The Coach Making in EIR: Early Days

P. K. Mishra

"Friend of India" reported in May 1853 that Fifteen miles of the permanent way had been already completed, and by the cold weather of that year, the first 25 miles from Howrah to Serampore, Chandernagore, Chinsurah, Hooghly, and Bandel, would be opened for passengers. Five passenger engines and five goods engines had been ordered from England, and some of them were on their way out, together with the iron work for carriages, vans, and trucks, all which it was intended to put together in Calcutta.[1]

In March 1854, the newspaper "Englishman" informed that the portion from Calcutta to Hooghly was complete, and quite ready for the reception of traffic.
"The engines and carriages, however, as we are informed, have but lately been shipped in England, and though now on their way out, will not, in all probability, arrive here before the end of July. This, of course , must delay the opening, a subject which we have almost grown weary of alluding to." [2]

Directors of East Indian Railway Company had hired a ship, "The Goodwin" to send railway carriages for running the first train. The ship could not reach Calcutta and was grounded on the Gasper and Long Sand of Bay of Bengal.[i] A brief account of the incident had appeared in the news paper "Hurkaru":

"The *ship was beached above Kedgeree Creek, with 14 feet water in her hold. Lord Dalhousie was said to have ordered East India Company's steamer either the Zenobia or Berenice to be sent to her aid, no tug steamer being available. The Goodwin had first class railway carriages*.[3]
Zenobia, 200 feet long with net weight of 1100 T was commissioned in 1851. It was equipped with 280 HP engine while Berenice , a 756 T ship, was fitted with 230 HP engine.

The ship could not be salvaged, and it ultimately sank in Sand heads despite all attempts made by Governor General, Lord Dalhousie. Kedegree creek was infamous in shipping circles for its treacherous water and dangerous sand heads. So dangerous was the area that only specially selected pilots would be assigned to steer the ship there.
"We have before us twenty-nine wrecks, the majority of them belonging to Calcutta, lost within one year from May 1, 1853, to April 1, 1854. Some lost in the Hooghly, others in sight of it, most of these wrecks have occurred from Rangoon along the coast of Balasore, a distance of seven hundred miles."[4]

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[1] The Railway Times 1853, Page No. 524
[2] Englishman , March 3,1854
[3] The Indian News and Chronicle 1854, Page No. 412
[4] The Indian News and Chronicle 1854

Mr John Hodgson, the East Indian Railway Locomotive Chief Engineer, finding that the carriage models had been lost a few weeks before in the shipwreck of Goodwin at the sand heads, to save time, set about building some himself.
When these models were completed, he tendered to celebrated Calcutta coach-building firms of Messrs Stewart and Company and Seton and Company to build enough carriages, wagons and vans to start with. [5]

Tenders were invited for the construction of one hundred railway carriages and vans, all to be ready by the 1st of March 1855, and as many as possible to be completed by the 20th of December 1854.

"*The construction of railway carriages is being expedited with a view to meet the demands for seats; several of the second and third - class will be ready early next month, and others will be placed upon the line as quickly as possible; it is also said five locomotives have been set up at Howrah, and seventy more are to come from England."*[6]

The line from Howrah to Hooghly was finally opened for passenger traffic on August 15th, 1854. More than 3,000 applications, ten times more than seating capacity, were received from the people wanting a ride in the first train. The first train ran to full capacity. The train left Howrah station at 8:30 a.m. and reached Hooghly in 91 minutes.

EIR started coaching trains with only nine coaches, comprising the total coaching stock the line possessed: three first class, two second class, three trucks for third class passengers and a brake van for the guard. All these vehicles had been built in India without a model of any kind, under the supervision of Mr. Hodgson, the first Locomotive Superintendent of the East Indian Railway, the carriages sent out from England as models having been most unfortunately lost a few weeks before in the shipwreck of the Goodwin at the Sandheads.[7]

The population of coaches and wagons at the end of March 1855 was 93: first class 4, second class 8, third class 17, wagons & vans 64. The company had shipped from England 83 locomotives and 760 sets of iron works for carriages of all kinds.[8]

The Story of Steuart And Co., the coach builders of Calcutta

Steuart and Co. was one of the old-established Calcutta firms familiarly known to ticca gharry wallahs as " Buggy Steuart" in days when horse-drawn vehicles and Palanquins monopolized the roads. The firm was established in the year 1775. It turned out State Carriages and Elephant Howdahs of such make and finish that the general opinion was that they had neither been surpassed nor equalled by any other firm, either in India or in Europe.

