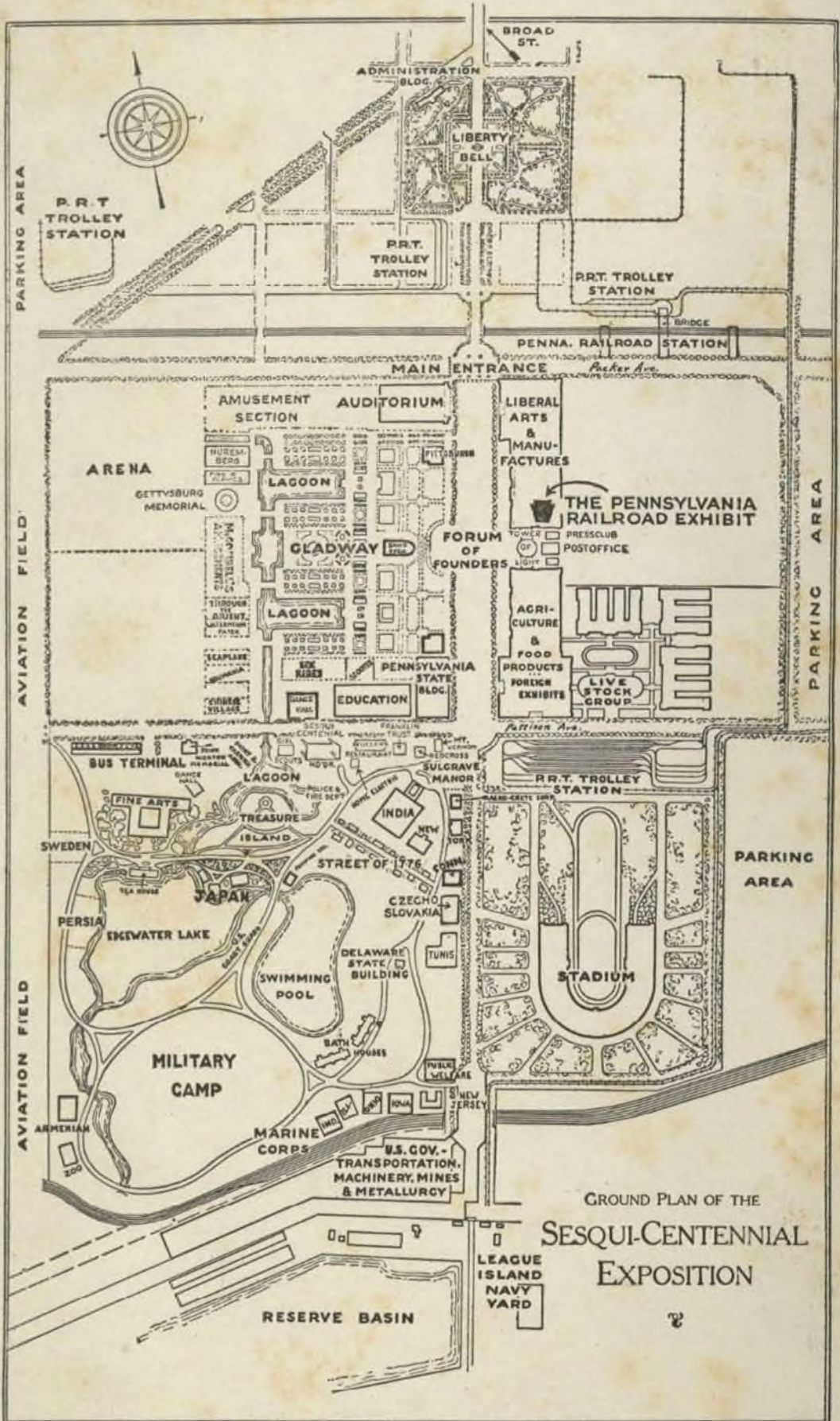


The
BROADWAY
of
AMERICA'S
TRANSPORTATION
SYSTEM





GROUND PLAN OF THE
**SESQUI-CENTENNIAL
 EXPOSITION**

The
Pennsylvania Railroad

at the

SESQUI-CENTENNIAL

INTERNATIONAL EXPOSITION

PHILADELPHIA



JUNE 1 TO DECEMBER 1, 1926

The
Pennsylvania Railroad

General Offices

Broad Street Station, Philadelphia

W. W. ATTERBURY, President

Eastern Region

Headquarters

Broad Street Station

Philadelphia



Central Region

Headquarters

Pennsylvania Station

Pittsburgh

Western Region

Headquarters

Union Station

Chicago

THE PENNSYLVANIA RAILROAD has planned and produced conspicuous exhibits for previous important expositions held in various cities in the United States. These exhibits, without exception, have constituted tangible evidence of the progressive policies which have distinguished the Company's growth and development. They have also borne striking witness to the management's deep appreciation of the public obligations imposed by a railroad's mission, as well as to the Pennsylvania Railroad's traditionally liberal attitude with respect to diffusing among other railroads information upon the Company's many mechanical and scientific achievements in furtherance of the art of transportation.

Although the Pennsylvania Railroad's cooperation in past exhibitions has always been wholehearted, the management particularly welcomes the opportunity to share in the Sesqui-Centennial at Philadelphia. The City of Brotherly Love, embowered in what William Penn, its Founder, saw and described as early as 1682 as a "Fair Province," has an historic background unsurpassed in significance by any other community in America. It is most appropriate that in this City the completion of One Hundred and Fifty years of American Independence should be celebrated by the people of the United States and the nations of the world.

Destiny made Philadelphia, the largest city of the Colonial period, the stage for many of the most important acts of the Revolutionary drama. The commemoration of these events with a comprehensive exhibition in Philadelphia therefore especially touches the imagination of the Pennsylvania Railroad's official family and Board of Directors. In the city of Philadelphia are located the corporate and executive headquarters of the Pennsylvania Railroad. The General Offices have always been in Philadelphia and from these headquarters the affairs of the

railroad, now rendering a service of truly national scope and importance, are administered. The principal executives of the Pennsylvania Railroad System, a large majority of its directors, and many thousands of its employes live in Philadelphia or in the Philadelphia district.

Keynote is Simplicity and Dignity

The Pennsylvania Railroad exhibit space occupies approximately 5,000 square feet in the southeastern portion of the Palace of Liberal Arts and Manufactures, situated on the left just inside the main entrance. The exhibit reveals a striking departure, both in conception and execution, from those prepared for preceding international expositions.

