



TYPE of reading:
TEXT No.:

SKIM-READING
TEXT 1

Choose the correct heading for each paragraph from the list of headings below:

- | | |
|--|---------------------------------------|
| 1) Challenges in building a funicular | 7) Swiss funiculars |
| 2) Definition of a funicular | 8) The first funicular |
| 3) A funicular for commuters | 9) A record breaking funicular |
| 4) A practical solution to reach hillside residences | 10) Modern funiculars |
| 5) A method to help the upper car move the lower car | 11) Increasing operational efficiency |
| 6) How a funicular works | |

Funicular

➤ *Heading №:*

(A) A funicular is a cable railway in which a cable attached to a pair of tram-like vehicles on rails moves them up and down a steep slope. The ascending and descending vehicles counter-balance each other. Funiculars of one sort or another have existed for hundreds of years and continue to be used for moving both passengers and goods.

➤ *Heading №:*

(B) The basic idea of funicular operation is that two cars are always attached to each other by a cable, which runs through a pulley at the top of the slope. Counterbalancing of the two cars, with one going up and one going down, minimises the energy needed to lift the car going up. Winching is normally done by an electric drive that turns the pulley.

➤ *Heading №:*

(C) Early funiculars used two parallel straight tracks, four rails, with separate station platforms for each vehicle. The Swiss engineer Carl Roman Abt then invented a method that allowed cars to be used with a two-rail configuration, by placing a 'passing track' in the middle of the line. This meant that the two cars would use the same track until they reached the middle where the track would split in two directions so the cars could pass each other and then return to the single track.

➤ *Heading №:*

(D) Some funiculars have been built using water tanks under the floor of each car that are filled or emptied until an imbalance is achieved to allow the cars to move. The car at the top of the hill is loaded with water until it is heavier than the car at the bottom, causing it to descend the hill and pulling up the other car. The water is drained at the bottom, and the process repeats with the cars exchanging roles.

➤ *Heading №:*

(E) The oldest funicular is the Reisszug, a private line providing goods access to Hohensalzburg Castle at Salzburg in Austria. The line originally used wooden rails and a hemp haulage rope and was operated by human or animal power. Today, steel rails, steel cables and an electric motor have taken over, but the line still follows the same route through the castle's fortifications. Modern funicular railways operating in urban areas date from the 1860s.

➤ *Heading №:*

(F) Hong Kong's Peak Tram was one of the first funiculars in Asia. It was proposed by Alexander Findlay Smith who presented the idea to the Governor of Hong Kong in 1881. It took three years to build the Peak Tram. Most of the heavy equipment and rails needed for the construction was hauled uphill by the workers, who had no mechanical support. The tram finally opened in 1888, with a maximum grade of 48%, 1.4 km long, and is now one of Hong Kong's major tourist attractions. As a revolutionary new form of transport to Asia at the time, the tramway was considered a marvel in engineering upon its completion.



➤ *Heading №:*

(G) The Scenic Railway at Katoomba Scenic World, Blue Mountains, Australia (which supports multiple tourist attractions such as the Skyway and Cableway), is claimed to be the world's steepest passenger-carrying funicular railway, with a maximum incline of 52 degrees or 122%, with a total incline length of 310 metres. The railway is on an old mining track.

➤ *Heading №:*

(H) In Ukraine, The Kiev Funicular serves the city of Kiev, connecting the historic Uppertown, and the lower neighborhood of Podil up the steep Volodymyrska Hill overseeing the Dnieper River. The funicular was constructed during 1902-05.

➤ *Heading №:*

(I) Private funiculars on steep sections provide easier access from the street to a house than steep paths or steps. They are common in hilly cities, such as Wellington, New Zealand, which has about 300. These have a small car for two to four people permanently attached to a cable from a winch, which runs on an inclined pair of rails (beams) or a single rail at a low speed (0.3 to 1.0 metres/second). They are often called "cable cars" or "lifts" (elevators), e.g., in the New Zealand standard for private cable cars.

Suggested headings:

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