

the rail enthusiast

Free e-Magazine

Vol. 5 No. 4 October 2020

The Rail Enthusiasts' Society Quarterly

HISTORY

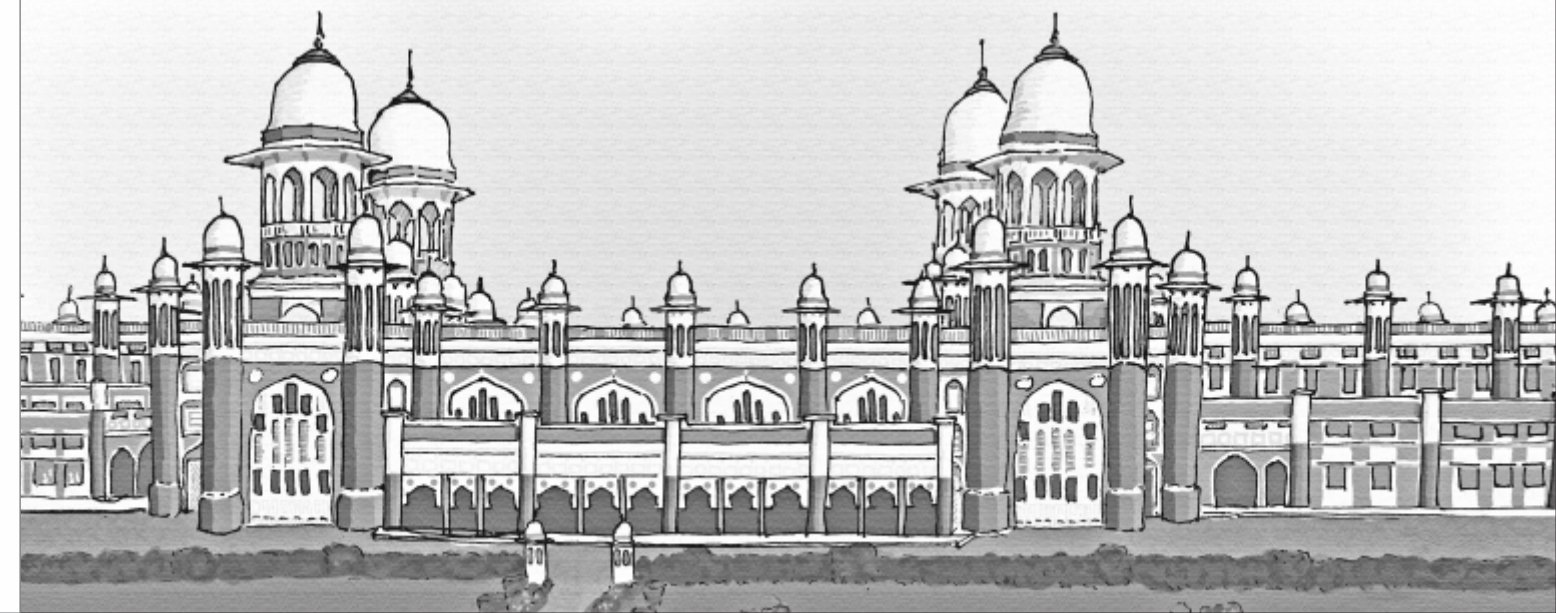
Heritage Clock Tower

TRAIN-18

The Unveiling

PHOTO-FEATURE

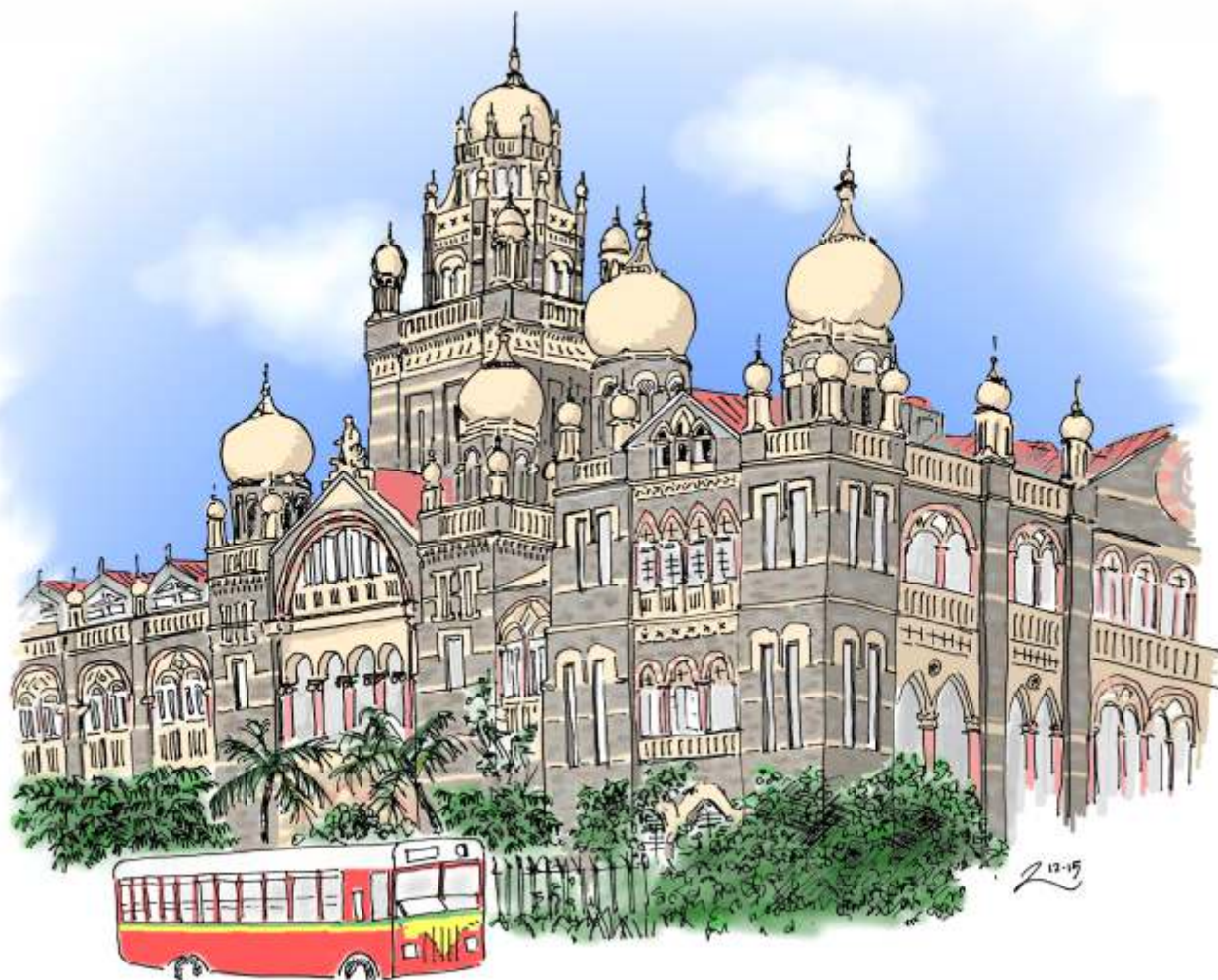
Calcutta Circular Railway



Western Railway Headquarters, Churchgate

Seen below is a rendering of the Western Railway Headquarters building at Churchgate, Mumbai. A combination of water colours and pen strokes, it was created by Rajat Bhargav, who is a second-generation railway man. He has now left the railways and lives in the USA and pursues drawing and sketching as a hobby. His father was equally adept in this.

The sketch of Charbagh station on the cover of this magazine as well as the sketches of Chennai Central and Howrah stations that appear in the 'News and Events' feature have been rendered by Rajat.



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of the Rail Enthusiast,
by the Rail Enthusiast &
for the Rail Enthusiast

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Musings of the Editor...

I am reminded of the days when the 1965 war against Pakistan was in full swing. This was well before the advent of the now ubiquitous online social media. All the same, canards and rumours of Pakistani paratroopers landing in Delhi were going viral during the conflict. Diverse colonies and residential localities in the city set up security groups to look out for the unseen paratrooper. One of these very alert groups found a suspicious looking person loitering around their area. They set upon this hapless soul and began thrashing him. With blows, lathis and abuse being hurled at him, the person finally blurted, "Please don't beat me. I am not a paratrooper; I am only a thief!"

Such were the times, that the beating stopped, and the security group let the thief go. I have been thinking of this incident as I find a strong similarity with the current situation with respect to Covid-19. You can be suffering from hepatitis, typhoid, yellow fever, or worse: the only illness that counts and is recognised is Covid-19. Other ailments and afflictions do not matter.

Covid-19 has taken over our lives. Whether it is your day to day chores, whether it is your job, whether it is entertainment, or news, we are being bombarded with Covid-19 directly or indirectly. It is for this reason that we have kept away from this subject. Since all our readers would have had a surfeit of Covid-19, we do not intend to add to further pounding by the virus through this publication.

Since the publishing of our last magazine, the Rail Enthusiasts' Society has launched another initiative. This is the organisation of a talk by one of its members on a subject of general interest. Of course, the subject must relate to the railways directly or otherwise. The first talk was delivered by Joydeep Dutta, our Vice President and an avowed rail enthusiast. He talked of his experiences as a rail enthusiast and kept his audience spell-bound with his adventures on trains. This was on the 23rd of August 2020. The second talk was by our President, Vinoos Mathur, on the subject "Rail Buildings of the