

THE FIRST PRIVATE RAILWAY IN INDIA: DEOGHUR RAILWAY

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Synopsis: Deoghur Railway, the first private railway in India, was constructed without any financial grant or guarantee from Government, unlike other Imperial and State Railways constructed earlier in the country. Deoghur Railway, constructed in year 1883, set a new benchmark of low cost construction, and this included a large girder bridge, at under £4,000 per mile, unrivalled in the country.

This line was not only first private railway in India to be fully financed locally but it was completely run and maintained by native staff, a rarity in those days for natives to handle technical aspects of Railways. Babu Hira Churn Chatterjee , engineer in charge , supervised construction of rail lines.

Mr. Dwarkanath Tagore, four decades ago, had wanted to construct a rail line to transport coal from Raneegunge coal mines and his company Carr Tagore and company was willing to finance up to one third of cost of construction, but permission was not given to Indian company to construct Railways.

The object of this line was principally to convey the enormous numbers of pilgrims from the Baidyanath Junction of E.I.R chord line, to the shrine of Baidyanath, Deoghur, who flocked to the famous temple from all parts of India all round the year. The line would provide all weather communication to temple town which earlier remained marooned due to overflowing hill torrents and flooded country side. Baidyanath station of EIR chord line (Sitampur-Jhajha-Lakhisarai) would be subsequently renamed as Jasidih and chord line would be renamed as main line.

Net earnings of Deoghur railway were always positive and percentage of expenses to earnings, operating ratio, was within healthy range of 53% to 71.95%.

This line was acquired by State on 1911 and incorporated with EIR on 1st July 1911 and converted to Broad gauge on 13th September 1913, bringing down the curtain to India's first private railway after 30 years of operation. Deoghur line would spawn a new category of 'assisted Railways', where role of Government was limited to grant of free land only and rest of investment would be done by Rail companies without any offer of guarantee or capital outlay by Government of India.

History: Deoghur Railway was the first private railway in India to be constructed without any financial grant or guarantee from Government, unlike other imperial and state Railways constructed earlier.

The project was sanctioned in October 1881 and railway opened in 23 December 1882. Messrs Burn & Co. constructed the railway with capital raised locally and without any

guarantee. This line, 6.25 miles long, connected town of Deoghur with Baidyanath station on the East Indian Railway chord line. Subsequently, Rohini arm of the line was found unremunerative and permission was sought from Government to dismantle the branch leaving only 4.79 miles long section connecting Deoghur with Baidyanath. Rohini branch was opened for public traffic on 1st July 1883 and was closed with effect from the 1st November 1886 in consequence of the insufficiency of traffic, one of the first examples of closing unviable section.

The formal opening of Deoghur Railway was covered in local press. Mr. Franklin Prestage, agent of Eastern Bengal Railway and promoter of DHR , was the guest of honour.:

“The Deoghur Railway was formally opened on Monday last by a party of European and native gentleman, who went at the invitation of Messers Brown and co, managing agents. In the course of his speech Mr. Prestage bestowed high but deserved eulogium upon Babu Hira Churn Chatterjee , the able engineer in charge of the works.”—The Liberal and The New Dispensation, Calcutta Sunday December 17, 1882

The line had to traverse undulating terrain, negotiate sharp gradients and cross rapid hill torrents. During the wet and rainy months these rivers overflowed and flooded the surrounding country, and rendered communication almost impossible with the town of Deoghur, where the holy shrine was situated. Derwah River, the rapid hill torrent, which would besiege the town and flood countryside, was bridged by a girder bridge of five piers, being a length of 325 feet. Another girder bridge, sixty-five feet long, crossed the Jumnajori, a smaller river. Construction of this line provided all weather communication and removed the difficulty of crossing rivers during rainy season.

