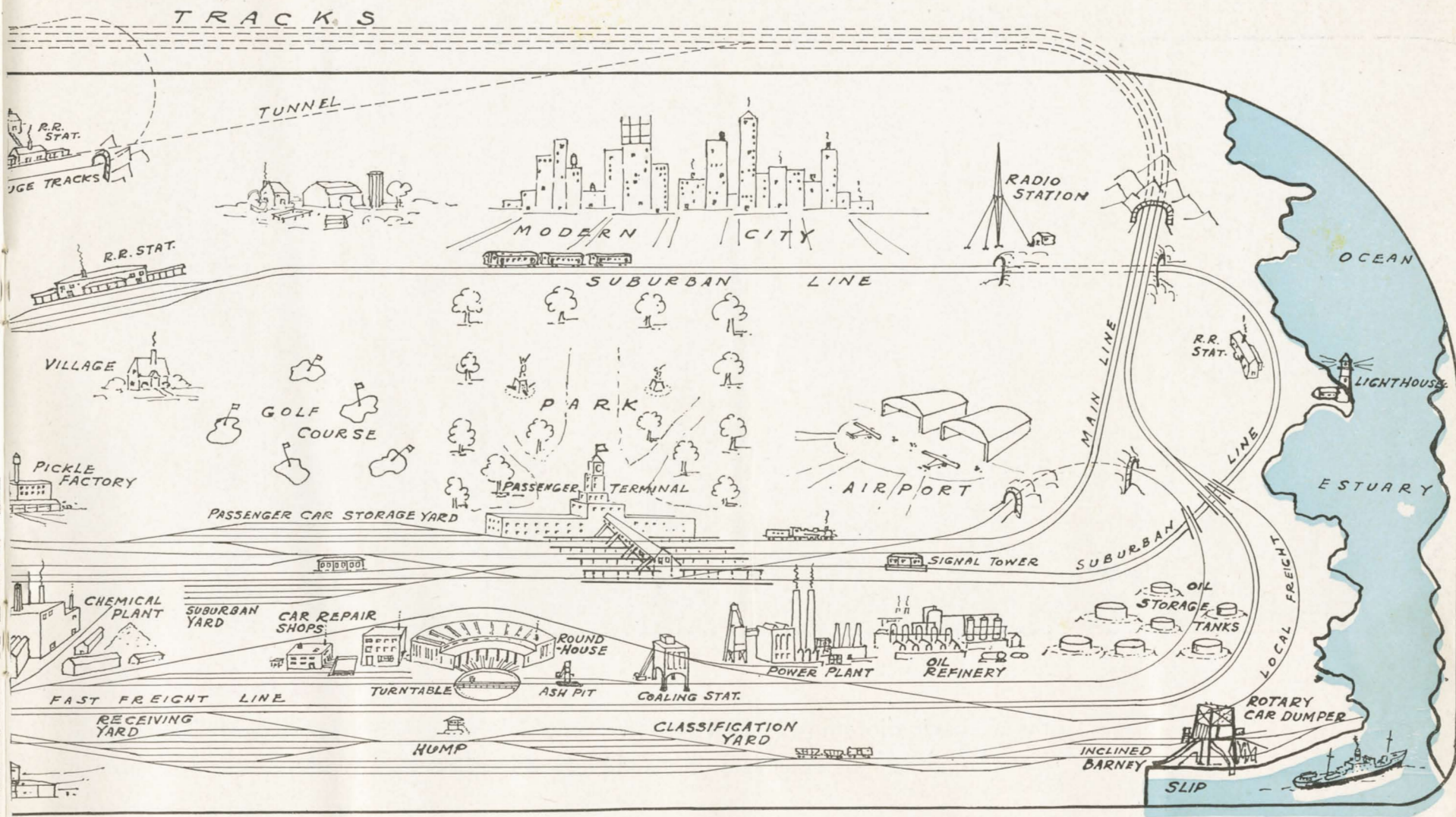
Operation of each train is by remote control from three booths located in the audience, each booth having its own interlocking machine. From a lighted diagram on the control machines, spectators may follow these operations. Special devices for automatic uncoupling, retarding, lighting and darkening trains have been designed by the engineers to meet the special conditions the demonstration imposes. Also specially devised are the steam, smoke and sound effects used to simulate actual running conditions.