Raj". Although a professional railway man, Vinoos Mathur has developed into a full-fledged rail historian with specialisation in rail architecture. His talk on the 20th of September 2020 led to a standing ovation. The third talk was by our Joint Secretary, Vikas Singh. Vikas has more hobbies than one can count fingers on one's hands, rail enthusiasm being one of them. He therefore talked of his experiences as a rail enthusiast but linked it with his other hobbies like Tintin, tea, etc.

Owing to Covid-19, we have been unable to get new members, advertisements or sponsors. The result is that our precarious finances are preventing us from publishing a normal physical magazine. Therefore, this magazine is also an eMagazine only. We are striving that by the time of the next issue, the situation will ease and we will be in a position to bring out a normal magazine.

All the best for the current festival season, and happy rail-fanning (whatever you can manage in these days of restrictions on travel and movement),

J L Singh
Editor

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Kolkata, the former Calcutta, is one of the most densely populated cities in the world, making it very difficult for commuters. One of the many solutions has been the Circular Railway. Take a pictorial ride around the city on the railway through the cameras of TrainTrackers



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Prashant Mishra has a reputation for restoration. He lived up to it by being the key figure in the rehabilitation of a heritage clock tower that adorns the main building of the Karnatak Arts College, Dharwar. This building was earlier the headquarters of the erstwhile Southern Mahratta Railway

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Vinoo Mathur is a historian and a deltiologist, i.e. a collector of picture postcards. Starting this issue, he shares his collection with a picture and a write-up on the original Poona (now Pune) station

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One of our oldest members, **Ranjit Mathur**, visited Pakistan in 1996 and again in 2006. A prolific writer, he narrates the story of our neighbour's railway from the formation of Pakistan to the beginning of this century

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Continuing our 'Eminent Railwaymen' series, **P K Mishra** tells us about the country's first consulting engineer for the railways, F W Simms

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What did advertisements for manpower look like on the railways in the 19th century? Have a look at two of them

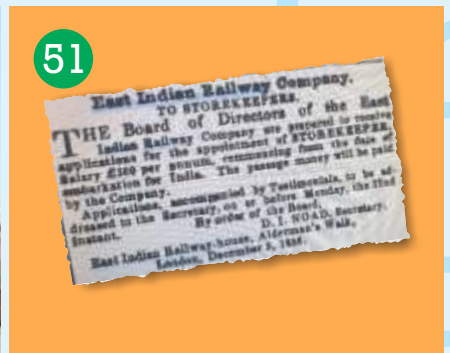
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After an agonizingly long wait, trains are operating at Bodinayakanur once again. **V M Govindkrishnan** writes of the recommencing of rail operations at this little-known town

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58 The Train – 5: Electric Locomotives

After a considerable break, we continue our feature "For our Budding Enthusiasts". In this issue, we have covered the electric locomotive, the mainstay of train operations in the country today