The keynote in its preparation was simplicity, dignity and a rigid regard for perfection of detail, to the end that a display entirely in harmony with the occasion might be set before the visitors. The motif was found in the designation "The Broad Way" which, in recent years, has come into wide use in referring to the Pennsylvania Railroad's transportation system, much of which contains four parallel tracks and actually is the Broad Way of steel and stone ballast over which so much of the nation's commerce moves. The use of the words "Broad Way" to describe typical Pennsylvania policies also has been established since the name "Broadway Limited" was given in 1912 to the Pennsylvania's deluxe train between New York, Philadelphia and Chicago. Thus we hear of the Pennsylvania's Broad Way of dealing with the traveling and shipping public, its Broad Way of adjusting disagreements between management and employes, its Broad Way of pioneering in the technical and mechanical phases of railroading, and its Broad Way of sharing the fruits of its experiments and investigations with other railroads for the general advancement of the

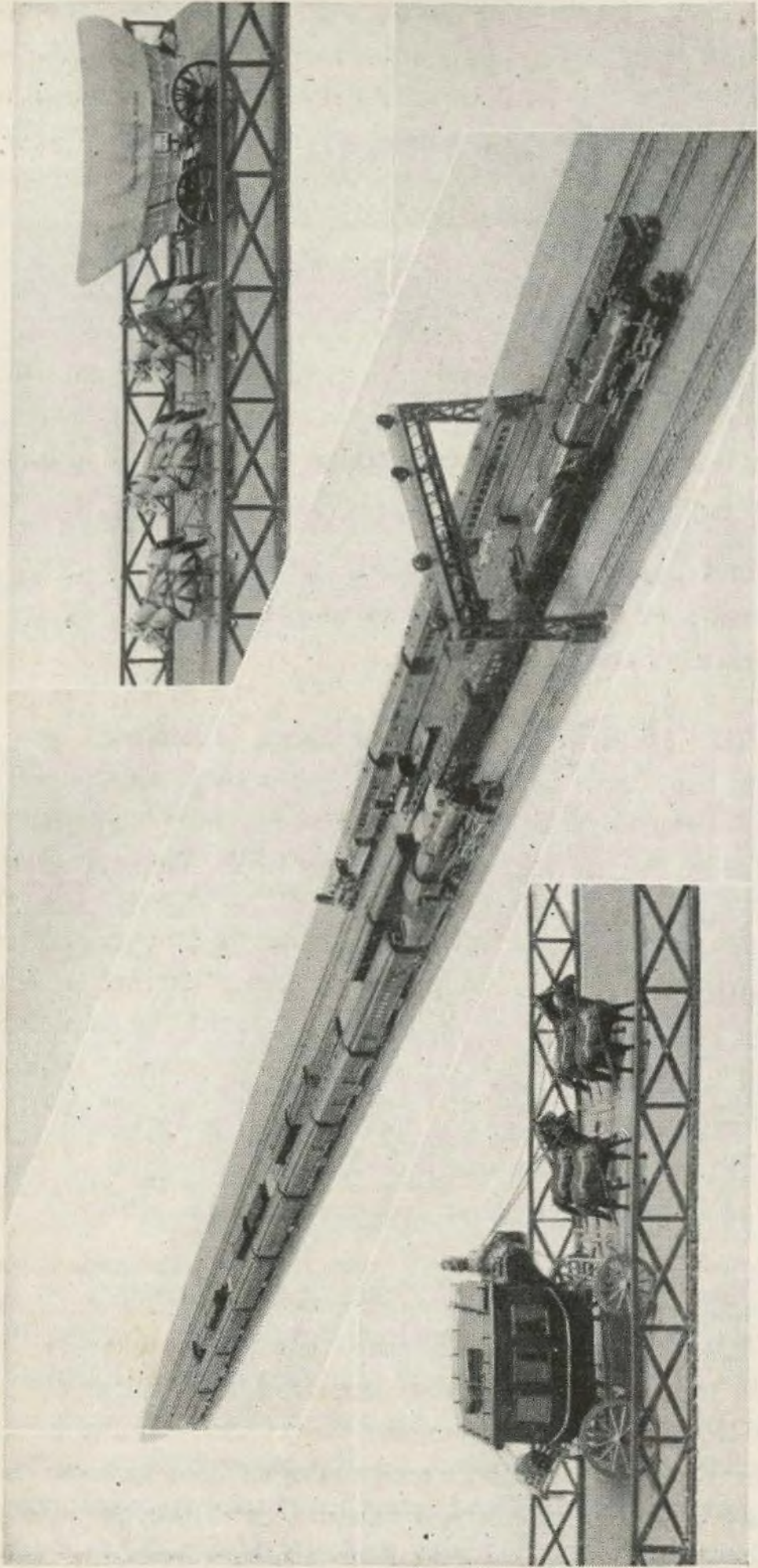


Hell Gate Bridge

science of transportation. The Broad Way is the Pennsylvania way—a broad-minded, unselfish attitude on matters involving the interests of the company, of its competitors and of the public.

The preparation of the exhibit, therefore, was approached from an educational and artistic viewpoint, which lifted the task definitely above anything suggestive of a mere ostentatious advertisement of the Pennsylvania Railroad. The exhibit seeks to indicate the important mechanical developments of recent years in rail transportation, and to suggest, incidentally, the Pennsylvania's part in these advances; to bring to the spectator's mind, through models and pictorials, an outline of the evolution of transportation methods and to surround the exhibit with an atmosphere and a setting typical of the period in which American independence was achieved.

The main piece of the exhibit is a painting, on a canvas twenty by one hundred feet, which presents in exact dimensions a side view of a Pennsylvania Railroad steel passenger coach. This car typifies the acme of present-day development in modern passenger equipment, suggests the comfort and safety in which passengers now ride on high speed trains and, by inference, raises a



Model of Stage Coach.

View of Miniature Railroad and Model Trains.

Model of Conestoga Wagon

comparison of steel cars with the wooden coaches of another day. The painting affords an opportunity for visitors to study in detail a full-side view of a coach, the graceful lines of which, suggesting beauty, speed and strength, are perhaps not often seen by the traveler.

First to Adopt Steel Cars

The Pennsylvania was the first railroad in the United States to adopt steel cars as standard equipment and was the pioneer in the experiments and tests that resulted in their wide-spread use. The Pennsylvania discontinued the construction of wooden coaches in 1906.

All-steel construction also is used for dining cars, combined passenger and baggage, combined passenger, baggage and mail, refrigerator, express and mail cars. The first steel box car also was designed by the Pennsylvania in 1912, and it has been adopted as standard.

Another painting, in a frame 10 by 30 feet, appears as an insert in the center of the reproduction of the steel passenger car. It is a perspective view of a typical section of the Pennsylvania's standard four-track main line, with freight and passenger trains moving in both directions. The landscape is devoted to seashore, country, mountain, urban and industrial scenes, symbolizing the various kinds of territory touched by the company's lines, and depicting the broad character of the transportation service provided by the Pennsylvania.

Immediately in front of these paintings is a miniature reproduction of the standard Pennsylvania Railroad four-track roadbed. The tiny railroad is sixty-nine feet long, and on its tracks are operated, continuously, four trains. The locomotives and cars of one passenger train and one freight train are reproductions of present standard Pennsylvania Railroad equipment, and the two others are made up of engines and cars of the types in use more

than fifty years ago. Thus through contrast is the remarkable development achieved in this phase of railroading visualized for the spectator.