The object of this line was principally to convey the enormous numbers of pilgrims from the Baidyanath Junction of E.I.R., to the shrine of Baidyanath, Deoghur, who flocked to the temple from all parts of India all round the year, and at certain festival seasons the proportion quadrupled, and the trend continues unabated even now. EIR statistics showed annual passenger traffic of 500,000 besides this great pilgrim traffic, the same statistics reflected outward and inward goods traffic at the Baidyanath Junction from 6,000 to 7,000 tons yearly. Between the two it was reckoned that the line could not fail to show good results. – **The Railway Times, January 6, 1883**

Permanent way -The permanent-way was laid with 36-lb, steel rails on wooden sleepers. The line was ballasted throughout but fencing was not done except at stations. The sharpest curve had a radius of 2,640 feet, which extended over a length of 3000 feet. The ruling gradient was 1 in 60, sharpest gradient in adjoining sections of EIR, of a total open mileage of 4'79 miles, 3'50 miles were on the ruling gradient of 1 in 80.

The Deoghur Railway was constructed and equipped at a cheapness of cost never yet rivalled in the country, namely at under £4,000 per mile, and this included a large girder bridge. - **The Railway Times, January 6, 1883**

Terms of contract: A contract was entered on 12th July 1883 between the Secretary of State and the Deoghur Railway Company for construction, maintenance and working. There was no any financial aid or fixed guarantee from government, only land was provided free of charge.

It was stipulated that if the Company failed to perform its obligations Government may after giving six months notice, determine the contract, and take over the railway at a valuation based on the earnings of the two years immediately preceding. Government may also, after the railway has been opened for traffic for 30 years, and thereafter at terms of 10 years, by giving 12 months' notice, determine the contract and take the railway over at a valuation calculated at the average market rate of the share during the previous three years, giving the Company in addition a bonus not exceeding 20 per cent of the value so arrived at. -- **Abstract of Contracts with Railway Companies- Public Works Department India office May 1904**

Messrs. Burn & Co., convinced of the financial viability of the project, quietly circulated the prospectus of Deoghur Railway Company for raising of funds amongst their friends. No public advertisements were given, so convinced were they of profitability of the projected Railway, armed with inside information and traffic data, furnished by a senior official of EIR. A report had appeared in the leading journal:

"In the month of January 1882, Messrs. Burn & Co., a well known firm of Contractors of high standing of Calcutta, circulated among their friends the prospectus of the Deoghur Railway Company, Limited. No advertisements, however, appeared in the Press, nor was there any "high falutin" about developing the resources of the country, or any reference to the great public spirit of Messrs. Burn & Co. in offering this investment to the public. Messrs. Burn & Co., simply said that they believed there was an opening for a line of Railway on the metre-gauge to connect Baidyanath Station, on the East Indian Railway, and the village of Rohini with the famous Hindu temple at Deoghar."—**Commerce and Companies, Calcutta, 24th January 1885**

M/S Burn and Co in their prospectus stated that they were willing to construct the line, provide it with rolling stock, and pay all preliminary costs and expenses for Rs. 2, 75,000 which was fixed as the capital of the Company, and made up as follows: construction of line Rs. 1, 95,921, rolling stock Rs. 71,100, preliminary expenses and contingencies Rs. 7,979—total Rs. 2, 75,000. Cost per mile of the line only amounted to Rs. 31,347, lowest in the country.

Within this short distance of 6-1/4 miles there were two bridges, one over the Derwah of five spans of 65-feet each, and the other over the Jamna Jore of one 25-feet span; a bank 25 feet high and 1,200 feet long; and a rock-cutting through trap and gneiss (a metamorphic rock with a banded or foliated structure, typically coarse-grained and consisting mainly of feldspar, quartz, and mica) over a quarter of a mile long.

It is curious to note the difference in cost of some of these Railway and Tramways. The Deoghur Railway, metre-gauge, length 6-1/4 miles, cost Rs. 43,733 per mile, and this included two bridges, one of five spans of 65 feet, and one with a single span of 25 feet, a quarter of a mile of rock-cutting, and about 1,000 feet of a bank 25 feet high, together with rolling-stock. The Tarkessur Railway, broad-gauge, length 223 miles, through a perfectly level country, with no bridges or engineering difficulties whatever, and without any rolling-stock, promises to cost the Company Rs. 75,000 per mile. The Darjeeling-Himalayan Railway metre-gauge, 50 miles in length, complete with rolling stock, embankments, &c., cost up to 30th June Rs. 53,600 per mile. The Calcutta Tramways complete with all appliances, rolling stock, horses, stables, &c., length 382 miles, cost the Company £9,000 per mile! The Behar Tramways are to cost about Rs. 40,000 per mile.