Inside Front Cover

A sketch of the Western Railway Headquarters at Chrchgate

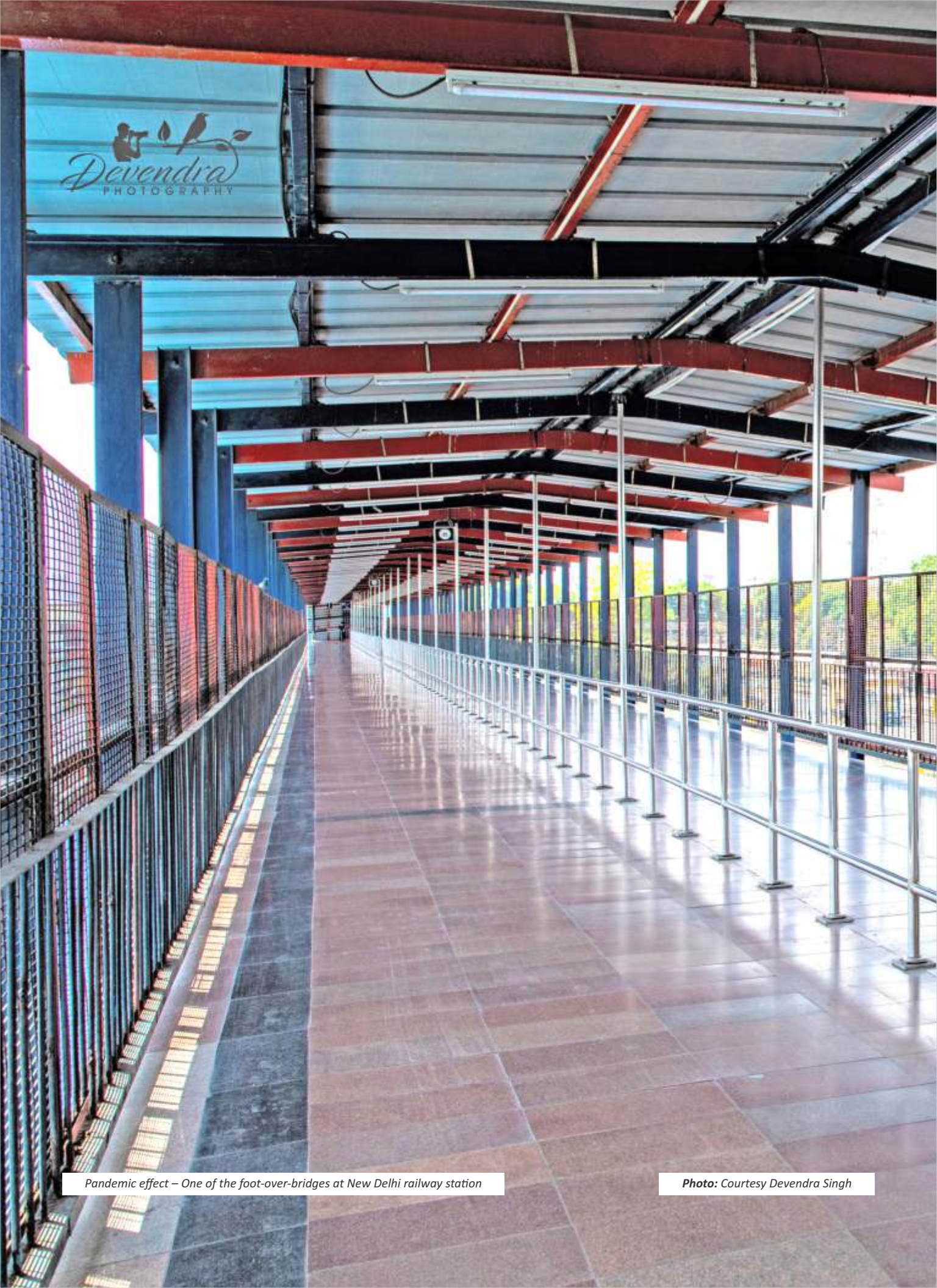
Inside back cover

"They Keep the Wheels Turning"; the story of Madhukar Kide



Back cover

Twin BG tracks reflecting moonlight
Picture: Courtesy Devendra Singh



Devendra
PHOTOGRAPHY

Pandemic effect – One of the foot-over-bridges at New Delhi railway station

Photo: Courtesy Devendra Singh

Feedback

Dear Editor,
Many thanks for this, as always, impressive magazine. Traditionally most people here seem to associate Indian Railways with steam, so this comprehensive coverage of the electrification story is a real eye-opener. I'm looking forward to reading the issue from cover to cover (or whatever the e-term is for that!).

It's splendid news that South Western Railway is so committed to heritage and is RES's first corporate member. Let's hope other Railway Zones follow its excellent example.

The two new books are clearly first class. I can hardly wait for my copy of each to arrive.

Very best wishes,
Paul Whittle
Vice Chairman
The Darjeeling Himalayan Railway Society
Received through email
05.09.2020

Dear Editor,
I have been a rail fan for quite some time. When I first started delving into locomotives and trains, most of the major trains were diesel loco hauled. With the advent of cheap air travel in the 1990s, I have been traveling less and less by rail particularly when I need to travel long distances. Thus, I am not as familiar with the electric locos as I was with the diesels.

The last issue of the magazine (Vol. 5, No. 3) has updated me on the amount of

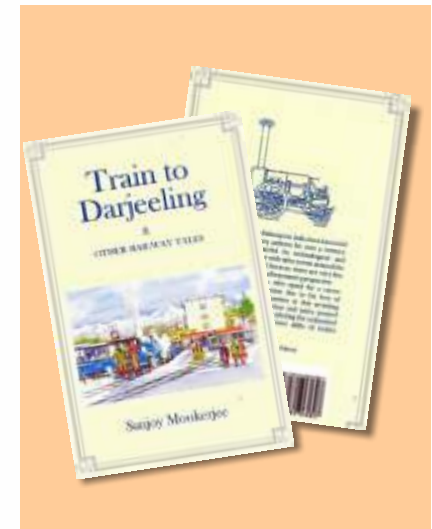


Semaphore signals that are now being replaced by colour light signals

electrification that has taken place and the kind of locomotives the Indian Railways is now running. I would now like to make another request: please tell us about signaling on the Indian Railways. This is another area that you have not covered in any of the 15-odd magazines that you have published till now.

Regards and best wishes,
Manmohan Mehta
Received through email
18.09.2020.

Dear Editor,
Thanks for the last issue of the magazine. Since I am located in Hong Kong, it is far faster and more convenient for me to get an e-magazine.