"*The value of the Silver State Carriage we built for H. H. the Maharajah of Jheend, was about 75,000 rupees, and of the Silver State Howdah, 28,000 rupees. Our working establishment amounts to 7,000 rupees a month, and there are over 600 workmen in our employ. Our out-turns have been on an average 200 new carriages a year. The present partners of the firm are Mr. P. M. Kilgour and William Hay; and*

[5] A.F.C.DeCosson , The Early Days of EIR, Bengal past and present
[6] The Indian News and Chronicle 1854
[7] Bengal: Past and Present - Volume 2 - Page 55, Bengal Historical society ,1908
[8] Half yearly meeting of EIR August 16th, 1855

assistants in the practical department, Mr. A. W. Westrop and Peter Stewart, besides many other Europeans and natives."

The founders of "House of Stewart and Co." were Robert and William Steuart , who spelled their surname either Stewart or Steuart by the persistent substitution of "w" for "u". In 1807 the firm had reverted to the style of Steuart and Co.
They were coach-builders by appointment to H. E. The Viceroy and Governor-General of India, H. H. The Lt. Governor of Bengal, H. H. The Lt. Governor of the Punjab, H. M. the King of Siam, the Nepaul Government, and all the principal chiefs and nobles of Hindoostan.

One of the earliest allusions to Steuart and Co. in the Calcutta news papers was in the India Gazette : January 3, 1785.-
"*To be sold a Handsome Europe Post Chaise, new lined and painted with elegant medallions on the doors. Price 2000 S. R. [sicca rupees] . Also a very handsome new Buggy and harness with a remarkable quick Trotting Horse. Price 1000 S. R. Enquire at Messrs. Stewart's, Calcutta."*

The Calcutta Gazette, in January of that year, publishes a long account of the "*State Equipage allowed by Government to His Excellency the Persian Ambassador during his residence in this Presidency" and announces that the horses and vehicles will be sold by auction without reserve by Mr. De L' Etang at the Manége of the Repository. Towards the end details are given of two carriages which may be considered as sound as when [they] came out of Messrs. Stewart and Co.'s Yard*

Lot 9: A handsome Coach on a perch carriage, the body painted a fine dark blue, with a rich fillet of gold, and handsome mantles all round the pannels, the carriage part of a fine vermilion, with light blue mouldings, the whole richly varnished, and the springs gilt, the lining water-gabby (sic), trimmed with a most rich and appropriate lace, a full trimmed hammer cloth to the Coachman seat, front and hind lamps.
Lot 10: A most elegant Phaeton of a middling size, a crape necked carriage, light blue body, with rich and highly finished mouldings and varnished, the lining water gabby, with an elegant trimming : there is a hood and lamp attached to it.

The firm had a yard and manufacturing works at Sibpur , while finishing process was carried out in Calcutta. Evidence that 'Buggy" Steuart had become one of the institutions of Calcutta was supplied by a poem entitled "Calcutta in 1811 ", which endeavored to draw a picture of the evening drive on the "course", where "ten mouthfuls of dust" were swallowed for one of fresh air.

" Sedate they quit the ruminating chair,
And breathe abroad the evening dust and air;
As dips the Sun, of dazzling splendour shorn,
When the wide Fort resounds the evening horn,
Full many a soddened form, in jacket white,
Wings on the thronging course his airy flight,
Borne on the steed, or, perched with whip and reins.
In a dear specimen of Steuart's pains."

Stewart and Co. had made two Palanquins for the Mysore princes valued about 6 or 7 thousand Rs. These were embellished by Mr. Solvyns, a Flemish artist (from Brussels). The ornamental painting did Solvyns much credit in one colour only on a gold ground.

"*You can conceive nothing superior to the workmanship of these Palanquins (except some more expensive ones made since) all the metal with feet etc. overlaid with silver and in some parts solid silver, the lining velvet with rich silver or gold Embroidery and fringe*. "

Stewart later made two for the King of Tanjore's sons, costing nearly 10,000 Rs. each. They were Mahanas with venetians, etc., etc. Bedding and Pillows of velvet as the Lining. These Tanjore Palanquins appear to have attracted much attention for they are the subject of an announcement in the Calcutta Gazette of August 20, 1795 :

"*Two very elegant Mehannah Palanquins are just finished by Mr. Stewart who has shown great skill in the design and execution of them ; they are commissioned by the Rajah of Tanjore*." [9]