Equipment in Model Trains

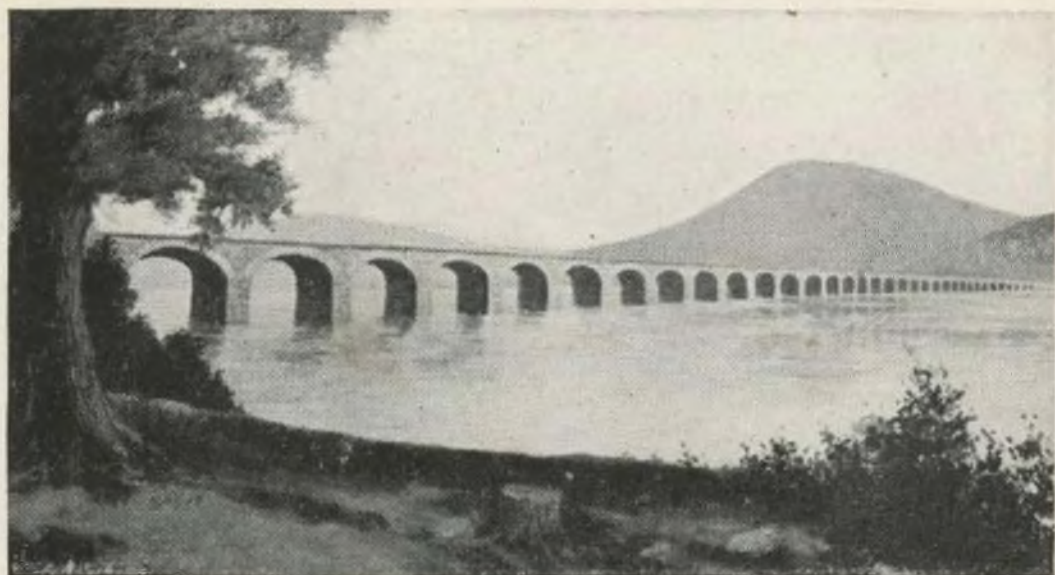
The effect is further heightened by running the model trains at different rates of speed, and extreme care was exercised to maintain in true proportion the speed ratios among trains of these classes in actual operation.

For example, the modern passenger train traverses the sixty-nine feet of visible track in twenty-three seconds and the passenger train of the early sixties completes the same journey in forty-six seconds. The modern freight train passes over this model road in thirty-five seconds while the early freight train requires sixty-nine seconds to travel the same distance.

The modern passenger train model is made up of a locomotive and eight steel cars representing the types of equipment now in use on the Pennsylvania Railroad. The train, which is 22 feet long, has a mail car, baggage car, combined car, three steel coaches, dining car and a Pullman car. It travels at a speed of three feet a second.

The modern freight train model is made up of the latest type freight locomotive, 16 freight cars and a cabin car. The train includes various types of freight cars, as follows: Three high capacity steel hopper coal cars, three steel box cars, two stock cars, two refrigerator cars, two steel gondola cars, two wooden side gondola cars, two steel flat cars and the cabin car. The total length of the freight train is 25 feet, and it travels at the rate of two feet a second.

The old-time passenger train, which is typical of the period between 1855 and 1865, is composed of an eight-wheel American type locomotive, a mail car, a



Stone Arch Bridge over Susquehanna River at Rockville, Pa.

baggage car and two coaches. The total length of the train is eight feet, and it travels at a speed of $1\frac{1}{2}$ feet a second.

The early period freight train is made up of a ten-wheel locomotive, two box cars, an open top stock car, two four-wheel coal cars and two eight-wheel coal cars. The train is seven feet long, and it travels at the rate of one foot a second.

This entire unit of the exhibit is $\frac{1}{32}$ of actual size and, within the limitation thus imposed, the roadbed, crossties, rails, rolling stock, automatic signals and bridges are reproduced with utmost fidelity to accuracy of details of design, size and operation. This care is notably illustrated in the operation of the automatic position-light signals and the proper functioning of all movable parts on engines and cars. The smoke from the locomotive stacks, presenting such a realistic effect, is produced from specially prepared ingredients.

It may be interesting to mention here that a standard section of main line roadbed on the Pennsylvania is constructed as follows: A bottom layer of 12 inches of cinders, on top of which is placed a bed of 18 inches of trap rock ballast. First quality cross ties, spaced 20 to a 33-foot rail, are imbedded in the ballast. On each



Proposed Pennsylvania Station Philadelphia

cross tie is placed a tie plate, on which the steel rail, weighing 130 pounds to the yard, rests. The tracks are laid thirteen feet from center to center.

At each end of the miniature railroad, an old-fashioned bridge, also modeled to scale, spans the tracks, and the trains pass under these bridges when they disappear temporarily. A model of a stage coach, 20 inches long, is standing on one of these bridges, and a model of a Conestoga Wagon, 26 inches long, on the other. They are both made $1/24$ of actual size.

All equipment models used in connection with the miniature railroad were made by selected mechanics in the Company's West Philadelphia shops.