Operation is seen under all conditions of daylight and darkness. The performance begins in darkness (theoretically at 4:00 A.M.), the background of a starlit sky permitting a spectacular demonstration of

*(Continued on Page 8)*









# RAILROAD

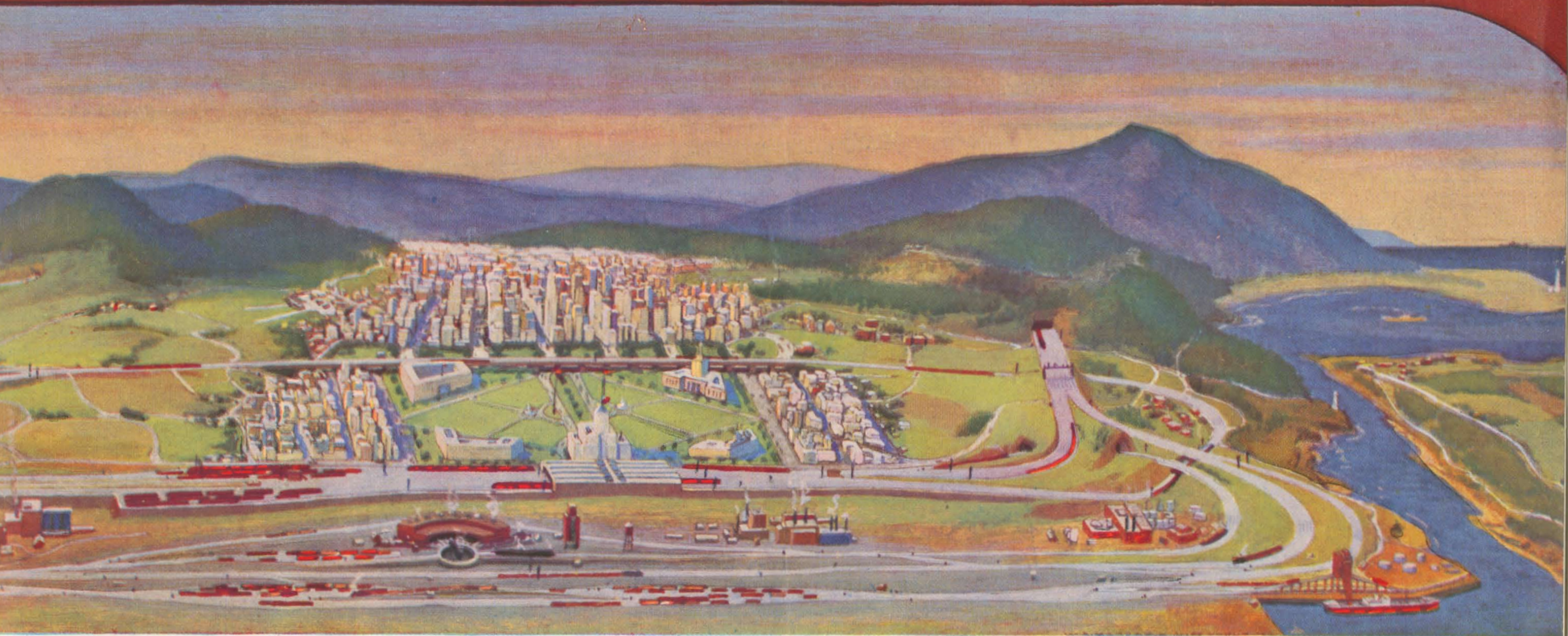


## ■ GENERAL VIEW

Huge scenic diorama 160 feet x 40 feet on which 500 pieces of rolling stock including 50 locomotives demonstrate the complete operation of a modern railroad system.