The Palanquin, which was carried by four coolies, was the oldest type of closed, or "bund ", gari. They were used principally for zenana purposes, although they were still on hire in the Calcutta Streets as late as 1900. The equivalent for the men-folk, apart from those who rode on horse-back was the tonjon, which was a kind of open chair with poles extending at the back and front and carried by four coolies in the same way as the Palanquin. In the Palanquin, the occupant had nearly always to recline : and when used by the women in the hot weather, these conveyances must have been very stuffy, as when the doors were closed there were no means of ventilation. [10]

The earlier ones were huge heavy cumbrous vehicles, 48 inches in width across the back. One of this type, which had been in the Apcar family for more than eighty years, was sent to Steuart and Co. in 1922-1923 for breaking up. Those that were built round about the 'nineties were only 40 or 42 inches wide. They had also what is known as a "full door," that is, the "stiles" were the full depth. One of the disadvantages attaching to the old Palki(Palanquin) was that there were so many blinds and movable parts to become loose that the noise and rattle were difficult to prevent.

Later, the Palki gari was replaced by the Brownberry and office gari or jaun. Palki garies, however, continued to be built in the bazar and were used as ticca bund garis up to quite recent year. The Brownberry which was designed by a man of that name in the employ of one of the old coach-building firms, was not a zenana carriage, and was used principally by Europeans. It had a small bottom door, and sliding doors to close when the weather was bad, with the sliding doors open, it was a more airy vehicle than the old palki. Both types in later years had double roofs, with an air space in between, for the sake of coolness. Rubber tyres were not put on any vehicles before 1900.[11]

Seton and Co. the other coach builder was based at 8, Cossitollah.

EIR had established a locomotive and carriage workshop in 1853 at Howrah near the salt Gola. Erection, furnishing and commissioning of carriages was undertaken at Howrah works. Construction and expansion of carriage workshop continued till 1859. Chief engineer Turnbull in his half yearly report dt. 8th August 1859 mentions: *The most important works in progress during the half year were the carriage*

[9] Bengal past and present 1930

[10] The Palki Gari was essentially a vehicle for family and Zenana purposes, having blinds all round and sometimes glasses in addition which could be opened or closed by the occupants. It was no uncommon sight to see eight or nine persons big and little, packed inside.

[11] Bengal past and present , July- December 1933

and wagon shops at Howrah, which have been completed and handed over to the carriage building department; there is now an area under roof for the carriage builders of no less than 168,225 sq feet. Locomotive works was transferred to Jamalpur in 1862. Howrah carriage and wagon workshop continued to function till 1900 when it was shifted to Liluah, due to further expansion of manufacturing and overhauling activities.
Moreover the designs of new Howrah station was finalised in 1899 and it required shifting of carriage shops before the new station could be built.
"The move became necessary because of cramped accommodation at Howrah and proposed entry of Bengal Nagpur Railway into Howrah Terminus."[12]

Carriage building shops and staff quarters, covered an area of some 200 acres. It was just *a little third class suburban station, and nothing to see except numberless tanks and a dense tangle of tropical trees and rank vegetation, surrounding the secluded homes of Bengali Babus*.[13]

Establishment of Howrah carriage works with its foundries, iron works, forging and carpentry section changed the ambience of the area with constant noise emitting from various machines and smoke belching out from multiple chimneys. There is an interesting case of Mr. Rajmohun Bose whose house was adjacent to Howrah carriage works. He filed a case in Calcutta High court in 1871 alleging the nuisance caused by the operation of workshops, forges and furnaces established by EIR. East Indian Railway Company had earlier acquired land from Bose family for construction of Howrah locomotive and carriage workshop.
The plaintiff claimed that emissions of smoke, soot and other pollutants had caused significant annoyance, diminished the value of their property and resulted in the injury of their premises. The plaintiff sought damages for the harms caused and requested an injunction to the continuation of the nuisance. Mr. Mackertich, the attorney of the plaintiff explained the extensive alterations and additions to abate the nuisance and presented the letter written by Carriage superintendant Mr. Pearce to remove the cause of complaint against smoke nuisance.
"*They built an entirely new brick chimney 60 feet high, raised an existing brick chimney by some 15 feet ; raised some 10 iron large chimneys from 38 feet to 53 feet : and added some new iron chimneys for carrying off smoke collecting in the roofs of the workshops. On these and other alterations the defendants expended a large sum, more than Rs. 5000*."[14]

The Calcutta High Court, after reviewing the evidence, determined that the EIR's activities did indeed constitute a nuisance. The court issued an injunction, ordering the EIR to take measures to abate the nuisance, including mandatory use of coke, instead of coal unless the wind condition dictated otherwise, to prevent further nuisance within three months.
This case would later become a landmark example of a successful legal challenge against industrial pollution, demonstrating the legal framework for addressing public and private nuisances.

