THE RAILWAY IN CHINA

From its very beginning railway enterprise in China has been confronted with many difficulties. Amongst the foremost of these have been the universal belief in feng-shui, ancestral worship and the attitude of the rulers of the country. To get a clear grasp of what railroad construction has meant in this country, one must first understand the significance of these three things. The two words feng and shui literally mean "wind" and "water," but taken together they have a connotation which may more accurately be translated "local luck" or "the luck of a place." No Chinese ever builds a house or a temple or chooses the site for a grave without consulting a soothsayer regarding the feng-shui of the place, that is to say, its position relative to the good and evil influences of the surrounding topography. Thus the introduction of an outside influence such as a mechanical devise like a railway may seriously upset the feng-shui of a whole countryside, thereby arousing a hostility from the people that may drive them to almost any lengths. Ancestral worship and the reverence in which Chinese hold their forbears is responsible for an extreme repugnance to having their graves disturbed, and since no railway could possibly be laid in China without disturbing innumerable graves, here is another very prolific source of trouble in railway construction. As to the attitude of officials of the old régime towards the introduction of railways, not only did they foresee complications in regard to the two foregoing conditions, but they also feared foreign aggression and were strongly suspicious of the motives that lay behind the requests for such important concessions as the building and controlling of extensive railway systems.

Add to this a natural distrust of innovations on the part of the Chinese people, high and low, and it will not be difficult to see why it was so hard in the first place to get China to take up railway transportation. Nevertheless, China now boasts well over 7,000 miles of railway line in her territory, by far the greater part of which, however, is due to foreign enterprise.

Railway enterprise in China began with the laying of a ten mile two and a half foot gauge line between Shanghai and Woosung in 1876.
under the supervision of Mr. G. J. Morrison. Almost immediately the trouble that the officials foresaw occurred, as a Chinese committed suicide on the line over some grievance, real or imaginary. The result was that the Chinese Government purchased the line at cost price, after it had been running but a single year, tore it up and shipped the rails to Formosa, where a line was laid for military purposes. Previous to this in 1863, a number of Shanghai merchants, mostly British, had petitioned Li Hung-chang, the then Imperial Commissioner and Governor of Kiangsu, for the sole right to establish a railway between Shanghai and Soochow. This was refused. It was followed shortly after by an attempt on the part of Sir MacDonald Stephenson, who had been connected with railway construction in India, to interest the people and authorities in China in railway enterprise. But he, too, failed.

The construction of the Shanghai-Woosung Line was carried out without official sanction by a Shanghai company, and the project proved a complete success, as far as its use by the natives was concerned, but the suicide of the unknown Chinese coolie on the line upset this happy state of affairs, causing riots and ending, as stated above, in the purchase and removal of the line by the Chinese Government.

The next line to be laid in China was one built by Mr. C. W. Kinder, resident engineer of the Chinese Engineering and Mining Company which had been formed under the auspices of Li Hung-chang, then Viceroy of Chihli, and Tong King-sing to operate coal mines in the Kaiping district of North-eastern Chihli. This line was to connect the mines with a neighbouring canal, and the trucks and cars were to be drawn by mules; but while it was being laid, Kinder secretly constructed a steam engine, and when this was finished it proved so successful and so much more economical than the use of mules, that it was allowed to operate. This was in 1881. In 1886 permission to extend this line to Lutai Canal was granted, a new company called the Kaiping Railway Company under Wu Ting-fang being formed to undertake its operation. Bit by bit this line was extended, till at last it reached Tongku and then Tientsin. By 1894 it had been extended to Shanhaikuan and by 1896 some forty miles beyond. Here it stopped till work was recommenced after a loan with the British had been contracted, and in 1903 it was pushed on to Mukden. Subsequently it was extended to Fengtai near Peking and ultimately to the capital itself. Thus came into being the Peking-Mukden Railway, the first permanent railway in China.

Meanwhile Russia had secured an agreement with the Chinese Government which permitted her to build the Chinese Eastern Railway in North Manchuria with a branch from Harbin to Port Arthur, while France secured the right to extend her Annam railways into China, but did not do so until 1898.

In 1897 work was started on the Peking-Hankow Railway, the first hundred miles to Paotingfu being completed in 1899, when it was handed over by the British engineers to a Belgian syndicate. Meanwhile Germany had secured railway concessions in Shantung and began the construction of the Tsingtao-Tsinan Railway in the same year.
The outbreak of the Boxer trouble in 1900 naturally interfered with railway construction all over China, and little was done for a couple of years after this momentous event, but in 1902 the Chuochow-Pingshiang Railway was completed, and by 1903 the line from Shanhaikuan to Mukden was completed. The following year, 1904, the Tsingtao-Tsinanfu Railway was completed by the Germans, as also was the Canton-Samshui line in South China, while the Yunnan Railway was commenced by the French and the Shanghai-Nanking Railway by the British. Late in 1905 the Peking-Kalgan Railway was commenced, being constructed entirely by Chinese engineers, the Peking-Hankow Railway was completed, and the Shansi or Chentingfu-Taiyuanfu (called the Chentai Railway) and the Pienlo or Kaifengfu-Honanfu Railways were commenced.