# SAT WORK



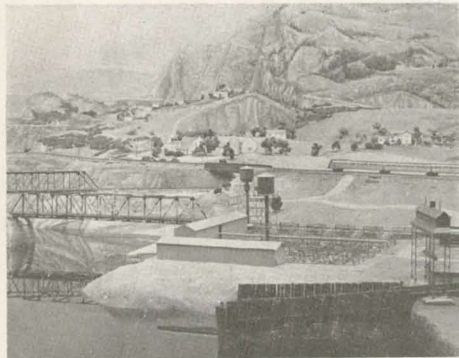
## W OF EXHIBIT .

In perspective this presents operation over a landscape 50 square miles in area laid with 40 miles of track which would be required for a similar life size demonstration.

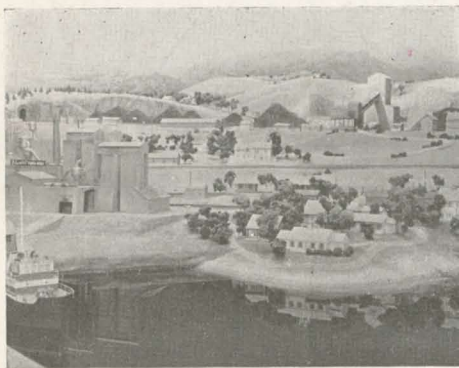


## RAILROADS AT WORK

*(Continued from Page 3)*



A View of the Mountain with a Pleasure Resort Near the Summit and the Streamlined Train Speeding Across the Scene.



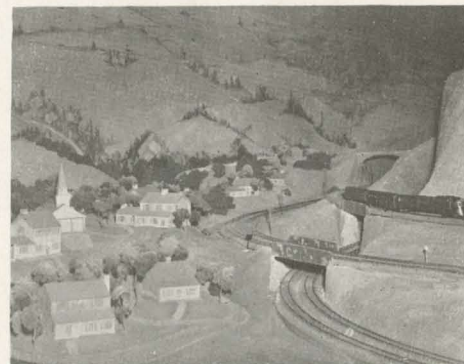
In the Center Is the Operating Coal Tipple with a Grain Elevator and Car Ferry in the Left Foreground.

the colorful illuminated signals, the floodlighting of yards, just as in night operation in life. Comes dawn and gradual daylight with train activity increasing as the day advances. Most of the demonstrations are naturally carried on in daylight and, for the convenience of spectators, revolve around the central terminal. There they see the arrival and departure of trains, local and express; passenger trains made ready for the run, the road engines handled over a loop back and forth to the roundhouse; freight handling through the receiving and classification yards in specific operations. They see inbound freight, for instance, classified four ways and reassembled for another run. And in order that they may follow these operations more easily, the cars for the several runs are painted in different colors. Every standard type of freight car is seen in these operations—hopper, lumber, tank, flat, gondola, box, refrigerator, container and caboose.

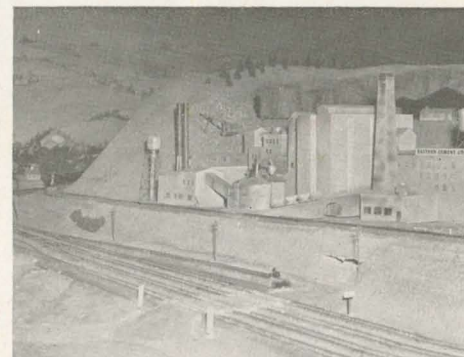
Other features include an operating funicular railway; industrial plants, complete with sidings, to show the handling of grain, food, steel and livestock; a complete oil refinery, power plant and cement plant.

Dramatic to the last, the finale comes with returning dusk, with light seen coming on gradually in cities and towns and on the trains, while the coal loaded steamship heads out to sea, its course pointed by lighted beacons.

Paul Penhune, railroad engineer, is the designer and director of this Exhibit.



Streamliner Speeding Through the Picturesque Mountain Setting.



A Typical Industry: The Cement Plant with Its Adjacent Railroad Sidings.



## INTERESTING FACTS REGARDING RAILROADS AT WORK



Tracks at Night.