Opening of the first private railway in India was covered widely in international press as past efforts in promoting private railway construction had not succeeded.

“The first railway constructed in India by private enterprise has recently been opened. The length of the line in all is six miles viz., four miles from the Baidyanath Junction on the E. I. R. to Baidyanath (Shrine) Station, Deoghur Railway, from where there is a branch to Rohini, two miles. The line was constructed entirely by Messrs. Burn and Co., without any guarantee, subsidy, or concession whatever from Government, further than the grant of the necessary land.” —Herapath's Railway Journal.-- 112 AMERICAN RAILROAD JOURNAL.

Messrs. Burn & Co. Had stated in their prospectus that the East Indian Railway Company were conveying about half a million passengers yearly to Baidyanath, that about the same number of pilgrims from the surrounding districts were in the habit of walking over the ground covered by the railway, and that 4,00,000 maunds of goods would be received annually. *They based these statements on information supplied to them by an officer of the East Indian Railway, who invested a good portion of his sayings in the concern, and who, as events turned out, proved to have been egregiously mistaken. - Commerce and companies, Calcutta , 24th January 1885, Page 141*

Upon those figures Messrs. Burn & Co, had estimated that 500,000 passengers would annually use the line and pay Rs. 42,968, and that 4,00,000 maunds of goods would be carried, yielding Rs. 9,375 making the total receipts Rs. 52,343; and deducting 50 per cent for the working expenses, this would leave a net profit of Rs. 26,172, or, about 92 per cent of a dividend.

The Railway was duly opened in the beginning of 1883, and as, after some little time, the traffic did not answer the expectations of the promoters, inquiries were made, and it then transpired that the estimates in the prospectus were based on erroneous data, and that the traffic on the East Indian Railway was considerably less than had been stated; whereupon Messrs. Burn & Co. came forward in the frankest manner possible. They at once admitted

their responsibility for the mistake that had been made, and offered either to return the money subscribed, with 4 per cent interest to any shareholder who desired it, or to present him with additional shares gratis out of their holding in the Company, guaranteeing a five per cent dividend.

“There was not an angry word said on both side, and those shareholders, who elected to take their money parted with Messrs. Burn & Co. with every expression of regard and good feeling. But though the traffic may not have realised the sanguine expectations of the projectors, it has steadily increased, and is still increasing. For the half-year ended 31st December 1883, the total receipts were Rs. 9,645. For the half-year ended 31st December last the receipts will total up nearly Rs. 13,000, and the net profit will amount to about Rs. 7,000, equivalent to a dividend of 5 per cent per annum. This, as things go, is not at all a bad dividend for a railway to pay.” -- **Commerce and Companies , Calcutta ,24th January 1885**

Rate and traffic: Certain maxima were fixed within which the Company was permitted to vary rates. Rate for first class was fixed as 3 annas per mile, for 2nd class it was 1 anna 6 pies per mile and for 3rd or lowest class it was 6 pies per mile. For Goods of all classes, rate was 2 pies per maund per mile. Mails and all persons in charge of mail were to be carried free of charge.

Deoghur Railway was able to achieve 3.6% net return on capital deployed in year 1885. Net percentage returns on capital deployed of some of other MG Railways during the year were: SMR 0.76 %, Bareilly Pilibhit 1.21%, Tirhoot 2.49%, Northern Bengal 2.96%, Dacca (-) 0.77%, Bengal and North Western 3.07%.

In 1890, six hundred thirty five passengers travelled by first class which increased to eight hundred eleven passengers in 1891. Similarly third class passengers increased from 1.85 lakhs to 2.17 lakhs during the respective period. The average sum received for carrying a passenger one mile amounted to 5.21 pies in 1891 against 5.15 pies in 1890. The average sum received for carrying a ton of goods one mile amounted to 11.89 pies in 1891 against 11.96 pies in 1890.—**Administration report 1890-91**

Extraordinary meeting of share holders and rising trend in receipts of Deoghar Railway were reported in newspaper Pioneer:

