



## Pittsburgh's Funiculars

Funicular or cog railways for steep city streets are not commonplace. But neither are they outmoded relics of a romantic, bygone age. Many are in daily use, especially in mountainous country. A more practical solution of how to get up and back down again, wherever these funiculars are used, has not yet presented itself—even though the idea of the cog-and-rack railway with counterpoised weights is almost a century old.

The Pittsburgh "inclines," as they are called, carry 2 million fares a year. Built as long ago as 1872, that city's four city-owned funicular railways still meet real and pressing needs.

For the traveler, however, these funiculars have definite romantic interest. The newest of the four was built in 1892. One of them—the Pittsburgh inclined railway, from Bradish Street up to the intersection of Warrington and Arlington Avenues—is said to be the only funicular with a curve in the world. Midway up the hill the railway makes a 65-degree turn.

Besides the Pittsburgh incline, built in 1890, there are the Mt. Oliver funicular built in 1872 and oldest of the four, the Castle Shannon built 1892, and the Seventeenth Street built 1883.

The Pittsburgh funicular has 2,644 feet of track and is the longest of the four. The Castle Shannon has the greatest rise, 469 feet. The Seventeenth Street has the steepest grade, nearly 43 percent.

Operation of the four railways is similar. The railway has two cars, one at each end of a steel rope cable wound around a large steel drum at the top of the incline. As the drum turns, one car goes up while the other comes down. The pull cable is supported on grooved sheave wheels over the entire length of the track.

The steel slope of the tracks makes it necessary to have the downhill side of the car built at a higher level than the uphill, so that the floor will remain horizontal in transit.

Pittsburgh's city funiculars carry freight as well as

passengers. All except the Mt. Oliver incline can take on two vehicles as well as the 20 passengers. The maximum payload is 20 tons; the cars themselves weigh 30 to 35 tons.

No small strain on even modern equipment, this load is protected by a safety cable attached to the cars in addition to the regular pull cable. The safety cable passes around a large sheave wheel anchored at the top of the run. It permits the weight of one car to be balanced against the other, but its chief function is to support them in case a pull cable breaks. All the cables are designed with ten times the estimated strength requirement.

Automatically operated magnetic-type brakes are attached to each drive motor. They can hold the cars in position at any desired point. Motor speed is controlled by the operator at the top of the incline.

No employees are needed on the cars. A conductor at the bottom collects the fares. The conductor and motor operator can communicate by a direct telephone line but also use a system of signal bells.

The fare is 5 cents, either up or down, without transfer privilege to adjoining street car lines, 10 cents with. Tickets are sold in strips of ten for 40 cents. The fare for vehicles depends on the size and weight.

One interesting aspect of these inclined railways is that they are affected by the weather. Heat and cold expand and contract the pull cables. Since both cars must land at the top and bottom simultaneously, the pull cables must be lengthened or shortened according to the temperature, so they need frequent adjustment.

Originally Pittsburgh's city-owned "inclines" were driven by steam engines but today they are electrified, using hoist apparatus similar to that in elevators and mines.

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## Travel to U. S. on Ice

A vast reservoir of potential tourists to the United States is dammed up by currency controls in Australia, New Zealand, and other Pacific areas.

This was the conclusion of H. E. Morley, assistant western regional traffic manager of United Air Lines, recently returned from a 35,000-mile air tour of the Pacific and Far East, the most extensive trip made by a U. S. air-line representative since 1941.

Travel agents contacted by Morley characterized the potential number of tourists to the United States as "unbelievable," but currency restrictions keep the cream of the trade "on ice," Morley found.

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## The Farmer and the Tourist

"What share does our farmer get from the tourist dollar?" asks *Smoke Signals*, monthly newsletter issued by the Wisconsin Indian Head Country, Inc., Eau Claire. Based on Michigan Tourist Association figures, every 100,000 vacationers consume: 87,500 gallons of milk, 2,000 quarts of cream, 125 tons of meat, 85 tons of vegetables, 10 tons of butter, and 4 of cheese. Also throw in the gasoline tax paid by the tourist which means better highways to the farmer, adds *Smoke Signals*, plus the increased purchasing power resulting from the \$75 million annual tourist travel (350,000 visitors in 1948) in northwest Wisconsin's 15 counties.