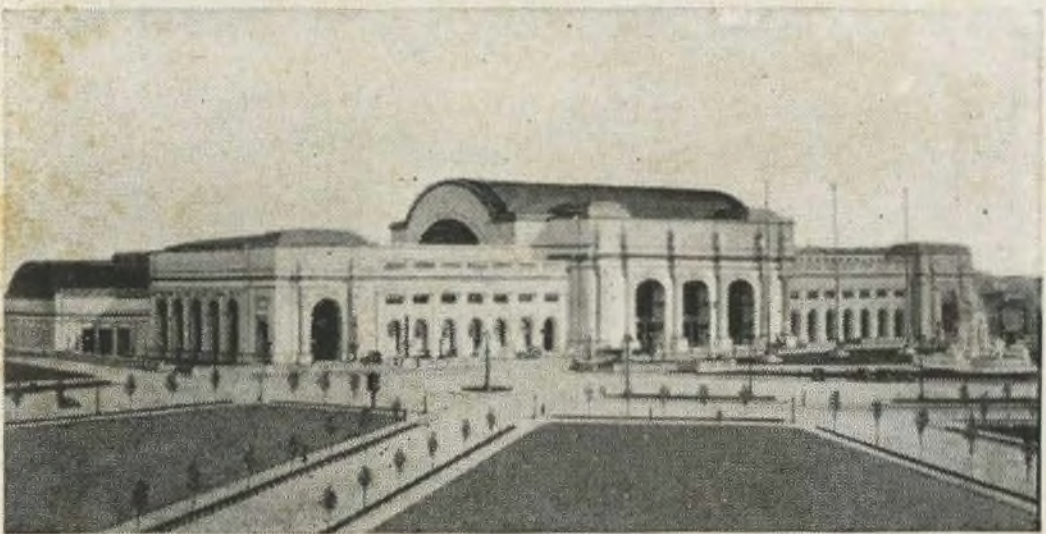


Pennsylvania Station, New York City

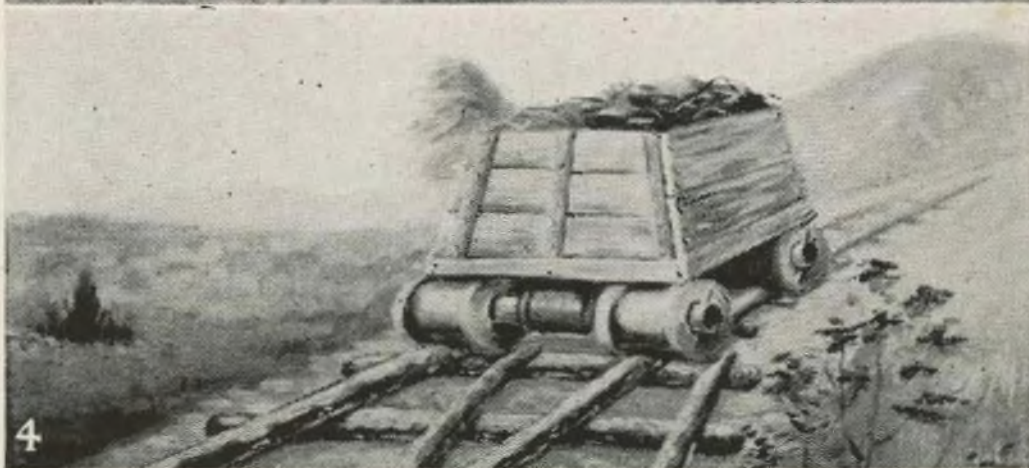
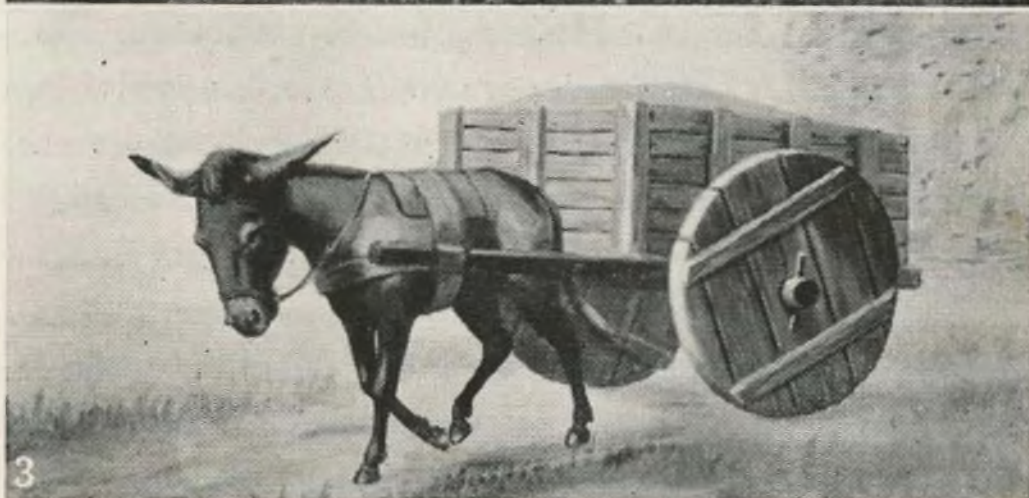


Union Station, Chicago

Six large paintings of widely known Pennsylvania structures are displayed in panels on the partitions at ends of the model railroad. They show the following subjects: The four-track stone arch bridge over the Susquehanna River at Rockville, Pa., the longest bridge of its type in the world; the famous Hell Gate East River Bridge at the junction of the Harlem and East Rivers in New York City, the greatest steel arch in the world; the Union Station at Chicago, completed in 1925; the Union Station in Washington; the Pennsylvania Station in New York City, and the proposed new Pennsylvania Station at Philadelphia, on the west bank of the Schuylkill River.



Union Station, Washington, D. C.



1. Indian Traveaux. 3. Cart on Wheels.
2. Ox-sled. 4. First Car on Wooden Rails.

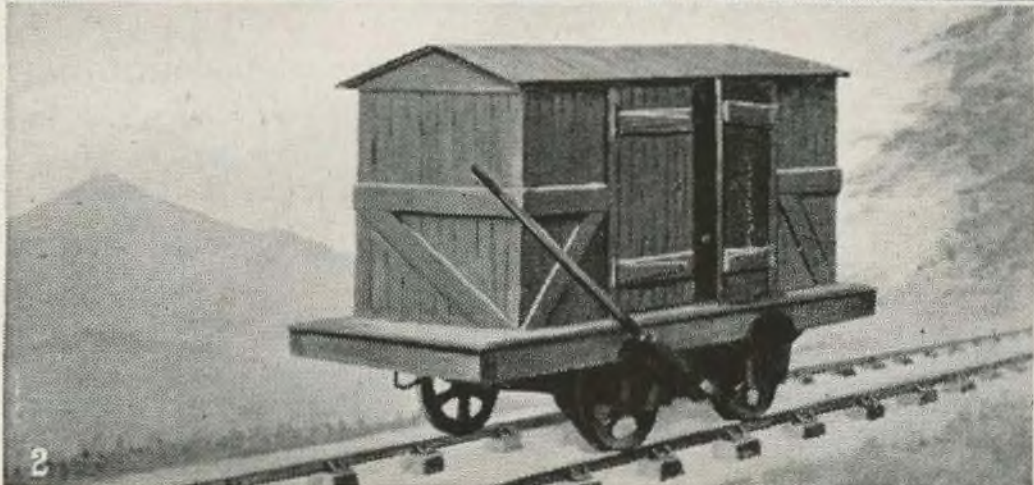
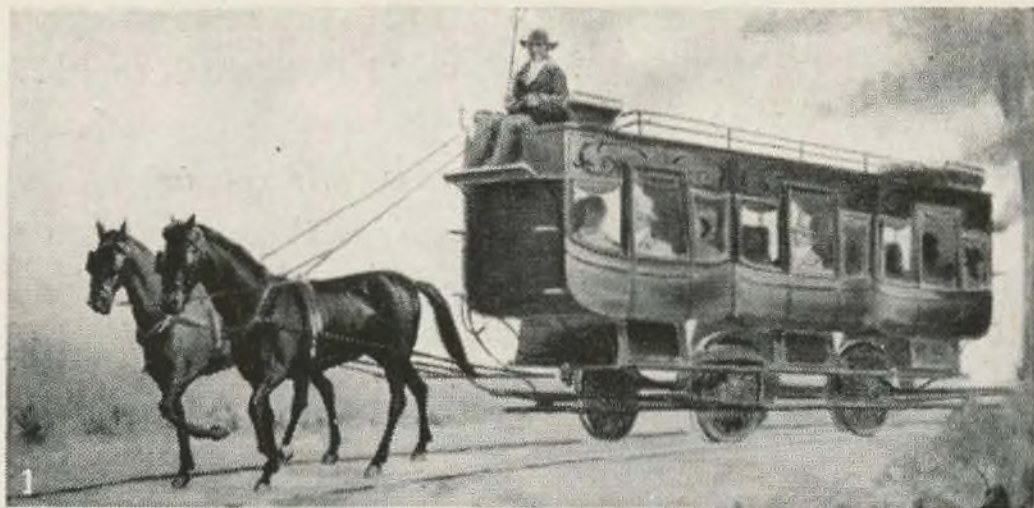
The series of paintings displayed in front of and below the model railroad suggests in broad outline the important steps in the evolution of transportation methods. The first picture goes further back than the era of the stage coach and the Conestoga Wagon, previously mentioned as being represented by models standing on the old-fashioned bridges over the miniature railroad. It shows the Indian *traveaux*, a crude drag which was contrived by fastening tent poles to the back of a horse and permitting them to trail behind the animal.

