

# The London Underground

*by Samantha Ladart*

"No room, no room!" The cry was heard over the roaring din of the thousands of people gathered at the railway stations for the opening of the world's first underground—the Metropolitan Line. The gloomy chant had a dark effect on those assembled, <1> matching the dark, echoing tunnels that led the trains under the earth. In spite of the cries that the trains were full, the crowds of people who came out to experience riding under the city remained in line, hoping for a ticket. It was Saturday, January 10, 1863, and at 6:00 A.M. the rides began. The public had been anticipating this opening day for twenty-one months, and they refused to be daunted.

The early 19th century was a period of remarkable growth in England. With the onset of the Industrial Revolution, London began the construction of factories. As these factories sprang up, increasing amounts of people began to move from the country-side into London for work. This tremendous increase in the population of the city created an immense demand for public transportation.

The first passenger-carrying railway (above the ground) in London was the London and Greenwich Line, which opened on February 8, 1836, and continued expansion for the next four years. By 1840, the line carried nearly six million passengers and had enlarged its main service lines to the outskirts of London's central business district. Because of the high cost of constructing through built up areas and the extensive property damage, all of the termini were located outside the city. Therefore, in order to get to and from places inside of London, one had to take the omnibus, a cab, or simply walk. <2>

Because of this situation, street congestion grew. In 1855, one witness giving evidence to the Select Committee on Metropolitan Communication claimed that it took longer to get across town than it did to travel from London to Brighton! <3> There was a lack of direct rail services (railroad lines which connected with each other to give a passenger direct access to his destination); the solution to this problem was the idea for a succession of main line stations linked by an underground railway.

This idea was first suggested in the 1830s by Charles Pearson, the City Corporation's Solicitor for London. As overseer of the city's corporations, he recognized the desperate need for a new type of railway. A railway with up to eight tracks running under the New Road was proposed. It seemed to have numerous economic and social advantages. The demand for this type of transportation was so great that there was no need to doubt its financial value. Traffic in the inner city would be relieved, all markets would experience an increase in business because they could be more easily reached by the public, and it fit in with the city's improvement scheme by clearing out the unsanitary slum areas with railway lines. <4> However, the proposal failed. It could not get the necessary financial backing and was refused by Parliament.

In 1852, the City Terminus Company was formed, and the proposal was again placed in front of Parliament. Once again, it failed because of a lack of support. Parliament was extremely conservative about passing such expensive projects regardless of the great advantages which proponents argued would be gained. Finally, in 1853, the Bayswater, Paddington, and Holborn Bridge Railway Company put forth a new proposal for an underground railway which was to run in a different area than proposed by the City Terminus Company's line and would cost less than half as much to construct ( 300,000 pounds). It was to go under the ground, beneath the much traveled New Road, later hook up with the City Terminus' line (if CTC's was ever approved), and would incur no costly purchases of land or great land demolition. These were the types of promises Parliament was looking for, and the line was approved in 1853 under a new title the North Metropolitan Railway.

The Metro still needed CTC's line as a connection to the city. CTC's proposed railway ran in a different area from the Metro's, and without that area, the line would not be as efficient. In order to construct a railway through that area, the Metro took over CTC's line, scaled it down, and had it approved as part of their own. Financial backing was still needed, but the Great Western Railway Company (an already established railway company) agreed to provide the financial support to construct the Underground in return for direct access to the city. This was easily agreed upon, and in 1854 an act of Parliament to begin the construction of the Metropolitan Railway was obtained. The total cost of one million pounds was raised by December of 1859; in February of 1860 the first shafts were sunk.

The art of architecture and the science of engineering were advanced remarkably in the construction of the Underground. Innovations in tunneling and excavation were pioneered with heroic determination. The cut and cover method of tunneling in which a trench of about fifteen feet would be dug out of the ground, the sides supported by the construction of walls, roofing would be built overhead, and then covered with dirt, reinstating the road, had become too expensive and too slow. Following the Victorian compulsion of efficiency, tube construction was invented. <5>

In 1818, Marc Isambard Brunel patented a method of tunneling through the ground using a shield. This shield went through many transformations until J. H. Greathead perfected the design. It was circular in shape with a diaphragm within which the cast iron tunnel segments were bolted up. It advanced hydraulically. As it advanced, a void was left in between the excavation and the lining, but this problem was solved by pumping a cement grout into the gap. Sir Benjamin Baker, a partner of the Metropolitan Railway Company, summed up the great engineering experience of the construction by listing at least twelve feats of engineering which were perfected by the crew without having ever been instructed in such procedures. <6> Those problems had been solved for the first time during the construction of the Underground, and the principles of their solutions have been used since then in engineering and construction.