Train to Darjeeling

I really appreciate the inclusion of book reviews in the magazine. It is very rare to see reviews of books on the railways in mainstream magazines and newspapers. Thanks a lot. I am now waiting to get my hands onto both these books. I am particularly keen to read 'Train to Darjeeling'.

Waiting for your next magazine,
Prem Agrawal
Received through email
20.09.2020.



"Sir Leslie Wilson", one of the first electric locomotives to work in the country. It was named after the then Governor of Bombay Province

Signal photo: Courtesy Shouroshankha Maji
Locomotive picture: Courtesy NRM

History Calcutta Port Commissioners' Railway

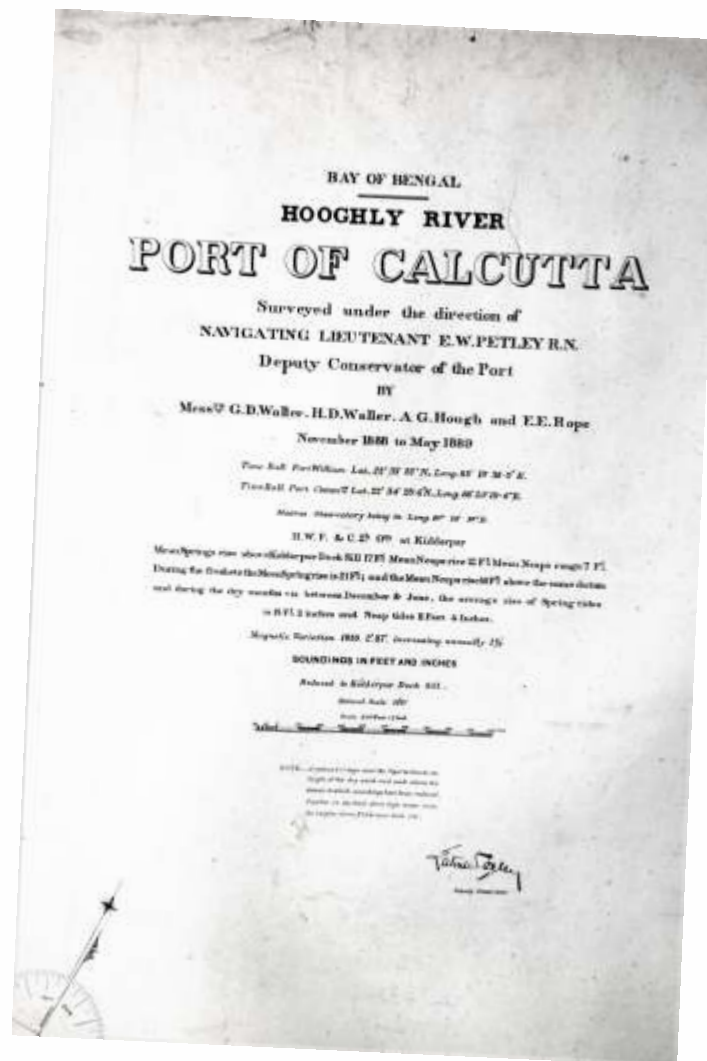
A Track Forgotten

Soumitra Pal

The River Trust of the Port of Calcutta (now Kolkata) came into existence in 1866 on the recommendations of the Chamber of Commerce after the failure of the Port Canning Project. The Government, thereafter, on the basis of a scheme of Hugh Leonard, decided to set up a Board of Commissioners for the Port which assumed office on 17th October 1870. The object was to improve the management of the port system of Calcutta to make it an example for other ports in India. With the construction of new port facilities and rapid growth of trade following the establishment of Port Commissioners, the port authorities felt the necessity to have their own railway network, a novel idea then.

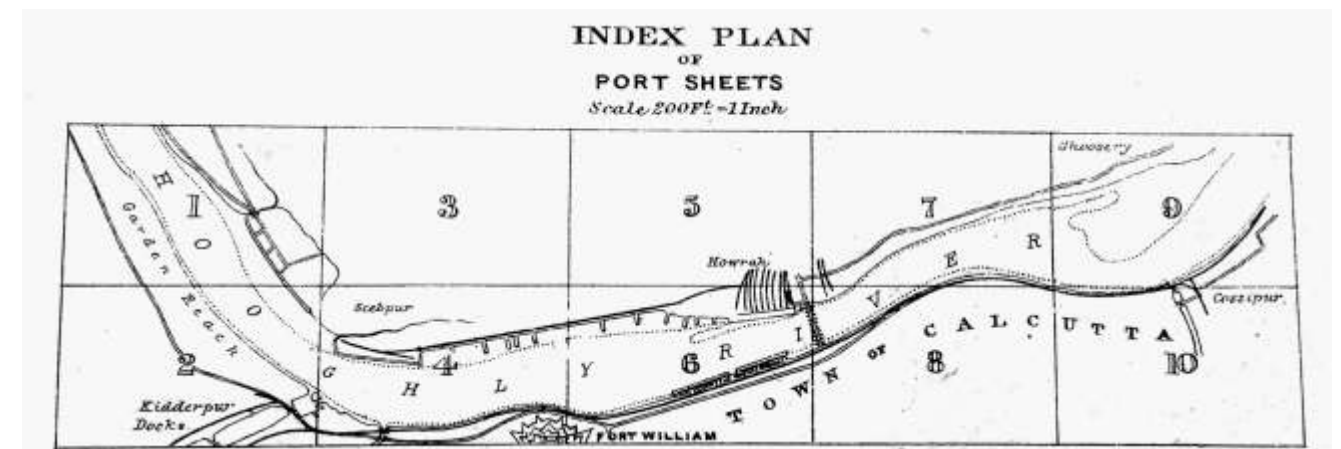
The Port Commissioners' own railway line was opened from Bagh Bazaar to Mirbohur Ghat in 1875. Thereafter, it was expanded in phases – from Bagh Bazaar to Cossipur and from Mirbohur Ghat to the jetties on the Ganges in 1878; in 1880 from the jetties to Chandpal Ghat and in 1891 from Chandpal Ghat to Kidderpore Docks. The line had two bridges – one over the Circular Canal at Chitpur and the other over Tolly's Nullah at Hastings. The floors carrying the rails on those bridges could be raised and lowered to allow boats to pass during tides. By 1893, the Commissioners of Port of Calcutta had 8.26 miles or about 13 kilometers of railway lines in its control connecting Eastern Bengal State