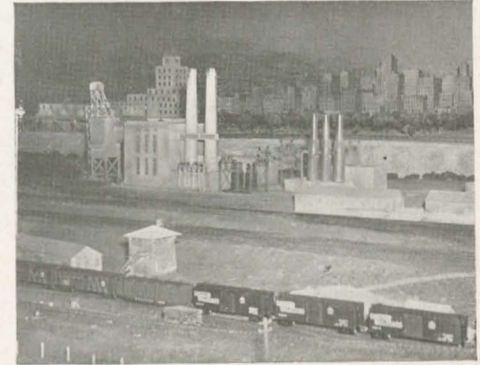
A Modern City Showing Elevated Suburban  
Railway Structure.

This stupendous spectacle comprises some fantastic figures.

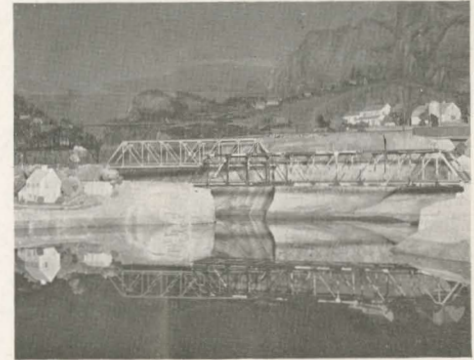
To lay the miniature trackage 70,000 tiny ties and 280,000 tiny spikes were used. On the diorama itself are 7,000 individual trees and over 1,000 individual buildings, each building proportioned in such fashion as to provide proper perspective. Some 250 tiny lights are used in the buildings to give the fairy-land effect during the night period. Over 7,000 gallons of real water are used in the waterways.

The rails were specially rolled to achieve maximum hardness and wearing qualities. To build this show some 50 contractors contributed engineering talent and skill in assembling all the details that such a gigantic show must, of necessity, involve for its completion. A single locomotive involved the assembling of over 250 individual parts, castings, etc., while the rolling stock is of such a complicated nature as to require special construction in the trucks to prevent the passage of electricity from one wheel to another. All rolling stock has been equipped with special ball bearing in order to make them as free rolling as possible. These cars are so free in operation that they will roll on so slight a grade as  $\frac{1}{2}$  of 1%.

The lighted trains necessitated the design of special storage batteries which have never before been made. Each train, therefore, has its own electric lighting supply on the train itself, and it does not pick up current for lighting from the track. The signal system contains some 500 tiny lights, red, amber and green, the signal masts and details designed especially for quick replacement and with a view to maximum visibility to the audience. The ships that you see apparently sailing over the water areas are manipulated by an intricate mechanism below the surface of the water, so cunningly concealed as to be unobserved by the spectators.

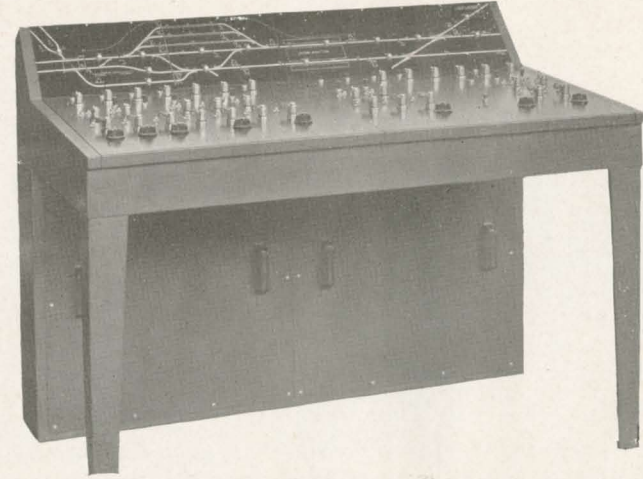
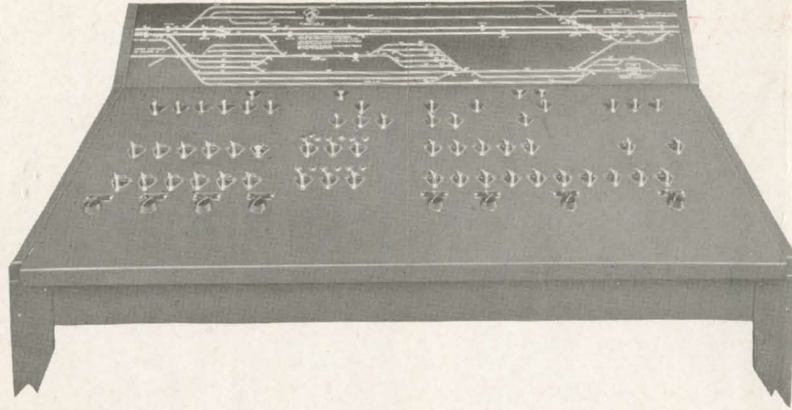