All of this happened without much input from the public. Because of the great demand for direct line services within the city of London, it was simply assumed that this project

was one the public was anxious to see in progress. This was absolutely the case. In spite of the great danger and fear of going underground, the loss of the few open spaces in the already crowded city, the incredible demolition of London, and the horrible injustice to the poor (without any consideration or reparation, many of the poor had their homes destroyed in order to clear the way for the lines) all caused or furthered by the introduction of the Underground, the public loved it. It was there and they used it. There would have been an immense loss of comfort and convenience without it. Not only would the Victorian public have lost a method of transportation, but future generations would have been denied references to a metaphor of motion which fascinated the Victorians and permeated their art and literature. They would also have lost out on the unbelievable advancements made in engineering through the Underground's construction, and the first real allowances for the poor made through transportation which would lead to a number of other types of regulated standards for the less fortunate.

None of these problems or rewards could have been realized, however, until the actual opening of the line. The first trial run was on May 24, 1862, but it was not until January 10, 1863, that the line opened to the public. The *London Times* captures perfectly the public's exasperation at the prolonged delay of the opening of the line:

It appears that arrangements have been made for opening this line on the 10th [of January] for public traffic, but as the 1st of October, the 1st of November, the middle of December, and the 1st have been announced from time to time as the probable date of opening, it is presumed that no one will feel disappointed if a further postponement should take place. <7>

In spite of this annoyance, 38,000 people rode the Underground its first day in operation and thousands more waited in line. The crowd was described as "the crush at the doors of a theatre on the first night of a pantomime." <8> The trains were overstuffed to accommodate those who absolutely had to experience the Underground on the first day. At 12:00 noon, there were enough people waiting to fill four trains in succession and for an hour, no further tickets were sold in order to decrease the crowds. The *London Times* described the experience of the Underground as, on the whole, pleasant. The underground lines were free from the annoyances usually experienced in railway tunnels. The engine drivers paid greater attention to the working of the engines, and they were very careful in the management of their fires. However, it was admitted that there was a very small amount of sulfurous fumes given off, and because the condensing tanks below the engines were really too small to accommodate the amount of steam given off, some steam had to be discharged into the tunnels-but it was also a small amount and condensed very quickly. <9>

A different source described the atmosphere in the tunnels as extremely bad and said breathing the sulfurous fumes was "much like the inhalation of gas preparatory to having a tooth drawn ... By the time we reached the Gower Street, I was coughing and spluttering like a boy with his first cigar!" <10> And still another observer found the problems of the Underground to be significant, complaining of "the darkness of the

tunnels, the heat of the gas-lighted carriages in the summer, the sulphurous odor down in the stations, and the fear of unknown and indefinite dangers." <11>

The extensive demolition and area shut-downs caused by the Underground was also a highly debated topic. One very critical editorial in the *The London Times* likened the map of the Metropolitan railways to "an anatomical drawing with endless filaments of blue and red veins running from one blotchy centre to another." <12> In this article we are told that no space is safe from the intrusion of the "iron monsters." There was a great fear in many of the Victorians that the simplicity in life which they highly valued and the element of nature which was extremely important was being destroyed by this fast-paced progress, just as the earth was being raped by the men and machinery constructing the Underground.

Charles Dickens wrote of this city-wide destruction in *Dombey and Son*:

Houses were knocked down; streets broken through and stopped; deep pits and trenches dug in the ground; enormous heaps of earth and clay thrown up; . . . there were a hundred thousand shapes and substances of incompleteness, wildly mingled out their places, upside down, burrowing in the earth . . . <13>

Many felt that all of the railway lines added to the squalor and unhealthiness of the city. While the Underground was constructed under the premise that it was to relieve traffic, its construction led to even further blockage of roads. Foot pavements were made impassable by timber, mud, stone, bricks, sand, tools, etc. and roadways were blocked with men, machinery, earth, and the tunnels themselves. The Underground was to have increased business, but at first it succeeded only in driving people away from lodgings and shops. There was also a great interference with drainage and other underground pipelines. In spite of careful attempts to avoid these lines in the excavation of the earth, many lines were hit and damaged or destroyed. One of the reasons behind the delay of the Underground's scheduled opening was an accidental breakage into the sewerage line which ran parallel to the railway line. As the pipelines below the earth were being destroyed and the city above was being demolished, London's few open spaces dwindled away. If there were any places that were not already overcrowded with people, pollution, and buildings, they were soon filled up with the confusion of construction and/or railway lines.

