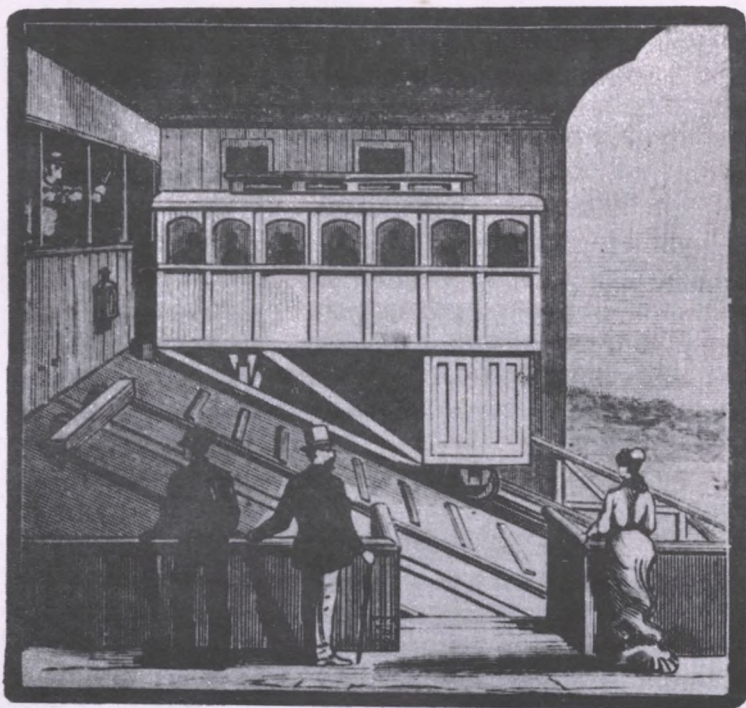


THE DUQUESNE INCLINE

PITTSBURGH, PA.





The Upper Station in 1880

Background

When the Duquesne Incline was opened to the public in May 1877 it was one of four such inclined planes climbing Mt. Washington, carrying passengers and freight to the residential area that had spread along the top of the bluff. Originally known as Coal Hill, the mountain itself had supplied fuel to the early settlers at the Point, the garrisons at the fort, and eventually to the local industries that appeared along the riverbanks as the town grew. And the primitive coal hoists that carried coal cars from the mine mouths on the hillside were the forerunners of the more elaborate cars that served as the Rapid Transit of their era.

In the 25 years following the opening of the Monongahela Incline in 1870 at least 17 of these inclined planes were built in the Pittsburgh area; and as the city grew and expanded over the hills that almost surround it, inclines enjoyed great popularity and steady patronage. Speaking of the Duquesne Incline in the autumn

of 1880 *The Scientific American* notes that "on Sundays during the summer 6,000 passengers are carried during the day and evening, the cars ascending and descending as rapidly as filled and emptied."

As the hilltop communities were virtually inaccessible by any other means, many of Pittsburgh's inclines carried horses and wagons as well as foot passengers. All carried some light freight. The meager roads that wound up the steep slopes were barely passable to a team of horses pulling a loaded wagon. An early fare schedule at the Duquesne Incline advises that packages weighing less than 100 lbs. would be carried for 5¢, but "no charge will be made for one ordinary market basket carried by a passenger."

The rates of fare for foot passengers varied from 1¢ to 5¢ among the different inclines, with special commuter rates for regular riders. Well within the memory of present-day riders of the Duquesne Incline was the rectangular yellow commutation ticket with 39 numbers arranged on it to be punched by the conductor, one for each ride. For the 40th ride the passenger surrendered the ticket. It was many years before improved road-building methods and the invention of the electric streetcar and the motorcar gradually lessened the dependence of Pittsburgh residents on the hill-climbing inclines. As late as the 1940's a Yellow Ticket still sold for \$1, netting the Duquesne Incline only 2½¢ a ride. But in spite of these low fares, the inclines have gradually disappeared. As part of the general decline in public transportation, only the Monongahela and the Duquesne Inclines still exist.

Early History

The Duquesne Incline is one of those which follows very closely the tracks of an early coal hoist. Old newspapers indicate the existence of such a conveyance as early as 1854. Residents apparently referred to it as "Kirk Lewis' incline" and located it on the present site of the Duquesne Incline's Upper Station. Grandview Avenue was then the High Street, and the area was just beginning to be converted from farmland to homesites.

This pleasantly-situated acreage was an excellent area to absorb some of the expanding population of the city, but the problem of easy access was still to be solved.

Although plans for a freight and passenger incline are known to have existed much earlier, financial backing was exceedingly hard to find—even the modest sum of \$47,000—and actual construction was delayed. Eventually, of course, difficulties were overcome and the Incline was built. It was opened to the public May 20, 1877. The Duquesne Incline was the first Pittsburgh incline designed and built by Samuel Diescher, the engineer who had become the country's foremost builder of inclines. He was also to design and build most of those that followed.