By now, Japan, having secured rights in Manchuria, was busy with the South Manchuria Railway, which was opened to traffic in 1907. The Chentai Railway was completed the same year. In 1908 the northern section of the Tientsin-Pukow Railway was started by the Germans, in which year also the Shanghai-Nanking line was completed, while the Peking-Hankow line came under Chinese Government control. The following year the southern section of the Tientsin-Pukow line was commenced by the British, while the Kiangsu-Chekiang Railway under provincial control was progressing. This ultimately came under the same control as the Shanghai-Nanking Railway, and was finally completed as far as Ningpo in 1916, when it became known as the Shanghai-Hangchow-Ningpo Railway.

In 1910 the Chinese Government started the Kirin-Changchun Railway, which was completed in 1913, while the Peking-Kalgan Railway, which had been completed in 1909, was pushed out westward towards Tatungfu, on into Shansi, reaching that place in 1915, Suiyuan (near Kueihuachen) in 1921 and Paotowchen in 1923. The Szechuan-Hankow Railway was also started in 1910, but owing to financial difficulties little was accomplished. A small railway from Changchow to Amoy was completed this year. The Pienlo was pushed westward from Honanfu towards the Shensi border, and has now reached Sianfu, the capital of that province.

In 1914 the famous Lunghai Railway, destined to run from Hsutchowfu, on the Tientsin-Pukow line to Kaifengfu, was started, as also was the Hupeh-Hunan section of the Canton-Hankow Railway. The former was completed in 1916.

What is known as the Ssu-tao Railway (Ssupingkai to Taonan) in Manchuria was commenced about this time and completed in 1923, since when practically all railway construction has ceased, except in Manchuria, where a number of short lines have been built by Chinese and Japanese.

It will be seen from the foregoing brief history of railway construction in China that the most active period in this field of development was from just after the Boxer outbreak in 1900 up to the outbreak of the Revolution in 1911. It was during that period that most of the great lines were built.
With the exception of the South Manchuria Railway and the Chinese Eastern Railway, both in Manchuria, the Yunnan Railway, and a few small private and provincial lines, all the railways in the country are under the control of the Chinese Government, though most of them were originally financed and built by various European groups, having been redeemed by the Chinese Government by means of loans raised for the purpose. Naturally they represent an enormous amount of capital, and constitute a very important national asset.

It is impossible here to give a detailed account of each of the twenty-nine separate railways in China and Manchuria, but following will be found short accounts of some of the more important of these.

It is almost unnecessary to say that latterly, under the chaotic conditions that have prevailed, the railways of China, or at least those that have fallen into the hands of the warring factions, have suffered very considerably, both in regard to damage to the tracks, bridges, buildings and rolling stock and to the sequestration of funds, and it will be some time before they will be in full running order again. However, much is being done, and, providing peace is maintained, we may soon see a resumption of the splendid service that was in existence previous to the outbreak of the revolution in 1911.

At the same time we may look forward to a resumption of the vast railway construction schemes that have been drawn up from time to time; schemes, which, if put into effect, will give the country a network of main lines that will add enormously to its prosperity and increase of trade.

As a matter of fact work is actually being carried out in various parts of the country under the supervision of the Ministry of Railways, while experts have been engaged from abroad to act in an advisory capacity to that institution.

THE SHANGHAI-NANKING RAILWAY

This railway runs more or less parallel to the estuary of the Yangtze between Nanking and Shanghai through rich, rice-growing and silk-producing country, passing the important towns of Soochow, Wusih and Chinkiang. The line from Shanghai to Woosung at the mouth of the Whangpoo River is now part of this railway. This section was originally built in 1876, being the first railway in China, but was torn up and shipped to Formosa by the Chinese Government. The main line from Shanghai to Nanking was started in 1901 and completed in 1908 having been built by British engineers. It connects with the Tientsin-Pukow Railway at Nanking by means of a ferry across the Yangtze to Pukow, and with the Shanghai-Hangchow-Ningpo Railway at Shanghai. Including the line to Woosung, it is 203 miles in length. In 1928 it carried 10,861,405 civilian passengers and 171,000 military passengers, which yielded receipts totalling $7,975,120. The freight carried the same year was 1,367,649 tons, yielding receipts to the amount of $2,216,745. The railway is under joint Chinese and British administration.