“An extra ordinary meeting of the shareholders of the Deoghar Railway has been convened for the 19th instant, to consider the desirability of applying a portion of the Reserve Fund towards providing for additional rolling stock to meet the increasing passenger traffic which, during the present year, has expanded at a remarkable rate. The receipts for the month of January last were Rs. 3,490 as against Rs. 2,524 for January 1884, and to the 7th February had totalled up Rs. 4,658 as against Rs. 3,114 to the same date in 1884. There is a big Mela on at the present moment, however, which may account for some of the increase, the number of passengers carried from 1st January to 7th February 1885, having been 37,087 as against 23,375 for the same period of last year”. --**Commerce and Companies: Being a Reprint from The Pioneer, from August 1884**

The Report of the Managing Agents of the Deoghur Railway had shown a considerable increase in the traffic receipts over the same period of 1883, though the mileage run was less, the total amount earned in the second half of 1884 having been Rs. 12,928 against Rs. 9,645 for 1883.

During the same period the working expenses were Rs. 6,212 or 48 per cent of the gross receipts, as against Rs. 7,247, or 75 per cent of the gross receipts for the same period of 1883. The profits of the half-year amount to Rs. 6,716 which was equal to 5 per cent per annum, and it was contemplated to pay dividend at this rate.

The Managing Agents reported that there had been no accidents during the half-year; that the line had been regularly visited and inspected; and that the rolling stock, permanent way, bridges, buildings, &c., were all in first-class order.

“The half-yearly inspection by the Consulting Engineer to Government was made on the 6th February, when he remarked in his report that the “banks are well kept on the main line and in fair order on the branch; that the permanent way on the mainline is in good order, has sufficient ballast, is well trimmed and neatly kept, and on the branch quite sufficiently well for the traffic; that the bridges and culverts are in good order and the rolling stock also.” The traffic for the present half-year is stated to show a marked improvement over the corresponding half of 1884 up to the present time”.- Commerce and Companies: Being a Reprint from The Pioneer, from August 1884 ...

Bengal administration report 1884-85 covers the working of Deoghar light Railway:

“This little line is 5-1/2 miles in length, but the Company have asked the permission of Government to dismantle the Rohini branch, 1-1/2 miles in length, which is reported not to pay working expenses. The staff of the line, consisting of 65 persons, are all natives.

The rolling-stock consists of 2 engines, 12 coaching and 4 goods vehicles. The capital expenditure has been 2 -1/4 lakhs; the earnings during the year 1884 were Rs. 43,375 ; the working expenses were Rs. 26,429; so that the net earnings were Rs. 16,946, which represent a percentage of nearly 6-1/4 per cent. 173,657 passengers and 1,326 tons of goods were carried during the year 1884. The bulk of this traffic is on the 4 miles of main line between Baidyanath junction and Deoghar.

The Company, under their agreement with the Secretary of State, have the use of the land rent free for 1,000 years, subject to a power of resumption under which the Secretary of State can in the year 1912 take over the line by giving twelve months' notice and paying the market value of the property at the date of notice, such value being calculated at the average price of shares during the previous three years, together with a bonus not exceeding 20 per cent, of such value. This power of purchase may, if not at first availed of, be exercised at subsequent intervals of 10 years. Messrs. Burn & Co., of Calcutta, are the Managing Agents of the Deoghar Railway.”-Bengal administration report 1884-85

Staff strength: As per administration report 1896-97, 56 staff were on roll. One in general administration ,14 in traffic and telegraph department,26 in engineer's department,15 in locomotive and carriage and wagon department , all native , not a single European or East Indians were deployed in the Deoghur Railway, making it first railway company in India to be fully run and operated by Indians Deoghur railway had only two drivers while DHR had a single driver in 1896-97.-**Administration report in 1896-97**

Newman & Co's East Indian Railway guide of 1870 mentions original name of the place as Jessedee but EIR selected the native name of Deoghur to guide the pilgrims to the city.

It appears that present station of Jasidih had gone multiple changes of name. The initial name of the station, when Sitarampur – Lakhisarai chord line was constructed in 1st January 1871, was Baidyanath.

Name of station as Baidyanath has been reported in various administration reports of the era, Bengal District Gazetteers, Asiatic society report and Newman guide of 1870. Similar was the story of renaming of Sahibganj loop line, which was constructed as main line initially and Sitarampur –Jhajha –Lakhisarai main line which was constructed as chord line originally.