The Power Plant and Yards with the City in  
the Distance.



Railroad Bridges Crossing the River of Real  
Water.





## **SIGNAL INTERLOCKING AND CONTROL SYSTEMS**

Designed, Developed, Engineered, Manufactured and Constructed by  
**UNION SWITCH & SIGNAL CO. and the GENERAL RAILWAY SIGNAL CO.**

SWISSVALE, PA.

Automatic Block Signal Systems  
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ROCHESTER, N. Y.

Centralized Traffic Control System  
 Classification and Receiving Yard Controls  
 Train Propulsion Controls  
 Coal Tipple and Car Dumper Controls  
 Car Uncoupler, Retainer and Turntable Controls  
 Timed Station Stop Controls

Highway Grade Crossing Protection



# OTHER PROMINENT FEATURES

## RAILROAD WORLD'S FAIR EXHIBIT

### BUILDING THE RAILROAD

The exhibit of the Railroad Equipment and Supply Industries, located in the great dome of the building, is a graphic demonstration of the actual construction of railroads and railroad equipment from forest clearing for a right-of-way to the completed system. This exhibit is presented on a huge animated cyclorama, 80 feet at the base and 28 feet in height. From a spiral ramp built around it, spectators may follow, step by step, the various operations that go into the building of a railroad. The ramp leads directly into the interior of the "mountain" where further railroad equipment exhibit is on display. Leonard Outhwaite is the designer and director of this exhibit.

### TRACK EXHIBITS

Include the newest foreign and American trains and locomotives. Among the foreign exhibits are Great Britain's crack flyer, the "Coronation Scot"; an Italian de luxe electric train complete, and two giant Canadian locomotives. E. G. Budd and the Pullman Company show their latest equipment in the American exhibits. In the "yard" specially reserved for them are located a score of historic locomotives and coaches not used in the pageant.

The Thriller among the outside track exhibits is the super locomotive—largest steam locomotive ever built—140 feet in length and weighing 526 tons. Mounted on a roller bed, this locomotive runs at high speed continuously, providing one of the sensations of the entire World's Fair.

### RAILROADS ON PARADE

This mighty pageant of transport history is another feature of the World's Fair Railroad Exhibit that must not be missed. It is an actual stage presentation in story, song and spectacle of the development of American transportation from pioneer days to the latest stream-lined de luxe trains of today. In 16 scenes, in actual stage settings and costumes of the various periods, 250 actors and actresses, 50 horses and a score of old time locomotives, covered wagons, coaches and early watercraft re-enact the part they played in the glorious past of transport history. It is performed on a mammoth out-door stage 250 feet wide and 100 feet deep, before an amphitheatre seating 4000. Edward Hungerford is the author and producer. Kurt Weill, well known Broadway composer, has written the music for it. Harry Horner has designed the stage sets and costumes, and Charles Alan has staged it. Performances are at 2:15, 4:15, 7:15 and 9:15. General admission, 25 cents.

### CHILDS RESTAURANT

The famous Childs have a restaurant in the Railroad building, with a seating capacity of 1200, which patrons will find a convenience. A la carte service at all hours. No advance in prices.



LONG ISLAND RAILROAD  
WORLD'S FAIR STATION