A lithograph of 1888-89 of the Calcutta port riverside wharves as seen from Howrah side. The EIR offices, Calcutta Port Commissioners' [CPC] office and the dome of the GPO are visible



Notification for the 19th century survey of the Port of Calcutta

Railway with the docks running from Cossipur to the Kidderpore Docks. In the "Eastern Section" of Sealdah there were two branch lines to Chitpur and Naihati. The Chitpur branch, which carried goods traffic only, left the main line near Belgachia and joined the Port Commissioners' Railway at Chitpur. The railway system maintained by the Port Commissioners was unique as it led to swift discharge of cargo from the ships and its transportation. With the augmentation of traffic, the concentration of the railway network was more towards the docks as there were additions to the newly built docks, mainly the expansion of



General map [1890] of the Hooghly river with the CPC railway line on the eastern bank [Calcutta side] stretching from Cossipore [presently Kashipur] to Kidderpore [presently Khidirpur] docks

the Kidderpore docks in the early 20th century as well as the setting up of a brand new dock system then called the King George's dock, now Netaji Subhas Dock, in 1928. The track length on both sides of River Ganges during 1950s, at the height of port activities, was about 250 kilometers. As only smaller ships entered the port, draft was not of much significance.

The Port's own railway had brisk traffic till the mid-1960s, when office goes to Dalhousie Square (now Binoy-Badal-Dinesh Bagh) or citizens having a stroll on the banks of the Ganges could see loading and unloading of cargo from the wagons on the railway tracks adjacent to Strand Road with ships' berths nearby or engines steaming along the tracks near Princep Ghat. However, the growing use of larger

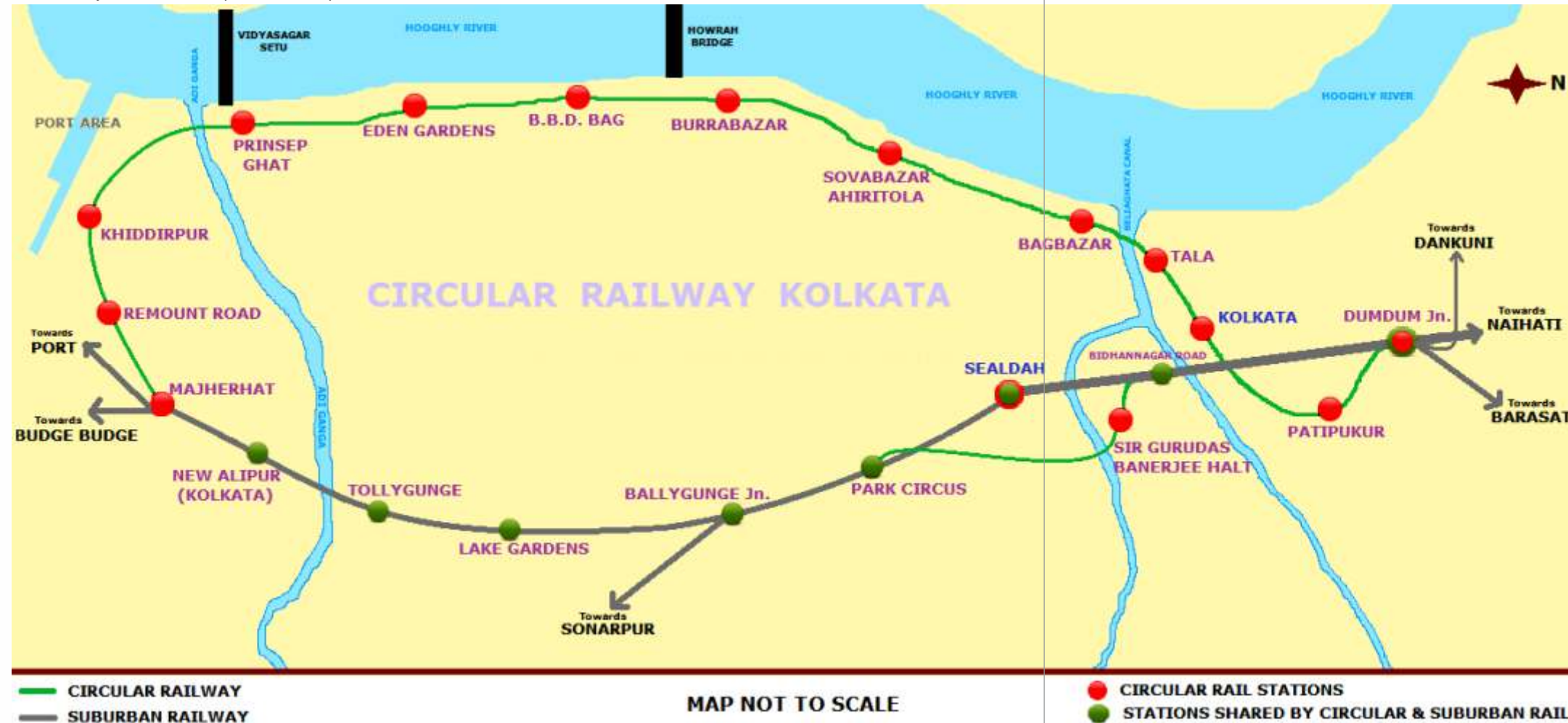
1890 map of river Hooghly with Calcutta port railway lines on the eastern flank of the river. The port warehouses alongside the railway are visible. Also noticeable on the extreme left is part of the hexagonal ramparts of Fort William. On the western bank of the river, Howrah Station is seen, alongwith EIR's 'barge ghat', to enable direct loading of goods wagons from boats





This map marks the port railway within the Kidderpore docks during the last decade of the 19th century. A closer look shows the locations of the buildings in the Garden Reach area, which housed the depots for indentured 'coolies' [labourers] before dispatch to the West Indies [Trinidad & Tobago] and British Guyana in those days. Most of this area was later taken over by BNR. Nowadays, it contains the headquarters and colony of South Eastern Railway

A schematic of the Circular Railway in Kolkata today



Kidderpore Docks today. They are now referred to as Khidirpur Docks

vessels requiring deeper draft, the riverine ports, Calcutta being one of them, suffered. There was gradual decline of the arrival of ships. In order to keep the operation of the port going, impounded dock system or a system where water was artificially raised, was introduced in Kidderpore docks. This led to a sharp fall in the movement of cargo and subsequently the gradual decline of the port's own railway. By the early 1970s, the line from Chitpore to Majerhat, via

Baghbazar and Chandpal Ghat, adjacent to Strand Road, was shut. In 1983, the Shalimar track, on the other side of the river, was closed. Many other tracks were also shut. By 2000, only 78 kilometers of track length remained.