In 1855, Robert Webb Pearce was appointed the Carriage and Wagon Superintendent of the East Indian Railway. He left England in December 1855; but finding his position not what he expected, he would have left the railway and started wagon-building works in India. He was persuaded however to remain, and afterwards had independent charge of the carriage and wagon department from Howrah to Delhi and Jubbulpore, about 1,500 miles of line.

[12] History of EIR by Huddleston
[13] The Railway Magazine 1906, Page No. 180
[14] Rajmohun Bose vs The East Indian Railway Co, Calcutta High Court ; November 18,1872

The large works at Howrah were designed and built under his superintendence, employing at the busiest time from three to four thousand native workmen, all trained under him. The whole of the East Indian Railway stock was built or erected at the Howrah works, together with a great portion of the stock in use by the metre-gauge railways.[15]

His designs were copied throughout India, and he was the first to introduce iron instead of wood for the panels and framing of carriages and wagons. He was also the first to recognise the valise of oil as a lubricant for railway vehicles, instead of grease. His design of an axle-box for oil and cotton waste was almost universally adopted in India. The improvements he introduced into railway carriages and wagons were so numerous and so important that he was called the father of carriage and wagon building in India.

A travelling carriage was built for the Governor General of India, at the East Indian Railway Company's Carriage Works, Howrah, near Calcutta, from the designs and under the superintendence of the company's carriage and wagon superintendent, Mr. Robert Webb Pearce in 1867.[16] Two four wheel carriages were joined together for making the state saloon carriage.

The carriage was composed of two separate bodies and under frames, the total length over the buffers being 53ft., each under-frame was 24ft. long, and centres of wheels 14ft. apart, on a total wheel base of 38ft. 10in .(wheel diameter was 3ft. 6in.), with safety dovetail tires, the axle boxes are of gun metal.

The two under frames were coupled together with buffer and draw springs screwed up with a compression of three tons, allowing just sufficient vertebral play to traverse a curve of 300ft, radius if necessary. The main saloon was 21ft. long and 8ft. wide, with one door on either side, fitted with folding steps for use only when away from the platform or at roadside stations, and the interior was very handsomely fitted with satin-wood and Spanish mahogany, the trimmings were of green Morroco leather, and painted panels and roof.

The sleeping compartments, &c., were accessible from the saloon by end folding doors and a platform 4ft. 6in. wide protected by brass hands railings. Sleeping compartment was 13ft. by 8ft., with a silk damask curtain to fold across at end of sleeping couches so as to form a dressing room when required.

Bath room dimensions were 8 ft. by 5ft., containing water-closet, wash hand-stand, and shower bath, all supplied from water tanks on the roof. Servants' compartment size was 8ft. by 5ft., fitted with shelves, hooks, lockers &c.

The carriage was 7ft. high in the clear inside from floor to roof. All the windows, sides and ends, slides up and down, and were supplied with glass and louvre frames. For protection from weather all the windows are provided with sun shades projecting about 10in. from the body all-round. The whole was covered by an extra or double roof, with water-tight joint over platform.

During the prevalence of hot winds, all the openings including sides, ends, and platform, were further protected by Khus-Khus tatties (mat screens) kept constantly wet and supplied from water tanks on the roof, through perforated pipes running all round the carriage.

Moulmein teak was used in the construction, and all the panels were narrow and in grooves in order to resist the extremes of dry heat and moisture. Varnished with copal varnish-made in the works-and picked out with gold and blue.

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[15] 1890 Institution of Mechanical Engineers: Page No. 292

[16] The Engineer August 9, 1867, Page No. 109

Robert Pearce was later joined by his younger brother Richard Pearce. Richard was sent out to India in 1861 to assist his elder brother Mr. Robert Webb Pearce in the carriage and wagon department of the East Indian Railway at Howrah, Calcutta. In 1867, he was appointed Assistant Carriage Superintendent; and on his brother's death in 1889, Richard succeeded his brother as Carriage and Wagon Superintendent of the East Indian Railway. Pearce brothers would run carriage and wagon activities of EIR for almost 36 years!

Liluah shop would become the most up to date carriage and wagon works in the world. In 1905, it had constructed State train for the use of Prince of Wales under the guidance of H. Kelway Bamber, Carriage Wagon Superintendant. Lord Curzon, Viceroy, found time to take a personal interest in the design of this train, and that the final plan, amended on his practical suggestions, bears his signature in token of approval. It also had the distinction of constructing coaches for Overland Express, the most luxurious train in the country. During the hot weather, at least one carriage was always completely filled with bottles of soda-water and blocks of ice, which were retailed to the passengers by the guard of the train.