Evolution of Transportation

A step forward is represented by the ox-sled, which was devised to meet man's requirement for transporting heavier burdens, and this is the subject of the second picture. The use of runners was the distinctive feature of the sled, as compared with the Indian *traveaux*. The other pictures in the series show the first cart on wheels, which were crude devices made by fitting boards together; the first car to move on wooden rails, or tramway, which was the precursor of the railroad; the stage coach equipped with flanged wheels and drawn by horses on a track; an early freight box car; the "John Bull" locomotive and train of two cars, an electric suburban train of multiple-unit cars and a modern passenger train drawn by an electric locomotive. The "John Bull," now in the Smithsonian Institution, was the first steam locomotive used on any railroad which is now a part of the Pennsylvania. It was imported from England and made its first run on the old Camden & Amboy Railroad on November 12, 1831.

All oil paintings in the exhibit are the work of artists employed in the studio of a nationally known establishment.

On tables in the exhibit space are displayed, under glass, models of John Stevens' locomotive, the first in



1. Stage Coach on Rails. 2. Old Box Car. 3. "John Bull" Train. 4. Multiple-Unit Electric Train. 5. Electric Locomotive and Cars.

America to be driven by steam on a track, and of the first sleeping car used in this country.

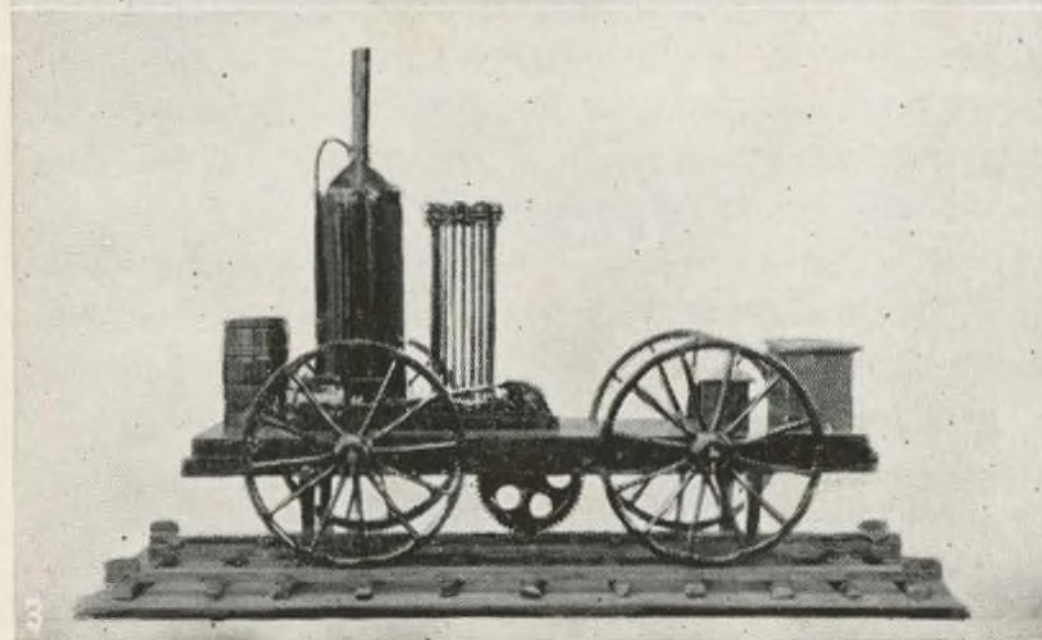
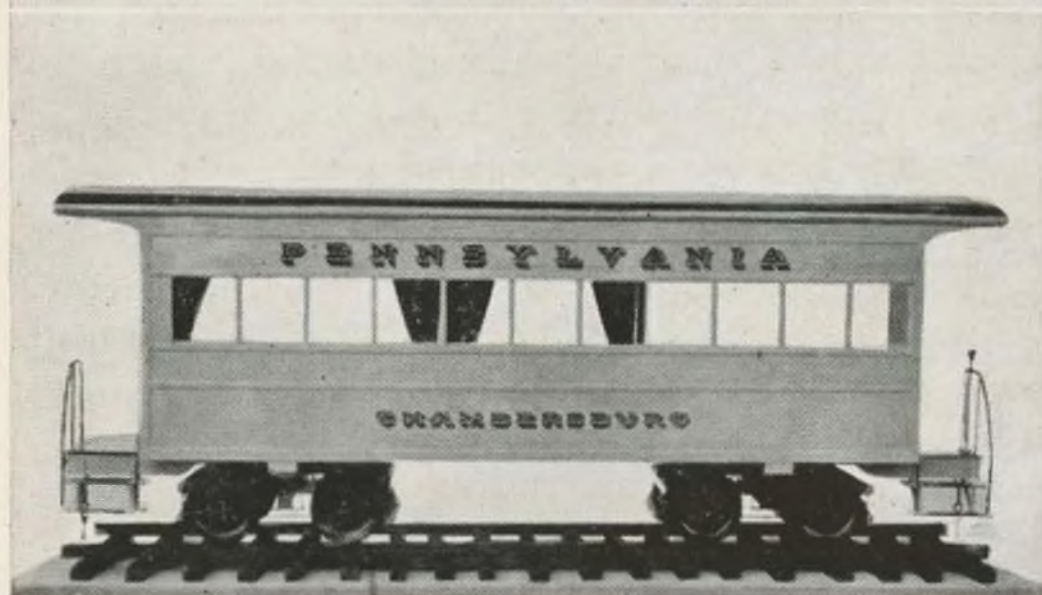
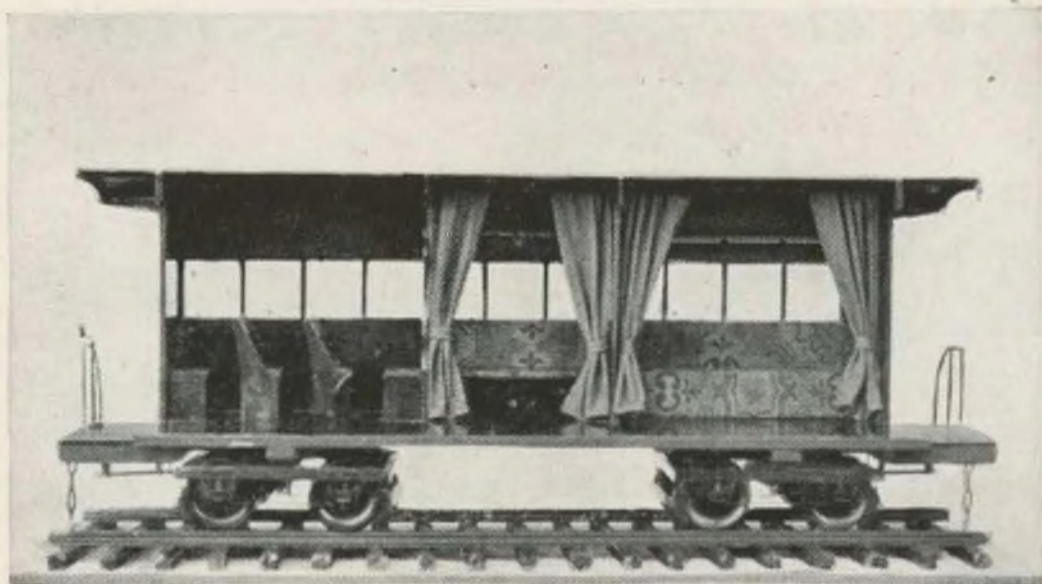
America's First Locomotive