At present 26 kilometers of track length and 13 kilometers of route length remain under the Kolkata Dock system operated by the Kolkata Port Trust (KoPT), currently known as Shyama Prasad Mookerjee Port, with Eastern Railway at times helping with the maintenance. Incidentally, Haldia Dock system, also under KoPT, has 105 kilometers and 16 kilometers of track length and route length respectively. Thus, tracks in Kolkata dedicated to the movement of cargo were lost. However, a part of about 18 kilometers of rail road which existed from Chitpore to Majerhat, via Baghbazar and Chandpal Ghat, was taken over in 1984 by the Railways and remodelled for the Circular Railway stretching from Dum Dum to Majerhat via Binoy-Badal-Dinesh Bagh and Kiddepore, operated by Eastern Railway.

Thus, the port owned railway, after about 100 years of existence, faded into history but not before it had left an indelible mark in the field of infrastructural development in various ports of the sub-continent.



A view of Circular Rail KoPT Dockyard

Maps: Courtesy archives of the Kolkata Port Trust and its Marine Museum, where they are preserved

Photos: Courtesy TrainTrackers

About the Author: Soumitra Pal is a retired Justice of the Kolkata High Court. He is a regular contributor to *The Rail Enthusiast* and likes to delve into the history of the railway in Kolkata and elsewhere

Photo-feature

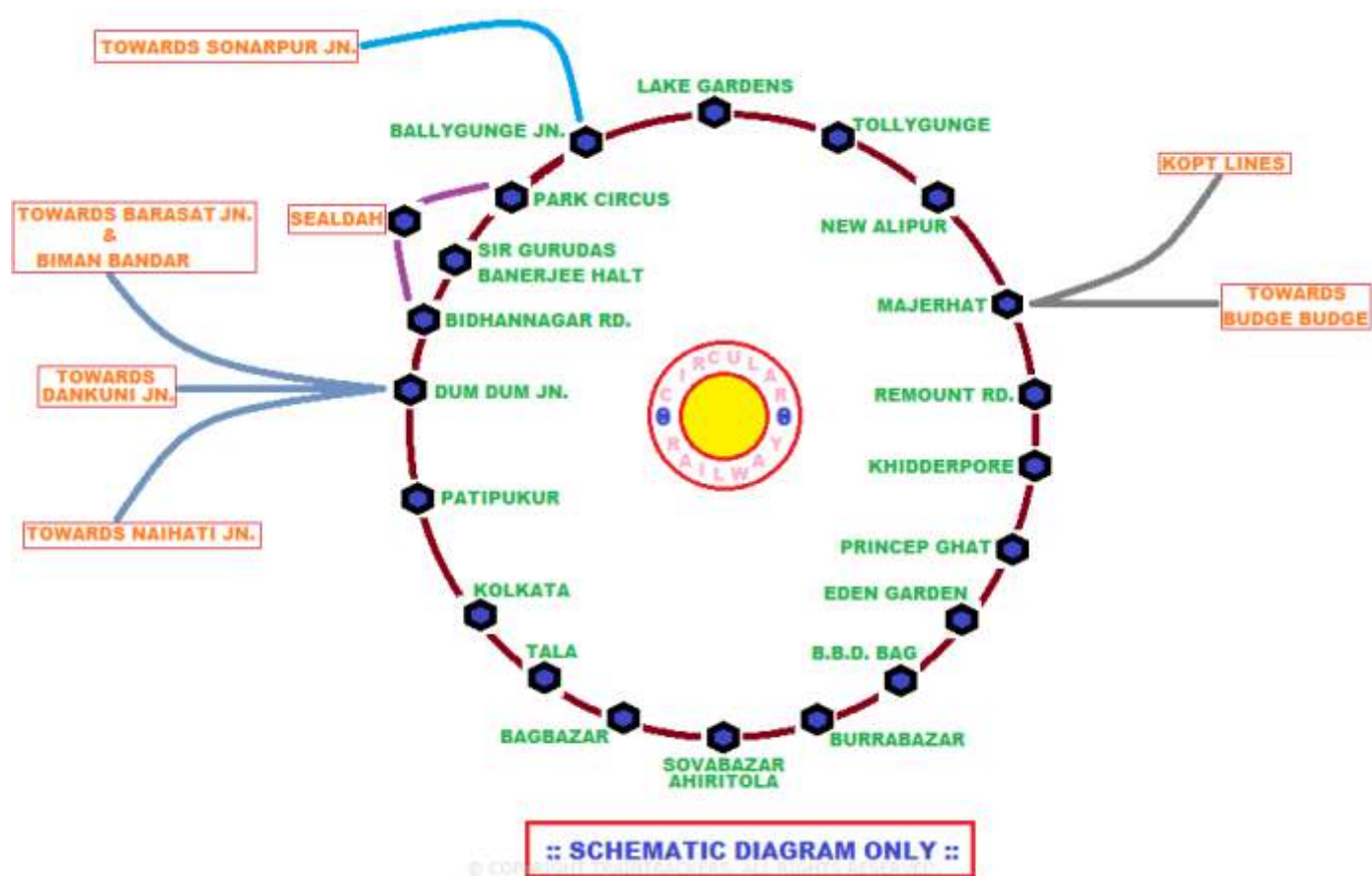
Kolkata Circular Railway

In the city of Kolkata transportation has been a perennial problem. For decades, suburban locals, earlier steam, later EMU locals, run by the Eastern Railway and South Eastern Railway have catered to the needs of commuters. Daily commuters converging on the Benoy-Badal-Dinesh Bag (formerly Dalhousie Square), Esplanade, Sealdah area, the Central Business District (CBD) add to the problem. To address this issue, in the 1950s, planners thought of a Suburban Dispersal Line from Dum Dum in the North to Kalighat in the South for a hassle-free travel, bypassing CBD. The proposal could not make much headway as in 1972 the administrators opted for Dum Dum-Tollygunje Metro. Later, as the planners found that this Metro may not be the only solution, in early 1984, a second thought was given to the dispersal line. The plan was to convert the then defunct Calcutta Port Commissioners' (later Kolkata Port Trust, now renamed Shyama Prasad Mookerjee Port) railway line

from Chitpur to Majerhat via Khidirpur into a circular railway. Thus, on 16th August 1984 the first diesel hauled train ran from Princep Ghat to Bagbazar. Later, it was extended upto Dum Dum Junction. In the South a viaduct was laid to connect Princep Ghat with Majerhat. The Kankurgachi Chord on the eastern fringe of the city was utilised by setting up Sir Gurudas Banerjee Halt Station to bypass Sealdah Terminus. Today, EMU trains from Naihati, Ranaghat, Barrackpore, Ballygunje move directly to BBD Bag or have the option to move from the northern suburbs to the southern suburbs avoiding CBD.