Facts and Figures

The first structure was part wood and part iron, but it was rebuilt entirely of iron in 1888. The total length is 793 feet, the grade is 58.5 per cent or 30.5 degrees, and the total rise is 400 feet. The lower 360 feet of roadway crosses the Pennsylvania Railroad tracks, and here it is built of 5-foot riveted girders in spans of 60 feet. The remaining portion is constructed of 24-inch riveted girders in 30-foot spans. The gauge is 5 feet, the double trackway is 20 feet wide, and there is 3 feet between cars at the passing point.

The original steam drive was converted to electricity in 1932. Forty years later Westinghouse rectifiers replaced the first electrical equipment, providing a modern, maintenance-free drive system for the Incline. Motion is communicated to the cars by means of a cast-iron drum carrying two 1 $\frac{1}{8}$ -inch steel-wire cables. Each cable is approximately 900 feet long and capable of sustaining a perpendicular strain of 50 tons. The actual working strain is about one-twentieth of that amount.

A safety cable is also in constant use. It passes around a system of sheaves so arranged that should the working cable part, the safety cable will take up the load. A hand-operated airbrake can bring sufficient friction to bear upon the cable drum to stop its rotation as well as the rotation of the sheaves carrying the safety cable.

The single cable drum is 12 feet in diameter and 3 feet 10 inches wide. It has a grooved periphery into which both pulling cables wind. The original cable drum and the original wooden-toothed drive gear are still in use and operate perfectly. Replacement teeth of aged rock maple are on hand to be inserted when needed. The continued survival in good condition of this equipment

is an outstanding tribute to the engineering skills of the designers and builders of the late nineteenth century.

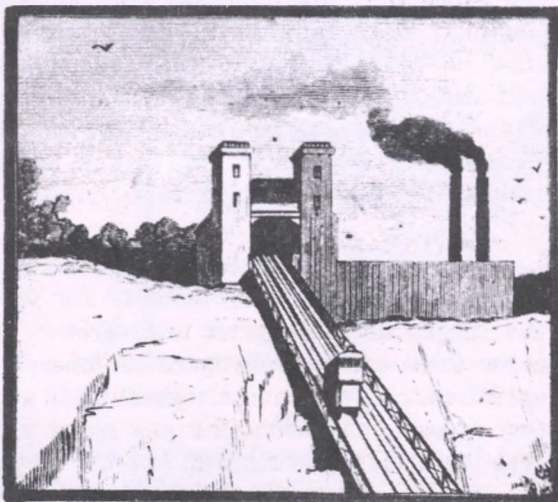
An unusual feature of the Duquesne Incline is the location of the hoisting machinery at right angles with the plane. This method was adopted initially to save the expense of buying an additional piece of real estate. One of the results has been that both working cables are wound on the single, grooved drum.

In the beginning rollers of locust and gumwood were placed at regular distances between the rails to bear the cables in their passage above the ties. Now these rollers have been replaced with small cast-iron sheaves or "idlers," but some of the originals remain in the shop as museum pieces.

Rescue

In November 1962 the Duquesne Incline was closed for repairs. After 85 years of service, the six huge cast-iron sheaves that guide the cables at the top of the slope were badly worn and had to be replaced. The Incline, still under private ownership, had been losing passengers and revenue steadily, and the Duquesne Inclined Plane Company felt that such expensive repairs were out of the question. Accordingly, the Incline was shut down and there its story nearly ended.

But the residents of Duquesne Heights, stunned by the sudden loss of a facility they had long taken for granted, decided to make an effort to save this relic of Pittsburgh's early history and still, for them, the quickest route to downtown. A small group of men representing the community met with the owners and established a working agreement whereby the neighborhood would launch a



fund-raising drive and the owners would consent to the repairing and the re-opening of the Incline if sufficient money was forthcoming.

To raise \$15,000 in a small community of average means, in the middle of winter, concurrent with several other charitable fund drives surely indicates dedication and enthusiasm on the part of the residents. It was truly a community effort; Boy Scouts distributed information pamphlets to every family; smaller boys counted and bundled the \$1 Souvenir Tickets which the women of the community sold from door to door. Shares of stock in the Duquesne Inclined Plane Company were sold for \$100 each. There were bake sales and card parties, and as the fund grew the men of the neighborhood began to make minor repairs and to clean and paint the cars and the station houses. At the end of six months the necessary money had been raised, the new sheaves installed, and on July 1, 1963, the Duquesne Incline was triumphantly re-opened to a jubilant community.

Rehabilitation

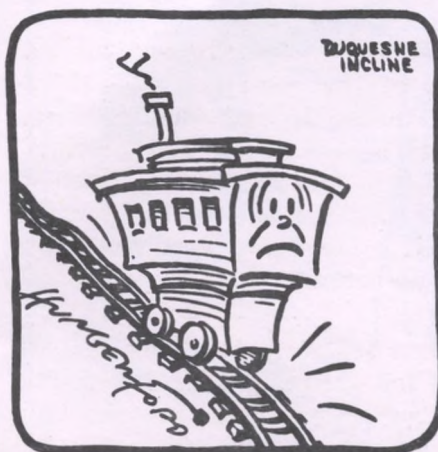
Since that time the support of the community and the entire city—with the generous help of the news and advertising media of the area—has kept the Incline in operation. Shortly after its re-opening the Incline was bought by the newly-created Port Authority of Allegheny County, as required by law. Instead of closing this historic relic, which as yet could not be operated economically as part of the transit system, the Port Authority graciously leased the Incline to its rescuers for a dollar a year.

