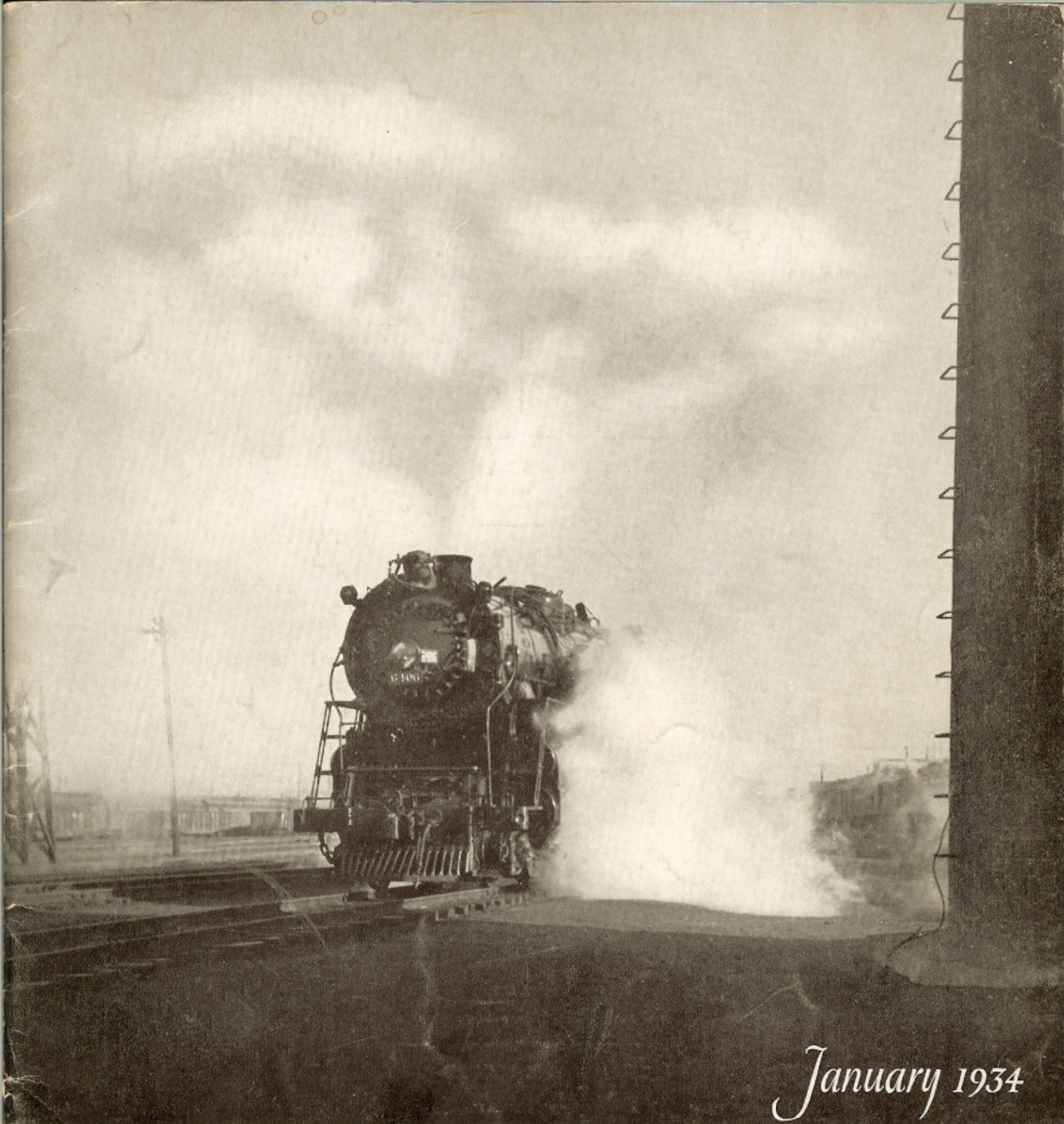


January 1934

BALDWIN LOCOMOTIVES

BALDWIN LOCOMOTIVES

PUBLISHED QUARTERLY BY

THE BALDWIN LOCOMOTIVE WORKS
Philadelphia, Pa., U. S. A.

Editor
MALCOLM K. WRIGHT

Vol. 12 JANUARY, 1934 No. 3

CONTENTS

The cover design shows a Baldwin 4-6-4 Type Locomotive in service on the Chicago, Milwaukee, St. Paul & Pacific. Reproduced from a photograph by Fletcher A. Webster.

Locomotive Number 60000 Goes to The Franklin Institute

THE Franklin Institute of the State of Pennsylvania recently moved from the building on South Seventh Street, which they had occupied for more than one hundred years, to their new home on the Parkway in Philadelphia.

The new building houses one of the few planetaria in the United States and also a scientific museum which will contain a valuable collection of ancient and modern machines and models of all kinds. The exhibits will be in line with the original purpose of the Institute which, in the words of the charter of 1824, was founded "for the promotion of the Mechanic Arts."