Thus, the Circular Railway was born and today is contributing considerably to the transportation requirement of the city's commuters.

All photographs are courtesy Somsubhra Das and Rudranil Roychowdhury of Traintrackers. They are both members of the Rail Enthusiasts' Society as well. Text is by our member, Soumitra Pal.



Logo of Kolkata Circular Railway

View of Patipukur Station



An EMU train standing at Kolkata Station on the Next Page



WELCOME

কোলকাতা
কোলকাতা
KOLKATA

16:34

WELCOME

13088

RHA

MAJERHAT
KOLKATA



One end of Tala Station
Bagbazar – Halt after Tala



Two services moving in opposite directions at Bagbazar
Sovabazar Ahiritola Station during non-peak hours





Booking counters at Burrabazar

The iconic Howrah Bridge as seen from the train



View of BBD Bag Station





The artistic BBD Bag Station
Beautification of the river bank along the Circular Railway



UP and DN EMUs crossing at Princep Ghat station



The outer signal of Princep Ghat gets dwarfed by Vidyasagar Setu on the Next Page





Khidirpur Station
An elevated section of the Circular Railway near Majerhat



Majerhat Station
The platform curves along the track at Tollygunge





Looking down the platform at Lake Gardens
Park Circus has an interesting looking foot-overbridge



Sir Gurus Das Banerjee Halt, the station set up to bypass Sealdah terminus
Dum Dum Junction – where you connect with three other lines



(Text by Soumitra Pal. Photos by Somsubhra Das and RudraniRoychowdhury of TrainTrackers)



The station board at Prinsep Ghat depicting the unique 'C' denoting Circular (Railway)

the port railway, opened in the same year. Sealdah to Ballygunj portion was already functional since 1862 as part of the Calcutta & South-Eastern Railway's route to Port Canning. Hence, with the connection at Majheraat, the port railway was also connected with Sealdah South and the other port at Canning.

Up North, beyond Baghbazaar, several complex connections were built after a huge tract of land, initially earmarked for a wide canal, was diverted for railway construction. The main line of Sealdah to Ranaghat via Dum Dum of EBR was already functional since 1862 and soon several connections

started spreading all over South Dum Dum towards Chitpore and Cossipore in the early half of the 20th century.

The very first extension around this part of the network was from Cossipore Gun Foundry Road to Belgachhia Bridge which served as a marshaling yard while the terminus of Chitpore (not to be confused with Chitpore/Kolkata terminus of today) was used primarily for transshipment of river borne goods. This was constructed in phases between March and September of 1903.

Another route, now lost in time (presently converted into a road) was constructed between Dum Dum Cantonment

The Northern area around Chitpore and Bagbazaar in 1877. The canal is yet to be bridged, but a terminus at Chitpore seems to be up already. The railway track abutting "Bag Bazar Street" is the Calcutta Municipal Garbage Railway's Northernmost trackage



An EMU is seen waiting for the opposite service to arrive at Prinsep Ghat station. Almost half of the Circular Railway is still single track

and Patipooker avoiding Dum Dum Junction altogether and was opened on 1st August 1904. Following this, the Patipooker to Chitpore connection was established on 4th December 1910, and finally, Dum Dum Junction was connected with Chitpore in two phases between December 1913 and October 1914.

The last connection via the Kankurgachi Chord in the East was thrown open on 1st February 1907. It finally established a direct main line connection between Sealdah's Main and North section with the South while bypassing the Sealdah station area altogether.

There are several other smaller sections in what was known as the Port Commissioners'/Trust's Railway, but since they did not form or become a part of the future Circular Railway, will keep that for another day.

Photos: Courtesy the author

Maps: General Atlas. London: published under the superintendence of the Society for the Diffusion of Useful Knowledge by George Cox, 1853 and Survey of India, 1877. Both from the collection of John R. Borchert Map Library and accessed via Princeton University Library's Digital Maps and Geospatial Data Centre. Other maps were resourced from the personal collection of the author.

About the Author: Sourashankha Maji is a rail enthusiast with a deep interest in the history of the railway specially in and around Kolkata. He can be reached at sourorail@gmail.com

The route abuts the river for little more than 7 kms. South of Howrah bridge it goes through some dense foliage along the riverside promenade



History

Restoration of Heritage Tower Clock

Prashant K Mishra

The Southern Mahratta Railway (SMR) company was formed on 1st June 1882. The Railway's first section was a metre gauge line from Bellary to Hospet (40.5 miles), opening commercially on 24th March 1884. In 1886, management of the Mysore State Railway was taken over by SMR. In 1888, the railway was extended from Londa towards the West of India Portuguese Railway (WIPR), connecting with the latter at Castle Rock.

The Central Offices of SMR, an attractive picturesque building with a blend of colonial and local architecture, was constructed at Dharwar under the supervision of Chief Engineer, Col. James Gavin Lindsay, formerly of the famed Corp of Engineers of the East India Company. Chairman of SMR and WIPR, T Douglas Forsyth, after visiting the entire Southern Mahratta region in the year 1883-84, had selected Dharwar as the site for the Headquarters of SMR. This was on account of its elevation above mean sea level of 2586 feet, its central location on the system, its healthy character and its position as a military and civil station of the Government. Construction was completed in the year 1890 and the Central Offices' of SMR started functioning the same year with G M Stewart as Agent, Col. Lindsay as Chief Engineer, C Whitecombe as Locomotive Superintendent, J Craik as Traffic Manager and W O Donoghu as Auditor.