Today the Society for the Preservation of the Duquesne Heights Incline assumes full responsibility for operating and maintaining the Incline as a non-profit enterprise. Its officers provide daily supervision and overall direction on a voluntary basis—only the operators, conductors and a small staff of maintenance men are on the payroll. Contributions are many and varied, ranging from Westinghouse's donation of \$20,000 (in 1972) to the receipts of the donation box in the Upper Station Waiting Room.

Visitors from all over the world have been added to the regular flow of commuter traffic. Summer and winter, travelers come to absorb the spectacular view of Pittsburgh and to see in the Duquesne Incline a feature of the past which is very old yet basically practical and durable. Visitors account for more than half the Incline rides each year and thus contribute in a large measure to its preservation and restoration.

Much work has been done to restore and rehabilitate the entire operation. The interior of the cars has been stripped of grey paint to reveal the original hand-carved cherry panels trimmed with oak and birdseye maple. The transoms have some of the original amber glass. Much time has also been devoted to the Waiting Rooms, the cable and motor rooms, and to track maintenance and idler replacement.

Unfortunately, ownership of the land under the Incline has remained with the former owners. The Society has become increasingly aware that until it owns this land it does not fully control the Incline's destiny. Therefore, it is continuously seeking the substantial funds necessary for real-estate acquisition.

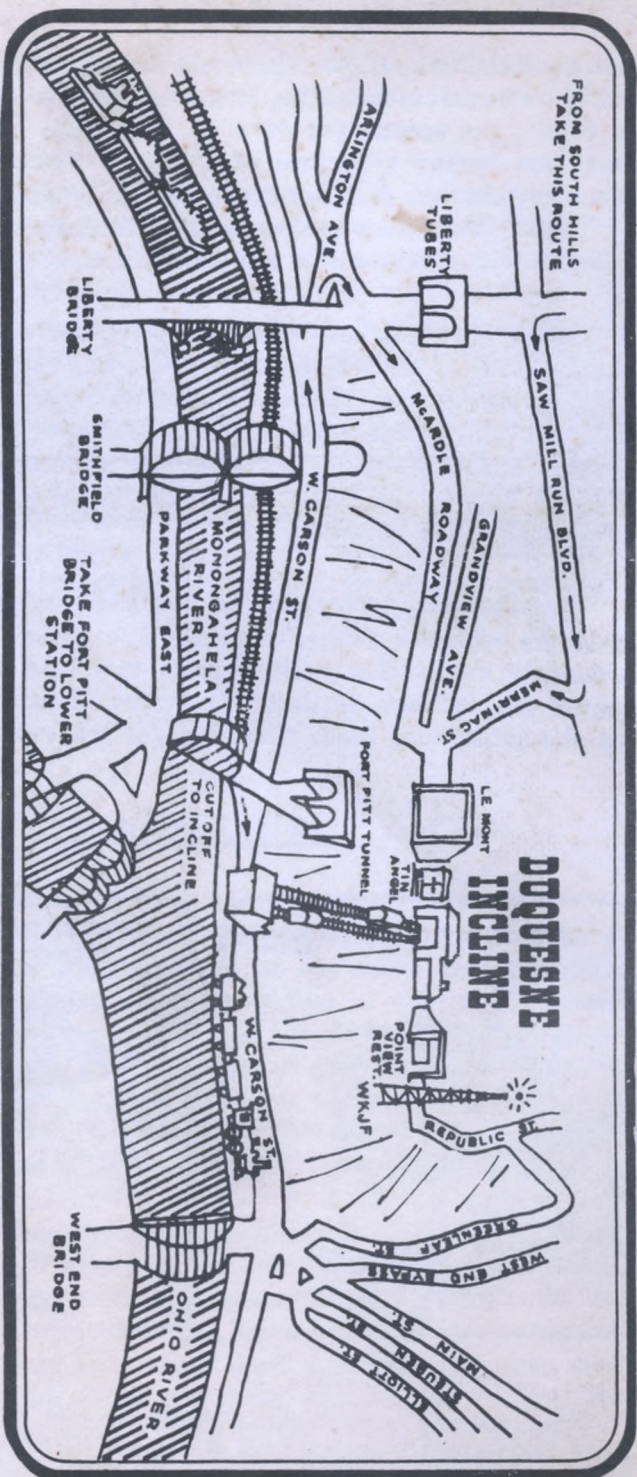


November 21, 1962



July 1, 1963

These cartoons by the celebrated Cy Hungerford appeared in *The Pittsburgh Post-Gazette* to mark the sad closing and the joyous re-opening of the Duquesne Incline. Mr. Hungerford later contributed them to the Society.



THE SOCIETY FOR THE PRESERVATION OF THE DUQUESNE HEIGHTS INCLINE

Dedicated to the preservation of that which cannot be replaced.

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