A portion of the museum is devoted to railroads and contains models of both English and American locomotives of the early days. Included in this group is a model of *Old Ironsides*, the first Baldwin locomotive, built in 1832. A number of full-size locomotives are also shown, and the collection will eventually include the *Conestoga*, built in 1844 for the Reading Company; a four-wheeled, saddle-tank industrial locomotive of a type used about 1866; the *Pioneer*, a wood-burner used on the Cumberland Valley Railroad (now a part of the Pennsylvania System) from 1851 to 1890, and the *Rocket*, one of the first locomotives used by the Reading Company.

The *Rocket*, named after George Stephenson's famous machine, was one of seven locomotives built by Braithwaite and Millner, in London, and shipped to America in 1838. It served the Reading for 41 years, during which time it ran a total of 310,164 miles. The original firebox was suitable for burning only wood or coke, but in 1846 it was reconstructed so that anthracite coal could be used. The *Rocket* was undoubtedly one of the first locomotives to use this fuel.

As an example of a full-size modern locomotive, the Institute secured locomotive number 60000, built by The Baldwin Locomotive Works in 1926. It was installed in the new museum in September, 1933.

Number 60000 is an experimental, three-cylinder compound, 4-10-2 type locomotive with a water-tube firebox. The total weight of the engine is 457,500 pounds, while the engine and tender together weigh 700,900 pounds, including fuel and water. Although still the property of The Baldwin Locomotive Works, this locomotive was used experimentally on the lines of the Pennsylvania Railroad; Baltimore and Ohio; Chicago, Burlington and Quincy; Atchison, Topeka and Santa Fe; Southern Pacific, and the Great Northern.

A portion of one of the museum walls was left open so that this modern giant could be

Locomotive Number 60000 with the New Benjamin Franklin Memorial and Franklin Institute Building in the Background

The Stack of Number 60000 Towering Above the Second Stories of the Houses on Vine Street

moved into the building. Getting the locomotive to the museum was a problem, as the nearest railroad line is about four city blocks from the building. It was necessary to move the locomotive through the streets in the heart of Philadelphia and this work was done by the John Eichleay, Jr., Company, who make a specialty of moving buildings and other bulky objects.

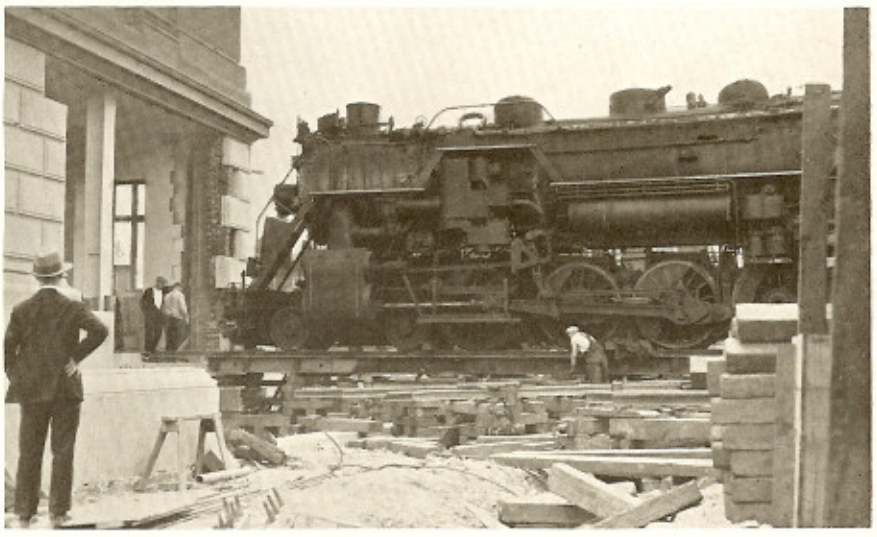
The locomotive and tender were run from the railroad track directly on to tracks mounted on cradles or platforms constructed of steel beams. The wheels were then blocked and secured to the cradles so that they could not turn. Planks were laid in the street and on these a section of double track was laid using wooden cross-ties and steel rails. The cradles were then moved along this temporary track on steel rollers similar to those used for moving houses.

Progress was necessarily slow and it required the better part of a week to complete the job. The cradles were pulled slowly along by means of a motor truck until the end of the track was reached. The track was then taken up behind the load and relaid in front ready for another move. It was necessary to cross several main streets which carried trolley lines in addition to heavy automobile traffic. These points were traversed late at night or in the early morning hours when travel was at a minimum.

All water and fuel had been removed at the start, and this reduced the weight of the locomotive to about 210 tons and that of the tender to about 56 tons. At first thought it would seem that these weights would still be too great for the paving of a city street, but the cradles and the planking distributed the strain so that it was no greater at any one point on the street than the strain imposed by a heavy truck.

A special flooring was built to support the locomotive and tender in the museum. The foundation of this section is entirely separate from the rest of the building. The support under the track consists of six types of bridge construction put there for experimental purposes. They represent steel web arch, steel web girder, steel lattice girder, reinforced concrete arch, single-hinge reinforced concrete arch, and a three-hinged reinforced concrete arch.

After 60000 was in place, tests were made, using specially designed testing apparatus, to show the effect of the locomotive weight on each type of bridge construction.



The Locomotive About to Enter its New Home