A letter in the *the London Times* responded to the very critical editorial of March 3, 1863, by defending the Underground. The article stated that the criticism was an exaggeration and that the writer of the article would not be successful in trying to sway the public from such a wonderful resource. It was written that the Underground and other railway lines were not unsightly, posed very little interference, and that they afforded immense facilities beneficial to the city. <14>

The greatest debate over the Underground, and other railway lines as well, also had a great deal to do with the improvement or downfall of London. It dealt with the treatment of the poor in the construction of the railways. Because of the deep middle-class

prejudice against the working classes during the Victorian period, there was little concern for their welfare. As the railway companies surveyed the land which would be necessary for the completion of their lines, they gave little or no thought to what would happen to the people living in the tenements they planned to knock down. As these homes were destroyed, there was actually a sense of accomplishment felt by some, since the homes were unsightly and unsanitary. The Fortnightly Review, in an article by George Dodd, reported that in the making of approximately two miles of railroad, nine hundred houses were destroyed. <15>

What could have possibly merited such a system which produced so many problems and such resentment? Firstly, the resentment and the problems were felt and seen by an extremely small percentage of people. There was never any more than editorial comments made on the disadvantages of the railway; never was any train boycotted, not for a day, not even for a single run. It was a necessity and a convenience-not something the public was likely to give up. The Underground and the railways of London amazed the people. They put the spectacle of speed and motion in front of the people's lives and it was intoxicating to them. Nature was conquered and now there was a way also to conquer space and time! The art and literature of the era reflect these feelings. Railway metaphors popped up in many literary works. Dickens used them frequently. R. L. Stevenson's famous poem "From a Railway Carriage" is another example: "All of the sights of the hill and the plain, fly as thick as driving rain, and ever again in the wink of an eye, painted stations whistle by." <16> The railways also appeared in literature in a negative light. William Morris describes the Underground as "that vapour-bath of hurried and discontented humanity." <17>

The final, and most important consequence of the creation of the London Underground is the contribution it made to the regulation of standardized assistance to the poor. At the opening of the Underground the fares ranged from 6 d. to 3 d. one way, and from 9 d. to 5 d. for the return. Charles Pearson, the creator of the plan for an underground railway service knew that the service would cater greatly to the working class traveling to work each day. He also realized the serious expense such railroad trips would be to the poor. He had hoped for a standard low fare for the working class, but died before this goal was achieved. By 1865 between 1,800 and 2,000 workmen were using the Underground every day. Because of the huge injustice done to the poor in the construction of the railway, the return rate for the workers was lowered to 3 d. Although this does not sound like a significant discount, and while we realize that this in no way solved or helped the problem of homelessness (except in a very abstract way), the Metropolitan Railway was the first ever to offer such a compensation to the poor. This led the way for the 1883 Cheap Trains Act which was passed in order to give the Board of Trade the power to "oblige" other railway companies to price fares specifically for workers. <18> This went directly against the Victorian desire for laissez-faire government, but showed the growing concern for the poor, which continued to grow throughout the nineteenth and twentieth centuries.

The Underground continued to grow as well. It began at only 3.75 miles long and today has over 250 route miles. During the Victorian period it had profound economic and

social effects. Its construction, and all railway construction, increased the demand for coal, iron, bricks and other building materials. Large companies backed the railways and made them into huge financial investments -- huge profit producing corporations. <19> The railways sparked the fire of competition, and men worked harder to try and conquer more, own more, and be more. What had been described by the Victorians as the greatest building operation since the pyramids was accomplished, <20> still astonishing people today at what the human mind and body can produce. Every line finished was a triumph for England, and as more railways were constructed, England grew in strength and confidence. The railway lines mapped out not only the places to be traveled by the cars; they also mapped out the ambition, drive, perseverance, and ability of Victorian England.

### Notes

1 "The Metropolitan Line," *London Times*, January 12, 1863, p. 7.

2 Oliver Green, *The London Underground: An Illustrated History* (Allan Ltd., Shepperton, Surrey: Runnymede, 1987), p. 3.

3 Ibid.

4 Green, p. 4.

5 Ibid.

6 L. T. C. Rolt, *Victorian Engineering* (Penguin Books, 1988), p. 241.

7 "The Metropolitan Railway Company," *London Times*, January 2, 1863, p. 5.

8 *London Times*, January 2, 1863, p. 5.

9 "The Metropolitan Line," *London Times*, January 20, 1863, p. 10.

10 Rolt, p. 17.

11 George Dodd, "The Metropolis and the Railways," *The Fortnightly Review* 4 (Feb. 15 May 1, 1866), p. 365.

12 "The Metropolitan Line," *London Times*, March 3, 1863, p. 7.

13 quoted in *Transport in Victorian Britain*, ed. Michael Freeman and Derek Aldcroft (Manchester University Press: Manchester, 1988), p. 5.

14 "The Metropolitan Line," *The London Times*, March 5, 1863, p. 9.

15 Dodd, p. 361.

16 Freeman and Aldcroft, p. 4.

17 William Morris, *News From Nowhere and Selected Writings and Designs* (Penguin Books, 1984), p. 183.

18 Freeman and Aldcroft, p. 149.

19 Freeman and Aldcroft, p. 34.

20 Freeman and Aldcroft, p. 30.

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