The carriages for the royal train, used by the Prince of Wales during his trip to India in 1905, were built at the Carriage and Wagon Shops at Liluah. The train consisted of ten bogie vehicles: two Royal saloons, three staff saloons, one dining saloon, one kitchen carriage, one European servants' dining & sleeping carriage and two brake vans. Each saloon measured 71 feet 8 inches over buffers, and weighed approximately 45 tons, and was carried on six wheeled bogie trucks of special designs.
The vehicles comprising this train were reported to be in point of length, breadth, height and weight, far in advance of anything previously used to India or on British Railways.[17]
The total length approximates 680 ft. and the weight empty is 430 tons. The equipment of this train is very complete, and the furnishings are elaborate.[18]

"Englishman" called it the *most perfectly appointed conveyance the word has ever seen*.
Daily express London remarked: *It represents the highest type of the railway carriage builders' art, and excels anything that has yet been seen on the Indian Railways*.

The entire train was corridor-vestibuled, each coach being connected with the next by the latest type of collapsible gangway. The saloons had an entrance through an open verandah of the Pullman type and were fitted with massive hammered iron gates and screens. Heat resistant materials were used in the body side, panels and roofs, to keep carriages cool and considerably lighter for traction.

"The bodies of the coaches were constructed of Moulmein teak, and the frames and bogie trucks of steel. The train outside was painted white, and the mouldings picked out with a gold line. The Royal coat-of-arms was displayed on the lower body panels on each side of all the vehicles. Two Royal saloons were identical in interior arrangements and provided for a day saloon and a night apartment, each 18 feet by 8 feet 6 inches, and 16 feet by 8 feet 6 inches, wide, respectively. A bathroom 12 feet by 6 feet 6 inches, fitted with every convenience in the compartments was provided for both valets and maids, together with the necessary box rooms."

Altogether, the train was the most comfortable and luxurious ever seen in the East.

[17] Daily mirror -Reference in the press to the visit of their Royal Highnesses the Prince and Princess of Wales to India, 1905 – 1906, Office of the Superintendent of Government Printing,Calcutta
[18] The locomotive magazine 1904

For the internal decoration of these, polished wood had been used: Spanish mahogany, birds-eye maple and sycamore, picked out with mouldings of rosewood and teak. Care was taken to suitably blend and preserve the natural colours of these different woods.

The floors were covered with superb carpets, the design and colours of which matched the other decorations. The furniture in His Majesty's saloon was upholstered with dark green morocco and that in Her Majesty's with green silk tapestry. The bedsteads in the middle of the compartment were made of Cuban mahogany, inlaid with birds-eye maple and rosewood mouldings, the Royal arms appearing on shaped panels at the head and foot.

Other furniture items in the night apartment were the dressing table, hanging wardrobe, table, chairs, etc. The bath-rooms 12 feet long by 6 feet 6 inches wide, present a cool refreshing appearance. The floors were covered with unglazed tiles of dove colour with a deep border in chocolate and blue. The sides, as far as the window sills, were panelled with glazed tiles of pale green. A full size bath was fitted across the compartment at the further end, and the wash-hand stand and basin were of white marble, hot and cold water being laid on all metallic fittings in these saloons. The bed and bath-rooms including electric fans, switches, etc., were of oxidized silver finish.

The main electric switches and gauges as well as the patent fire extinguisher were conveniently placed at the end of each compartment. All the windows throughout the train were fitted with glass and venetian frames, with wire gauze fly guards.
The arrangement of the springs had been so carefully considered that it would be possible to dine with the train running at a speed of seventy miles an hour without spilling a drop of liquid.

Mr. H. Kelway Bamber, who has been assisted by his Deputy Mr. C. G.H. Danby, is to be congratulated on having turned out a train "worthy of the proud occasion for which it has been built, the cost being about £25,000. The workmen employed in the building of the train included Europeans, Anglo Indians, natives of Bengal, Bombay, Madras, Burma and the Punjab.

Saloon for Royal train

After the tour of the Prince and Princess the Royal train, which was built to the order of Lord Curzon, would be used as a State train for the Viceroy and Governor-General of India.