In the chapter, 'Railways' in Bengal district Gazetteer Santal Pargana, the name of junction in EIR chord line has been recorded as Baidyanath for branch line to Deoghar.

"The district is traversed on the north east by the loop line and on the south west by the chord line of the East Indian Railway, the former being opened to traffic in 1859 and the latter in 1871. A short branch connects Rajmahal with Tinpahar on the loop line; another branch also managed by the EIR, runs from Madhupur on the chord line to Girdih, a distance of 23-1/2 miles; and there is a small branch line from Baidyanath junction to Deoghar, which is worked by a private company."-**Bengal District Gazetteers Santal Pargana volume 10**

The approval for altering name of Baidyanath station to Deoghur was given in 1903 for convenience in audit of traffic. –**Indian Engineering, January 3, 1903**

Baidyanath station, later on would be renamed as Jasidih, a rare case of station undergoing so many changes of names.

Currently there are three stations in the area; Jasidih-original junction in main line, Baidyanath dham -the branch line terminus connected with Jasidih and Deogarh new station in Jasidih Banka line.

"Baidyanath, 202 m., is the station at which pilgrims coming by rail to Deoghur or Baidyanath, have to alight. The original name of the place was Jesseedee, but the native name of Deoghur was given as a guide to pilgrims travelling. About 100,000 pilgrims come annually to the temples at Deoghur and from thence they generally proceed to Puri, to the temples of Juggernath, where is the celebrated idol of Vishnu. These pilgrims carry the sacred water of the Ganges as offerings to the idol at these shrines"-- W. Newman & Co.'s East Indian Railway Handbook,1870. A Guide historical, descriptive and suggestive...

The name of place as Deoghar is of recent origin, having no historical records before British Raj, the present town was earlier known as Vaidyanatha, Harda pitha, Haridra Pitha, Ravana Kanana etc. The reference of station and town as appearing in Asiatic society journal is given below:

"Deoghar as a name of the place is, however, quite modern. In Sanskrit works we find in its place Harda pitha, Haridra pitha, Ravana-kanana, Ketaki-vana, Haritaki-vana, and Vaidyanatha. In Bengal the place was generally known under the last name, but the East Indian Railway Company having opened a station near it and assigned to the town that has grown up around it the name of Baidyanatha, the people, for the sake of distinction, have used the name of Deoghar. In the Post Office seal the name is Baidyanath Deoghar"- Asiatic society, journal volume 52

As per Bengal District Gazetteers Santal Parganas, volume 10: “Deogarh is headquarters of the subdivision of same name situated 4 miles south east of Baidyanath station on the chord line of EIR, with which it is connected by a light Railway”.

Administration report 1886 of Indian Railway mentions that Baidyanath station is on the chord line of East Indian Railway, 201 miles from Howrah to Deoghur. Administration report of 1902 also mentions it as Deoghur branch connecting Baidyanath to Deoghur.

Subsequent Administration report of 1917 mentions it as Deoghur branch connecting Jasidih Junction to Baidyanath Dham , indicating subsequent change of names.

Administration report 1883-84 provides a summary of key activities of Deoghur Railway:

“During the first-half of 1883, the Rohini Branch, 1-1/2 miles, and the East Indian Railway Junction Station were completed, and during the year the work of putting in one extra sleeper per rail was in progress .All these works are now finished, and construction is practically closed.

The coal used on the Railway is from Kurhurbaree and costs Rs. 5-4-0 per ton at Baidyanath Junction. The consumption per train-mile during the year was 25·33lbs. at a cost of 11·4 pies. ·

The total mileage of the line is now 5-1/2 miles, the Rohini Branch, 1-1/2 miles, having been opened for traffic on 1st July 1883. The main line from Baidyanath Station on the East Indian Railway to Deoghur, 4 miles, was opened in December 1882. No serious accident occurred during the year. The line is worked entirely by Natives, and supervision and inspection are done by members of the Managing Agent's firm. The number of Native employees was 65.