John Stevens received the original charter for the Pennsylvania Railroad Company from the state legislature in 1823. Although he was unable to find the necessary financial support for his projected railroad, he built America's first locomotive on his estate at Hoboken and demonstrated it successfully on a circular track there in March, 1825, in connection with a meeting of the Pennsylvania Society for Internal Improvements. The locomotive had a multi-tubular boiler, and it carried several persons around the circular track at a speed of twelve miles an hour. Stevens designed and built the locomotive solely with the idea of using it on the Pennsylvania Railroad.

The first sleeping car in the United States was placed in service in 1837 on the Cumberland Valley Railroad between Chambersburg and Harrisburg, Pa. This road is now part of the Pennsylvania Railroad and is known as the Cumberland Valley Division.

As soon as the Cumberland Valley Railroad was opened in 1837, its management recognized the need for sleeping car facilities between Chambersburg and Harrisburg, to accommodate the large number of travelers from the West who arrived at Chambersburg by stage coach. These stage coaches usually reached Chambersburg late at night and their passengers were invariably anxious to proceed immediately to Harrisburg, in order to take an early morning train for Philadelphia. America's first sleeping car represented the Cumberland Valley Railroad's effort to meet this emergency and to promote the public comfort.

The first sleeping car was merely a day coach which had been adapted to sleeping purposes to a certain degree.



1 and 2. Interior and Exterior Views of First Sleeping Car.
3. The John Stevens Locomotive.

It was divided into four compartments, with three stationary bunks in each, built against one side of the car. The individual bunks were not separated by partitions or curtains, and no bed clothes were provided. Patrons of this first sleeping car merely lay down on the mattress and used their coats or shawls for covering. The lack of privacy, of course, prohibited women from using the car. A roller towel, basin and water were available at the rear of the car.

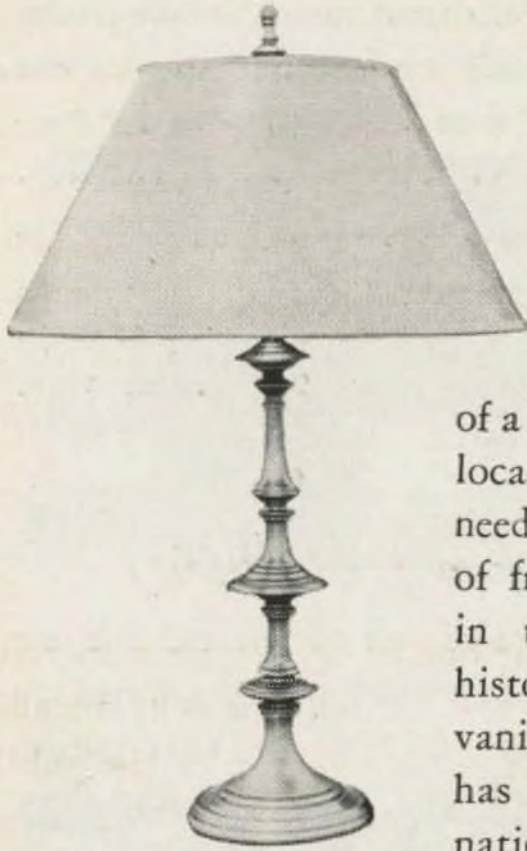
Colonial Period Furnishings

The commodious space in front of the exhibit for the reception of visitors is furnished and decorated to re-create accurately a setting of 1776. In that period floors were generally stippled and, therefore, the floor covering, showing a stipple design, was obtained from a large manufacturer on special order. All cabinet work in connection with the exhibit represents the Colonial period, as do also the desks, tables, chairs and settees, all of which were built of mahogany especially for the exhibit on specifications supplied by the Company. The desks represent the George Washington pattern and the chairs and settees are of the Chippendale ladder-back style. In the center of the space there is also a 30-inch terrestrial globe, which is also in keeping with the studio, drawing-room or office furnishings of the period.

The lamps on the desks were copied from Colonial period originals, as well as the scrap baskets, which are of the woven willow type.

The railing around the exhibit is, of course, of the spindle type.

Visitors to the Pennsylvania Railroad's exhibit are received by demonstrators in uniform, all of whom are employes detached temporarily from their regular duties. Although the exhibit was not planned as an adjunct to



the selling of transportation, it is nevertheless manned by trained attendants who are prepared to give information on request.

The transformation of a little railroad, projected as a local enterprise to serve local needs, into the largest carrier of freight and passenger traffic in the United States, is the history in brief of the Pennsylvania Railroad. Although it has long been distinctly a national institution, with its

lines traversing thirteen states and the District of Columbia, the Pennsylvania, at its inception, was purely a Philadelphia project, organized and financed by citizens of Philadelphia for the specific purpose of protecting Philadelphia's commercial position. The plan was to provide a rail route between the port and the head of navigation on the Ohio River at Pittsburgh. Competition among the citizens of New York, Baltimore and Philadelphia in the early part of the nineteenth century to establish favorable traffic routes to tap the resources and production of the new West was the genesis of the Pennsylvania Railroad.

The company was chartered in 1846 to build a railroad from Harrisburg to Pittsburgh, and when the line was opened in 1852 Philadelphia and Pittsburgh were linked by an all-rail route, as a railroad already was in existence between Harrisburg and Philadelphia.