Liluah Workshop had the distinction of constructing another prestigious train called Overland express for the Calcutta-Bombay mail service via Bhusawal -Jubalpur-Allahabad. The train covered its journey in 52 hours with an average speed of 27 miles per hour. The complete train measured 371-ft. 8-in. over buffers, and had a tare weight of about 210 tons. It consisted of two composite luggage and 3rd class with 1st class and guard's compartment at the end, each 65-ft. 6-in. long, three 1st class day and sleeping saloons of the same length, and a dining and kitchen car 64-ft. 2-in. long (measured over buffers). The first and second-class carriages were painted white, while those of the other grades were brown in colour.

The dining-room had seating capacity for sixteen passengers, ten being accommodated at a longitudinal, and six at a transverse, table. They were provided with revolving seats similar to those used in a ship's saloon. The interior panelling was in red and white wood, while the car was painted white on the outside.
Each sleeping car was divided into four compartments, in size 7 ft. by 10 ft., containing four, longitudinal sleeping berths. The lower berths were transformable into seats during the day by means of a telescopic sliding arrangement. The bodies of the coaches, which were of teak, were built entirely at Liluah, and were mounted on Fox's pressed steel under frames and bogies imported from England.[19]

Such was the fame of the shop that royalties would outdo each other to get their luxurious saloons built at Liluah. Even the meter gauge and narrow gauge saloons for kings and queens were constructed there setting a benchmark of luxury and opulence.
"*We hear that sanction has been accorded to the construction of a saloon carriage, 59'-11" body, for H. H. the Nawab of Bahawalpur, at the workshops of the E. I. R. at Lilloah, at a cost of about Rs. 50,200*."[20]

All the carriages and wagons and various stock in use on the East Indian Railway were later constructed and repaired at Liluah. There one could see the most up to date electrically driven machinery.
Giving the details of improvement in third class coaches, H. K. Bamber, the Carriage and Wagon Superintendent of the East Indian Railway, reported that until 1902 most of the third class coaches were four wheeled, with a length of 27 feet and 6 inches. Tare load was 12 T, Payload 3 T with a carrying capacity for 60 persons. Each passenger was provided with 27.4 cubic feet space.

Each carriage was divided into six cross compartments, separated by open partitions formed by round iron bars arranged vertically. Each compartment seated 10 persons, no lavatory accommodation was provided and the openings in the doors and windows were fitted with wooden panelled shutters. The doors of these carriages opened outwards and large numbers of these doors were damaged. Often these doors were broken off by striking other open doors of passing trains. The distance between centre of tracks in BG , being 12 feet, was insufficient to allow two open doors(measuring 13 feet) to clear one another. [21]
In order to address the issue, Bamber built a few experimental 3rd class carriages in 1902, with doors opening inwards and with seats arranged longitudinally. These carriages were equipped with lavatories and with upper benches used for storage of personal luggage, also as sleeping berths. The body sides and roofs were lined with asbestos sheeting, a heat resistant insulating material. The doors and windows were fitted with glass and Venetian frames. The amount of cubic space per person was raised to 38.6 cft, an increase of 45%. These carriages were very commodious, well ventilated, and were

[19] Locomotive railway carriage and wagon review 1908
[20] Indian Engineering - Volume 36 - Page 105
[21] Advances in the Indian Railway development –H.K.Bamber, The Asiatic Review, 1916, page no. 199-205

greatly appreciated by the public. Carriages of the new type were rapidly adopted as standard throughout India.[22]
These modifications made it possible to build a new type of bogie mounted carriage for BG royal train to an overall length of 72 feet per coach, compared with earlier length of 58 feet 6 inches. Bogie type eight wheeler 3rd class carriage had a carrying capacity of 126 persons, with tare weight of 31.7 T and payload of 6.3 T. Cubic space per person was 37 cubic feet. Earlier the bodies of all coaching vehicles were constructed of Teak but prohibitive cost of the timber necessitated the use of steel, which, with the heat resistant lining, proved to be a highly suitable substitute.

In 1906, nearly 3,000 Indian mechanics, carpenters and workmen were employed in Liluah shop with a handful of Europeans to supervise. Liluah shop was being run by four officials in the superior staff grade: namely one Carriage and Wagon Superintendant at monthly salary of 1200 Rs, two assistant superintendants at monthly salary of 800 Rs and 600 Rs respectively and one sub assistant superintendant employed at 450Rs per month.[23]

H. K. Bamber, the Carriage and Wagon Superintendent of the East Indian Railway had introduced the Apprentice Mechanics scheme in 1904. The sons of upper-class Indians were accepted in the workshops of the Carriage and Wagon department of the Railway for training as mechanics, to become leading hands or assistants to European foremen. The scheme was planned to create a supply of thoroughly well trained and contented Mechanical Engineers to meet the existing needs of the railways and industries.