The capital of the Company is Rs. 2, 75,000. On 31st December 1883, the amount paid up was Rs. 2,75, 000, and the expenditure Rs. 2,73,331. The revenue and expenditure for the year were as follows :-Passengers Rs 19,301;Goods Rs 184;Sundries Rs 154. Total revenue was Rs 19639. Total expenditure was Rs 13397, Maintenance of way, works and stations – Rs 2126, Locomotive expenses -4073 Rs, Carriage and wagon -904, Traffic expenses were Rs 3943 and General charges were Rs 2351. Net revenue was Rs 6242.

The year 1883 is the first year in which the line was open, and there is no previous period with which to compare it, but during the present year (1884) there is a substantial increase in traffic. Number of Passengers increased to 56093 in 1884 from 41745 in 1883.

There has been no special rush of pilgrims, and enquiries both in Calcutta and Deoghur are said to have elicited the information that the present year is an inauspicious one for pilgrims to Baidyanath.

There were no alterations in passenger fares during the year. The goods rates, when booking was commenced on 1st July 1883, were Rs. 1-9-0 per 100 maunds for all goods and

between any stations, but this has been reduced to Re. 1 per 100 maunds.”—
Administration report 1883-84

Summarised report of traffic as per Administration report 1898-99 :

“Compared with results from 1897, the gross earnings increased from Rs 30320 to Rs 32099 or by 1779 but the working expenses were Rs 6330 more, the net earnings showed a decrease of Rs 4551, having fallen from Rs 11152 to Rs 6601.

Of the increase in gross earnings, Rs 578 derived from coaching and Rs 1207 from goods traffic. The increase in coaching traffic was due to large number of pilgrims, visiting the shrine at Deoghur, owing to a plentiful harvest; and that under goods traffic, to the increased traffic of general merchandise.

The principal increase in the working expenses were Rs3348 under “Locomotive expenses” and Rs 1193 under “Carriage and wagon”, chiefly due to thorough repairs to locomotives and repairs to carriages.”

Net earnings of Deoghur railway were always positive; percentage of net earnings on capital outlay after 1884 was always above 3.5%, maintaining a range of from 3.5 % to 6.82 % of healthy returns. Similarly percentage of expenses to earnings, operating ratio, was within healthy range of 53% to 71.95%. Earnings and operating ratio of Deoghur Railway are given below:

Year	Total capital outlay	Gross earnings	Net earnings	Percentage of net earnings on capital outlay	earnings per miles in week	Percentage of expenses to earnings OR
1883	273331	19689	6242	2.28	79	68
1884	275000	23735	10704	3.2	83	54.90
1885	275000	23987	9908	3.6	88	58.69
1886	275042	25017	11748	4.27	100	53.06
1887	281180	25812	11521	4.1	104	55.37
1888	282876	28533	12695	4.49	115	55.51
1889	282616	26095	10915	3.86	105	58.17
1903	301057	40458	10622	3.53	162	73.75
1904	301058	46635	14701	4.88	187	68.48
1905	300558	45397	13582	4.52	182	70.08
1906	301256	53532	20553	6.82	215	61.11
1907	297054	56506	15849	5.84	227	71.95

Traffic details, number of passengers carried, Goods carried and net earnings from 1903 to 1909 are given below:

year	No of passengers in thousands	Goods in thousand tons	Gross earnings in thousand Rs	Working expenses in thousand Rs	Net earnings in Thousand Rs	Percentage of expenses to earnings OR
1903	262	15	41	30	11	73.11
1904	281	14	47	32	15	68.48
1905	278	14	45	32	13	71.11
1906	329	15	54	33	21	61.11
1907	341	20	56	41	15	73.21
1908	318	20	51	34	17	66.94
1909	310	19	50	33	17	66.26

This line was acquired by State on 1911 , on first available opportunity as per contract condition, and incorporated with EIR on 1st July 1911 and converted to Broad gauge on 13 September 1913 . Deoghur branch was laid with 75 lb double headed rails.

“Contract, dated the 25th October 1911, between the Secretary of State, the Deoghur Railway Company and East Indian Railway Company as to the transfer to the Secretary of State of the Deoghur railway and its management ,maintenance and working by the East Indian Railway Company as its part of the undertaking.” ;thus bringing to an end India’s first private Swadeshi Railway to be run and operated by Indians.

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