THE SHANGHAI-HANCHOW-NINGPO RAILWAY

Serving the two provinces of Kiangsu and Chekiang, this railway passes through very similar country to that traversed by the Shanghai-Nanking Railway. It was built in sections, at different times and by different groups. In 1914 the various sections were taken over by the Government, which took a loan from the British
and Chinese Corporation to effect the purchase, after which the whole line was placed under the same management as the Shanghai-Nanking line. It is 181 miles in length.

THE CHINESE EASTERN RAILWAY

This is an important railway running through Northern Manchuria from Manchuli, on the border of Heilungchiang Province and Transbaikalia, to Suifenho on the border of Kirin Province and the Ussuri Province of Eastern Siberia, where it connects with the Ussuri Railway and so to Vladivostok. At Manchuli it connects with the Trans Siberian Railway. From Harbin a branch runs to Changchun, where it meets the South Manchuria Railway, while it is joined by a branch line at Tsi-tsi-har. Formerly under Russian control, it is now jointly administered by the Soviet and Chinese Governments. Its total length, including branch lines, is 1080 miles. It was started in 1896 and completed three or four years later.

THE SOUTH MANCHURIA RAILWAY

One of the chief factors in the development of South and Central Manchuria, this railway runs from Dairen to Changchun, with a branch line from Mukden to Antung at the mouth of the Yalu River. Here it connects with the Chosen Railway, while at Changchun it connects with the southern branch of the Chinese Eastern Railway and with the Changchun-Kirin Railway. At Mukden it is joined by the Peking-Mukden Railway. It is run by the South Manchuria Railway Company, a Japanese concern with very extensive interests in South Manchuria. Including branch lines it has a length of 759 miles. It is entirely owned and controlled by Japanese.

THE PEKING-MUKDEN RAILWAY

This line is also known as the Kin-Feng Railway and it runs from Peking to Mukden, the capital of Fengtien Province in Manchuria, a distance of 526 miles. It also has some 80 miles of branch lines. It was commenced in 1880 as a small line by Mr. Claude W. Kinder, C.N.G., who was engineer of a Chinese coal mining company in the Kaiping district, and was to connect the mines with a canal a few miles distant.

From these insignificant beginnings it developed by degrees, and was finally completed from Peking to Mukden in 1907, being under British management. The line is of the standard gauge, namely, 4-ft. 8½-in., is well constructed and carries an excellent array of rolling stock, though this has been sadly depleted as a result of the recent wars in this part of the country. It passes through very rich country, including the important coal mining area at Tongshan, and serves the two ports of Tientsin and Chinwangtao.

It is undoubtedly one of the most important railways in the country, making connections with the Peking-Suiyuan and the Peking-Hankow Railways at Peking, the Tientsin-Pukow Railway at Tientsin and the South Manchuria Railway at Mukden. In 1925 it carried 6,317,217 passengers and 7,720,141 tons of freight, while its earnings were over twenty-four million dollars, and its profits over ten million.

THE TIENTSIN-PUKOW RAILWAY

Generally known as the Tsing-Pu Railway, this line connects the important treaty port of Tientsin with Pukow on the Yangtze opposite Nanking. It follows the general direction of the Grand Canal, passing through the provinces of Chihli, Shantung and Anhwei into Kiangsu, and taps a wide stretch of exceedingly rich country. At Tsinanfu, the capital of Shantung, it connects with the Tsingtao-Tsinan line. Built in two sections, the northern was commenced in 1908 and constructed by German engineers, the southern section being commenced at a later date by British engineers. The whole line was open to through traffic in 1912. It is of standard gauge, and is 627 miles in length, with 60 miles of branch lines. For most of its length it passes over flat plains, skirting low hills in Shantung. South
of Pengpu, an important station on the Huai River, it passes through a belt of hilly country on the Anhwei-Kiangsu border before descending into the valley of the Yangtze. Here the country is wild, sparsely populated and offers good shooting. It is the only part of the whole line which has any pretence of scenic beauty. In 1924 over four million passengers were carried and nearly three million tons of freight, while the profits for the year were over nine million dollars. For some time no through trains have been running on this line, but recently attempts have been made to re-establish a through service.