Europeans and East Indians who had passed the Middle School and Natives who had passed the Entrance Examination were eligible for admission. The candidates were required to have passed the entrance examination in mathematics of the Calcutta University, though they might have failed in the aggregate of subjects. They were also required to be physically fit, and must not be less than 15 years of age and not to be more than 19 years of age. The candidates were tested in Arithmetic, Algebra, Mensuration, Geometry, English Language, Elementary Physics, Elementary Drawing and General knowledge (History and Geography). [24]

The full period of training was seven years, and the first six months was probationary and without pay. Candidates had to sign an agreement for five years service to the Company.

The Apprentices during the period of five years were required to attend the Departmental Technical School regularly. A tuition fee equivalent to one twentieth of the salary was to be deducted monthly from their pay sheets.
During training Europeans and east Indians were paid 30 Rs in first and second year, 35 Rs in third year, 40 Rs in fourth year and 50 Rs in fifth year. While natives were paid 5 Rs in first year, 10 Rs in second year,15 Rs in the third year, 20 Rs in fourth year,25 rs in 5th year, 30 Rs in 6th year and 35 Rs in 7th year.

On satisfactory completion of the full term of training, native apprentices were eligible for promotion to the grade of skilled mechanic on Rs. 50 to Rs. 75, according to qualifications, and could thereafter rise under the Company's rules to Rs. 240.

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[22] Tare load 12.9 T, Payload 2.6 T; Seating Capacity 52

[23] Classified list 1903; salary of the locomotive superintendant was 2000Rs per mensem., while agent of EIR was paid 3000 Rs per month.

[24]Letter from W. A. DRING, Esq., Agent, East Indian Railway to the Secretary to Government, Revenue Department. Dated-Calcutta, the 15th August 1908.

"The great stumbling block to the success of the scheme was the rooted objection of higher class natives to manual labour of any kind, coupled with the fact that their social system does not permit of their engaging in pursuits where the initial salary is insufficient to maintain a man and his family."
Despite apprehensions, the scheme on the whole yielded fairly good results. Out of 34 native apprentices who had joined between 1904 and 1908 there were still 18 in the service, 3 having died and 13 left after serving a few months. [25]

The scheme slowly became quite popular and would continue to meet the need of shop floor supervision of EIR for next eight decades!

A residential colony was built around Liluah carriage and wagon works for its employees. The colony was held, by those who lived there*, to be the loveliest colony on the East Indian Railway.*
"There were only three roads, which between them perfectly exemplified the stratification of social rank and caste. The first, as you entered off that famous Grand Trunk Road that connects virtually every city of consequence in India, was Gardiner Road, consisting of mini-manors in the English county style, housing the colony's top "wallahs", including the managing director and upper management Next was Pearce Road, accommodating those just slightly less elevated in the pecking order, and finally came Jenyns Road, a mixture of homes for middle and lower management and, at that time, the only street with multi-storey apartment dwellings."[26]

Almost hundred years later after construction of Liluah colony, I got an opportunity to stay in one of the bungalows of the Gardiner Road. The Gardiner road was still the premier address. The pecking order was still the same but the colony had lost its old world charm and unplanned urbanisation of Liluah had taken its toll.

Advertisement for post of Assistant Carriage and Wagon Superintendent in February 5, 1907

The Directors of the East Indian Railway Co. require an assistant Carriage and Wagon Superintendent. Candidates should be about 25 years of age, and must have had a good general and technical education. Preference will be given to those who have served either pupilage or apprenticeship in the carriage and wagon workshops of a British railway or railway carriage and wagon builder and have also had "running" experience on a railway, but applications will also be entertained from men who have had a locomotive training and subsequently some experience of carriage and wagon work. Salary Rupees 250 rising to Rs. 350 per calendar month. C. W. Young, secretary, 28-30, Nicholas Lane, E.C.