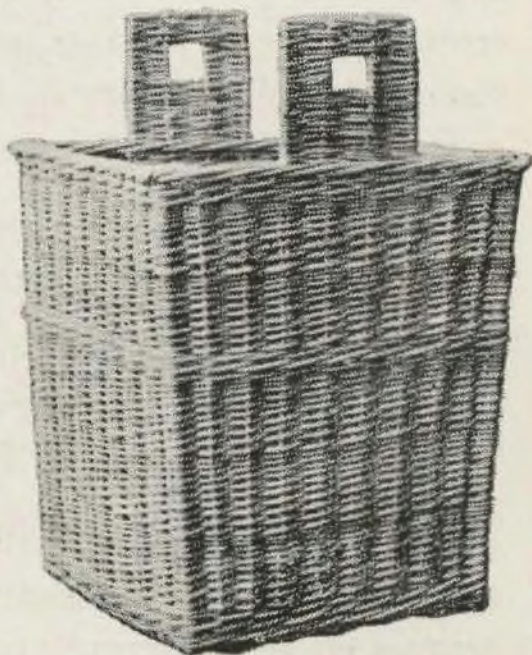
The Pennsylvania Railroad's subsequent development into a national medium of transportation was a gradual growth covering a period of many years. Through

the acquisition of independent roads and the construction of new lines, the Pennsylvania was extended to Washington, eastward to New York and the New Jersey Coast, westward to Chicago and St. Louis, northward to the Great Lakes and southward to various important gateways on the Ohio and Potomac Rivers. The territory thus served by the Pennsylvania Railroad is the most populous and highly developed district in the United States.

Factor in Nation's Prosperity

The system has become one of the greatest contributors to the prosperity of the nation, not only because of its transportation service, which works for the public day and night, but also through the purchase of materials and supplies and improvement work, which aggregated more than \$225,000,000 in 1925; the payment of \$35,000,000 in taxes and the employment on its lines of about 214,000 persons, who received nearly \$375,000,000 in wages last year. The total amount of coal consumed in Pennsylvania locomotives in 1925 was 15,292,000 tons, and 5,506,700 cross-ties and 203,600 tons of new steel were laid on its lines.

The public service performed by the Pennsylvania system last year was equivalent to moving one ton of freight a distance of 35 billion miles and to moving one passenger a distance of 6½ billion miles. The system operates 11,628 miles of line. The total mileage of second, third and fourth tracks is



5,928, with 10,250 miles of sidings. The total mileage of all tracks is 27,806.

The Pennsylvania had 7,347 locomotives, with a total tractive power of 341,390,752 pounds, available for service at the close of 1925; 8,121 passenger cars, with total seating capacity for 338,063 persons, and 271,318 freight cars with a total capacity of 14,506,890 tons. The Company also owns 405 units of floating equipment, including ferryboats, passenger and freight steamboats, tugs, steam and harbor lighters, barges, car floats, motor and gasoline boats, grain elevators and scows.

Stockholders of the company number 140,578, and checks in payment of dividends and interest go to residents in every state in the Union and nearly all foreign countries.

Exposition Committee

All business between the Exposition Association and the Pennsylvania Railroad is transacted through a Pennsylvania Railroad Sesqui-Centennial Committee especially appointed by the Executives of the Company.

The Committee consists of:

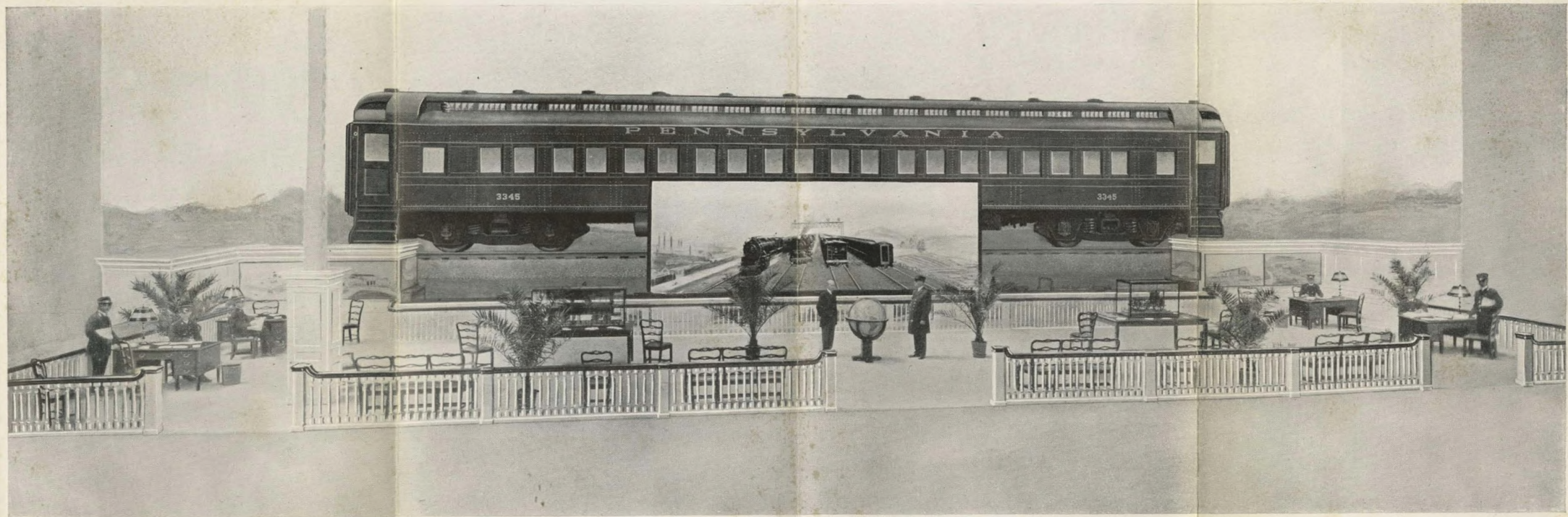
J. O. HACKENBERG, *Chairman*
General Superintendent
Philadelphia Terminal Division