THE PEKING-HANKOW RAILWAY

This is the longest line in China Proper, being 755 miles in length, with 70 miles of branch lines. It is standard gauge, having been commenced in 1898 and completed in 1905. The first hundred miles was laid by British engineers, this being handed over to the Belgians in 1899, the rest of the line being completed by them and the French. From Peking it travels in a south-westerly direction towards the Shansi border, striking south at Chen-ting Fu and continuing in that direction through Honan and Hupeh to Hankow. At Chenchow it is crossed by the Kafieng-Honan Railway, or Pienlo, and a little to the north it is met by the Tao-Chin Railway (the Pekin Syndicate Line). It is a very important line, its total revenue for the year 1923 being $32,012,578, and the profits derived therefrom nearly twenty million dollars. It crosses the Yellow River by means of a fine steel bridge, constructed with great difficulty. At Shih-chia-chuang, close to Chen-ting Fu, it is joined by the Chen-tai or Shansi Railway.

THE PEKING-SUIYUAN RAILWAY

This line was originally commenced as the Peking-Kalgan Railway by a Chinese engineer, the late Jene Tien-yu, in 1905, and was completed as far as Kalgan by 1909. It was then continued in a westerly direction reaching Ta-tung Fu in 1915, Sui-yuan in 1921 and Pao-tow Chon in 1923. It is 507 miles in length, and is chiefly important as a carrier of produce, wool, hides, skins and grain, from the great north-west to the metropolis, whence these are carried on to the port of Tientsin. The profits derived from this railway in 1924 were a little over two million dollars. It taps very poor country, and, but for the produce coming by this route from Central Asia to the coast, would not have justified its existence. Ultimately it may reach Lan-chou Fu in Kansu, when it will become a very much more profitable undertaking. It is interesting to sportsmen as it brings them to within easy reach of big-horn sheep and wapiti country, while its importance to archaeologists lies in the fact that it passes Ta-tung Fu, where are situated some Tang Dynasty cave temples and rock carvings.

THE SHANTUNG RAILWAY

Running 245 miles from the port of Tsingtao to Tai-nan Fu, the capital of Shantung, this railway was built by the Germans, having been commenced in 1899 and completed in 1904. There is a branch line of 24 miles to the Poshan Colliery, another of four miles to the Tzuchuan Colliery and one of just over four miles to the Tiehshan Iron Mine. The line forms the main artery of goods traffic in Shantung, feeding the port of Tsingtao. It has not been a very profitable line, the profit in 1926 being under a million and a half dollars, though in 1924 it was twice that figure.

THE SHANSI RAILWAY

Also known as the Chen-Tai Railway, this is a metre gauge line running a distance of 150 miles from Shih-chia-chuang, near Chen-ting Fu on the Peking-Hankow line, to Tai-yuan Fu, the capital of Shansi. It passes through the high mountainous country of East Shansi, tapping the rich coal mining areas of Ching-shing Hsien and Ping-ting Chou. It is one of the few railways in China that affords the traveller...
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views of fine scenery. Its profits in 1926 were just under three million dollars, the proportion to the takings and running costs being very high. It was built by French engineers during the years 1904 to 1907, calling for much skill in its construction, owing to the nature of the country through which it passed.

THE YUNNAN RAILWAY

Though this railway actually extends from Haiphong in Tonkin to Yun-nan Fu in Yunnan, the part that concerns us is only that in the latter province. The total length is 528 miles, of which 288 are in Chinese territory, though under French control. The Tonkin section was commenced in 1901, the Yunnan section in 1904, the whole being opened to traffic in 1910. This is undoubtedly China's chief scenic railway, the country through which it passes being notorious for its beauty and grandeur. Great engineering skill was called for in its construction, there being some remarkable bridge building work done by its builders.

OTHER RAILWAYS

The following other railways exist in the country:

- Taokow-Chinghua Railway in Honan (Peking Syndicate Railway), 93 miles.
- Lung-Hai Railway, from Hai Chow on the coast of Kiangsu to Si-an Fu in Shensi, 533 miles.
- Kirin-Changchun Railway in Central Manchuria, 80 miles.
- Kirin-Tunchua Railway, 130$\frac{1}{2}$ miles.
- Chuchow-Pinghsiang, 65 miles.
- Canton-Kowloon Railway, 112 miles.
- Changchow-Amoy Railway, 18 miles.
- Ssupingkai-Taonan Railway in West Manchuria, 264$\frac{1}{2}$ miles.
- Taonan-Tsitsihar Railway, 141$\frac{1}{2}$ miles.
- Canton-Hankow Railway (Completed portions), 453 miles.
- Kiangsi Railway (Completed from Kiukiang to Nanchang), 86 miles.
- Sunning Railway, 63$\frac{1}{2}$ miles.
- Swatow Railway, 26$\frac{1}{2}$ miles.
- Tayeh Mines Railway, 17 miles.
- Tai-Tsao Railway, 27 miles.
- Hulan-Hailin Railway, 70 miles (50 miles under construction).
- Takushan-Changwu Railway, 70 miles.
- Mukden-Hailungcheng Railway, 110 miles (32 miles under construction).

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