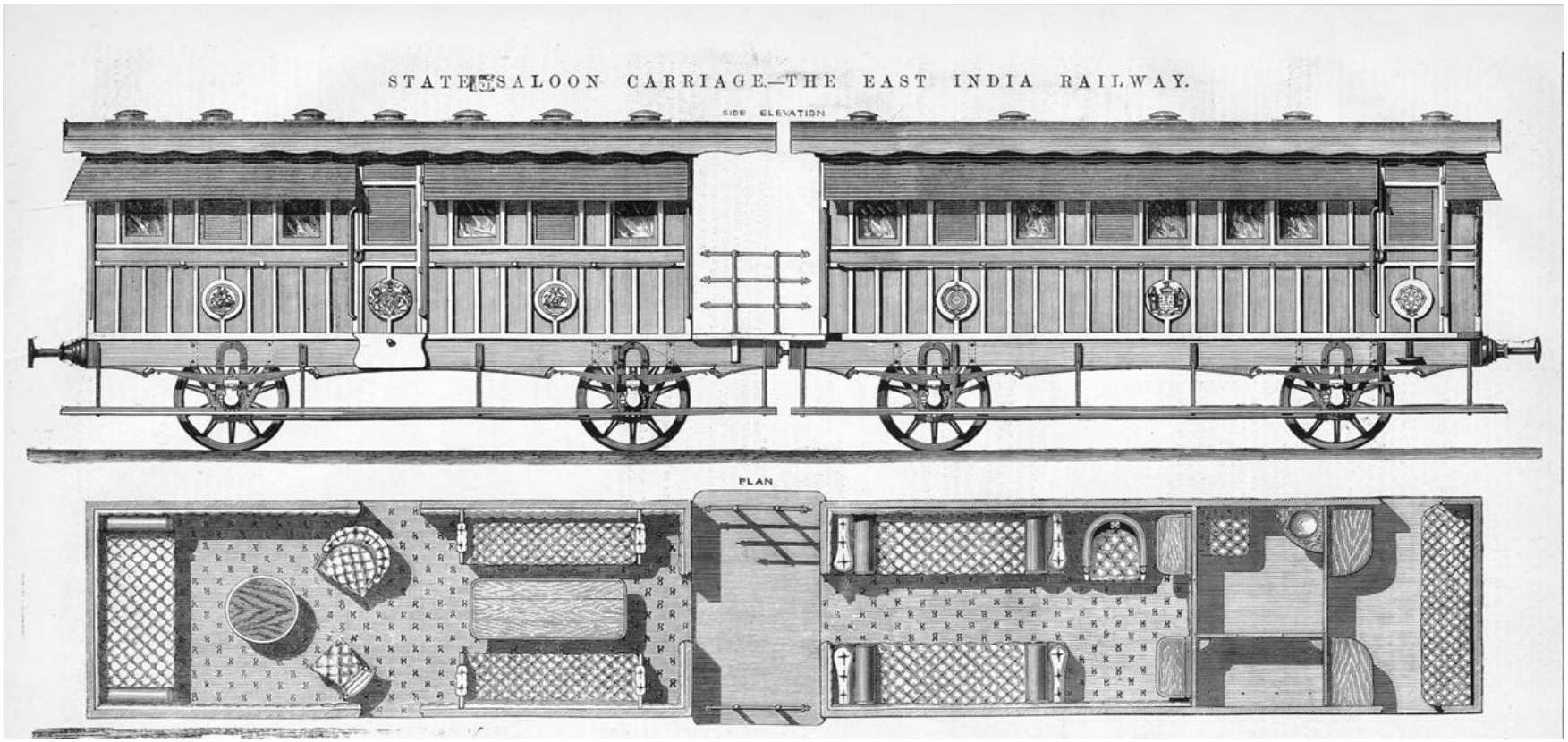
[25] The Times' Engineering Supplement of the 15th July 1908.
[26] Bye-Bye Blackbird: An Anglo-Indian Memoir Peter Moss · 2004- Page 56

End notes:

[i] The Calcutta port has a 232 kilometers (144 mi) long shipping channel. Most ships navigating the Channel require a pilot, and the sharp bends and submerged Sandbars of the Channel require the assistance of tugboats for larger ships. The channel extends from the Sandheads area of the Bay of Bengal to the Khidirpur Docks; in the 87 km (54 mi) long stretch from the Sandheads to the Sagar Road.

The Eastern Channel for the entrance of the port has the most submerged Sandbars. Notable submerged Sandbars in the Eastern Channel are Sankrail Sandbar, Baj Baj Sandbar, Royapur Sandbar, Falta Sandbar, Nurpur Sandbar, Rangafala Sandbar, Korapara Sandbar, Bedford Sandbar (upper and lower) and Long Sandbar (upper and lower).The Eastern Channel is divided into several smaller channels; smaller channels are mainly divided by submerged Sandbars. The offshore portion of the Eastern Channel is known as the Gaspar Channel, which has a minimum natural depth of 7 meters (23 ft),

State saloon carriage manufactured in Howrah Carriage works in 1867 for the Governor General


STATE SALOON CARRIAGE.—THE EAST INDIA RAILWAY.
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