CHARLES H. MATHEWS, JR.
General Passenger Agent at Philadelphia

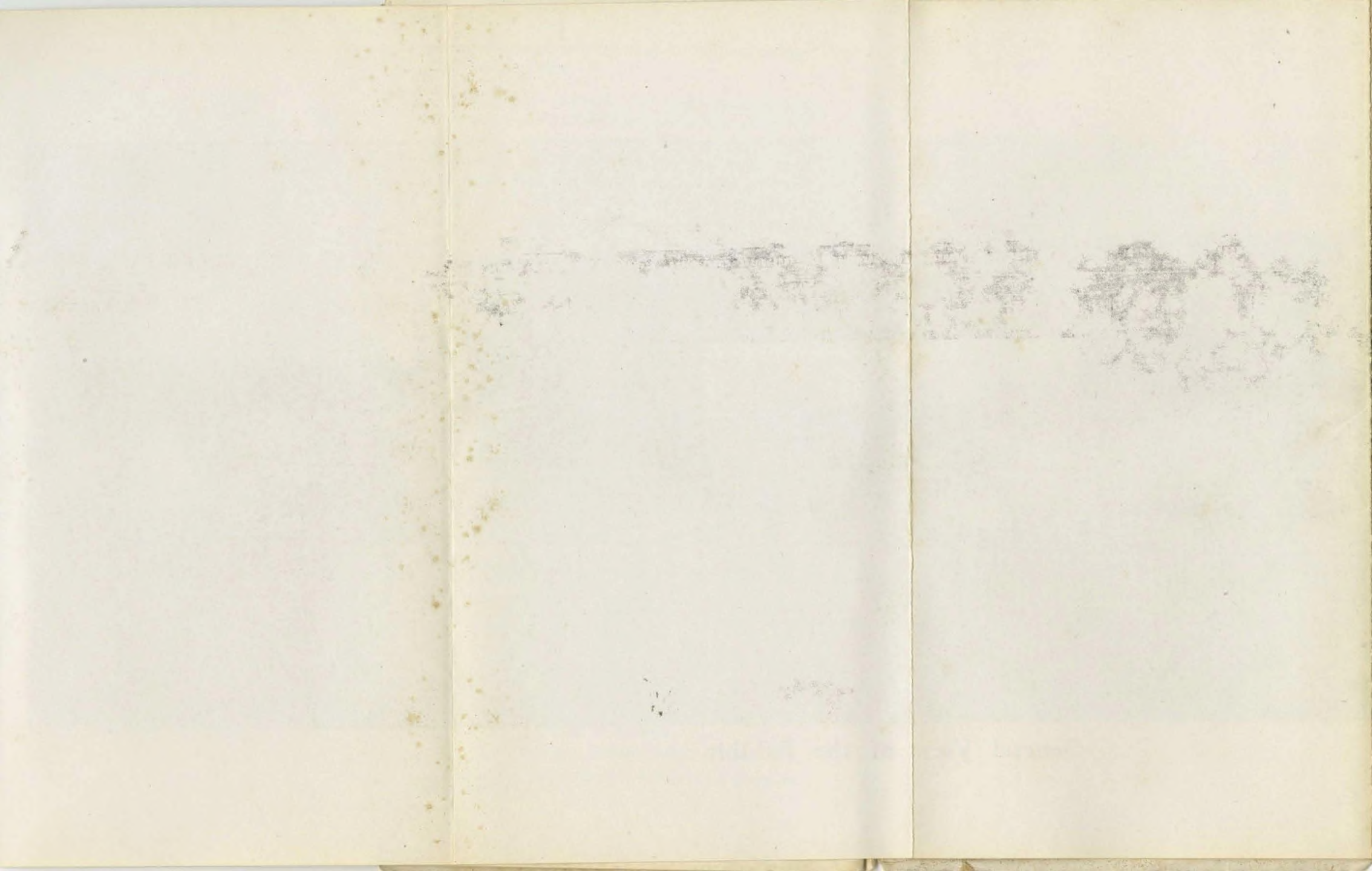
ALFRED J. BALL
General Freight Agent at Philadelphia

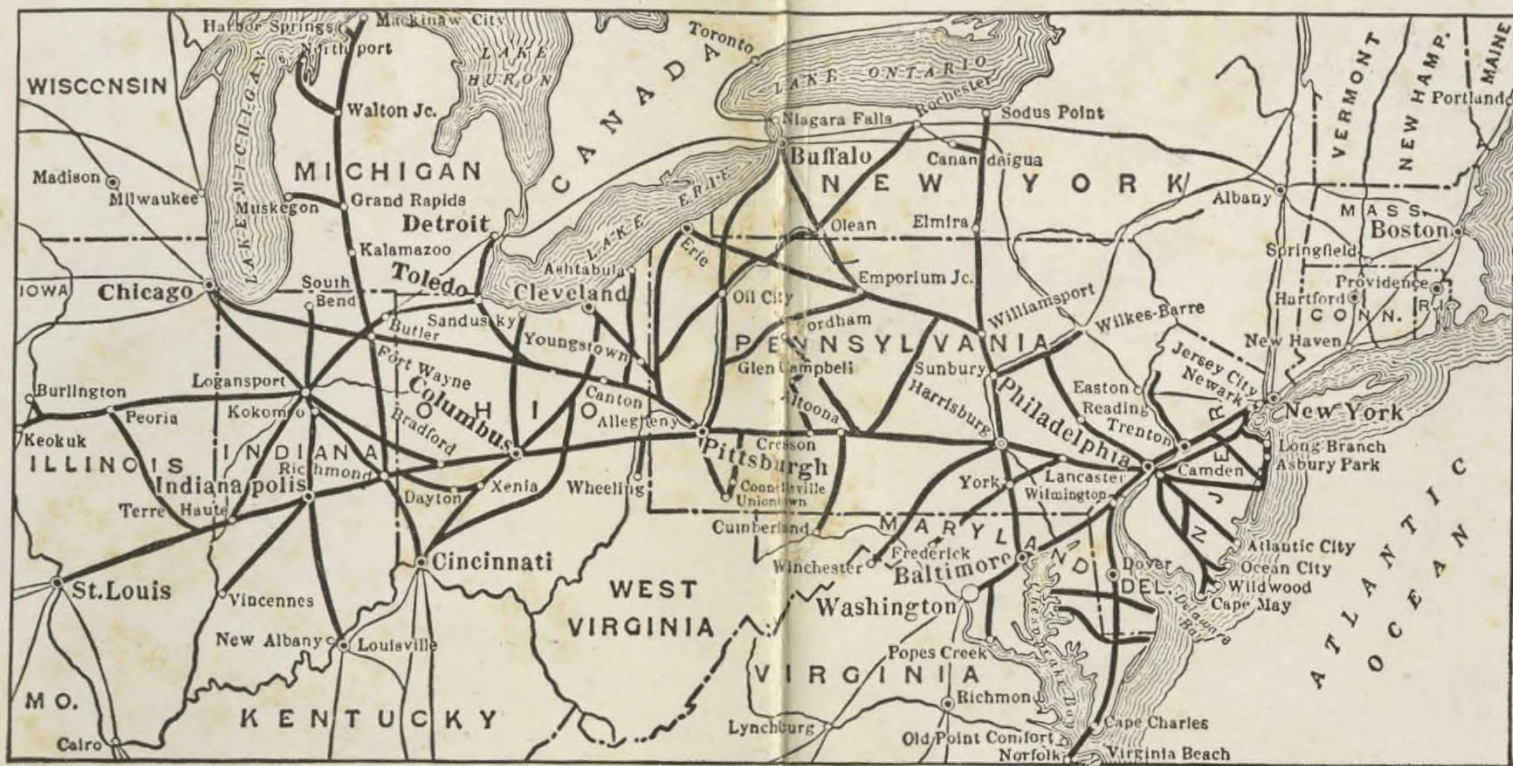
HARRY T. WILKINS
Manager, Railroad Exhibits

The exhibit was prepared by and is in the charge of Mr. Wilkins.



General View of the Exhibit





Outline Map of the Pennsylvania Railroad

The
PENNSYLVANIA
RAILROAD
at the
SESQUI-CENTENNIAL
INTERNATIONAL
EXPOSITION
PHILADELPHIA
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