The main red brick and stone building, a T-shaped neo-Romanesque symmetrical structure encompassing 23,000 square feet of plinth area, with its arched windows, front portico, clock tower, spiral staircases, Italian floor tiles, Badami stone arches and slanted tiled roof supported by cast iron frames and columns, stands majestically and is one of the most beautiful railway company headquarters ever constructed in the country. SMR had used prefabricated cast-iron columns, wrought-iron beams and trusses manufactured by the renowned engineering firm, Richardson & Cruddas, Byculla, Bombay, while front staircases were manufactured by Walter MacFarlane & Co.,

Glasgow, the most important manufacturer of ornamental ironwork in Scotland.

Subsequent to the merging of SMR with Madras Railway and formation of a new company, Madras and South

Front view of the erstwhile Southern Mahratta Railway Central Offices, now the Karnatak Arts College



Mahratta Railway (MSMR), with Headquarters at Madras (now Chennai) in 1908, the Government of Bombay Presidency purchased this building at a cost of ₹ 3,26,956 from MSMR. They wanted a premises for higher education and the Karnatak College, Dharwar, was inaugurated by the then Governor of Bombay (now Mumbai), H.E. Sir George Lloyd on the 15th of July 1920.

The clock tower of the building, centrally located, is adorned with two clocks displaying time majestically on both sides of the Central Offices. In those days, its sweet chimes would reverberate up to a distance of three kilometers, announcing the current time to the inhabitants of the city.

The tower clock was imported from London by the legendary clock maker, P. Orr & Sons, Madras, and commissioned in 1890. The company was started in 1846 by Peter Orr who had arrived in Madras in 1843 from Scotland, on the foundation of the nascent George Gordon & Co., turning it into the leading watchmaker in the country.

Gear boxes and mechanisms of the clocks are housed in a large room on a raised wooden platform twenty feet above the first floor. Clocks facing both sides of the building are connected with wire ropes and pulleys from the central mechanism. The gear box dimensions are 2'9"x1'8"x1'1". A beautiful brass bell (diameter 2'6" and the same length) adorns the clock tower. The hour hand of the clock is 1'9" in



Location of the clock above the first floor

length while the minute hand is 2'5" for proper visibility. The pendulum, 7'10" long, is equipped with a time adjusting mechanism for temperature compensation.

Members of the South Western Railway's Heritage Team, including Roopa Srinivasan, the Principal Financial Adviser, E Vijaya, Dy. General Manager, and this writer had visited Karnatak Arts College earlier in June this year to see the erstwhile Central Offices of SMR. The Principal of the

Plaque of P Orr, original suppliers of the clock



College and one of the Professors stated that the tower clock was not working since 2010 and all attempts to make it functional had proved futile. The College had contacted the HMT Watch Factory at Bengaluru for the repair/restoration of these clocks. HMT had been unable to restore the old antique clock and a quartz solar clock with a striking attachment had been installed. The heritage clock, a silent witness to the glorious journey of more than 120 years, was lying in a corner, abandoned, silently gazing at the anachronistic quartz clock, while the components of the antique heritage clock were slowly turning into a heap of scrap.

The Central Offices building, a tribute to colonial railway architecture, is truly breath-taking with its elegance, timeless appeal and bewitching charm; we had selected the picture of the middle portion of the edifice along with the clock tower as the cover page of the book "Southern Mahratta Railway and West of India Portuguese Railway – a Historical Sketch".

Since this building being a shared common heritage with the railways, we offered the assistance of SWR for restoring the tower clock of the erstwhile Central Offices of SWR. This



Some of the gears and components that were repaired

clock. It was a daunting task due to the non-availability of spares and lack of trained manpower for repairing vintage clocks.

Most of the components had worn out, certain parts were missing, while some were in a broken state. Gears had developed backlash and ovality, gear teeth had worn out completely, some of the gear teeth and linkages were found cut, perhaps results of past attempts of repairs. As M/s P Orr had stopped the supply of spare parts for the clock, it was decided to manufacture or reclaim the missing, worn out and damaged components in house.



The clock mechanism

was gracefully accepted by the Principal of the college. Subsequently, a request letter was received from the Registrar of Karnatak University, Dharwad, on the 25th of August 2020, urging for repair/restoration of the original mechanical analogue tower clocks for upholding the glory of the Karnatak Arts College.

The Principal Chief Mechanical Engineer of SWR, P R Kumar, and the Chief Works Manager of Hubballi Workshop, Niraj Jain, accepted the challenge of restoring the heritage tower

A team comprising of V V Vishwanath, Sr. Section Engineer, D S Londe, Sr. Technician, along with Technicians, Mansoor Ali Mulla and Altaf (Retired), was formed under Anwesh Kumar Aileni, Dy. CWM for restoration and repairs of the antique clock.

After a careful inspection of the clock at site, the defective, broken and worn out parts were collected and brought to the workshop. The missing parts were also worked out and designed. The available parts were then reclaimed through



A closer look at the clock mechanism

various processes like gas and arc welding, machining, filing, etc. Missing parts such as counterweights, pins and arms were manufactured in house. After reclamation and repairs were completed and the missing parts manufactured, both the clocks were assembled and finishing touches given. The mechanism was then kept under observation for 3-4 days. Only when it was ensured that the parts were working well, the hour and minute hands were connected to the original clock by duly disconnecting the anachronistic quartz analogue solar clock that had been installed by HMT, Bengaluru.

The Tower Clock from another angle



It is to the credit of the Railway Workshop team at Hubballi that they successfully completed the restoration of the tower clock, which not only involved repair and restoration but also the manufacture of some of the lost and missing components. The conditions of working in the tower were also challenging and difficult. The clock tower bell that had fallen silent after 120 years of incessant chiming, has begun to toll once again.

Not to rest on its laurels, SWR is not stopping at merely restoring the clock. They would like to see the clock operating for at least another century. For that they are now planning to have a plastic transparent cover for the clock mechanism so that dust ingress is reduced. By doing that, wear and tear of the moving parts will reduce. In addition, means of lubricating these parts are also being worked out.

It is extremely heartening to see that the iconic tower clock, the land mark of the city and common heritage of SWR and the Karnatak Arts College, was restored to its former glory this year as this is the centenary year of the college.

Photos: Courtesy South Western Railway

About the Author: Prashant K Mishra is the current Additional General Manager of the South Western Railway. His interest in rail history and restoration is well-known and has been documented in *The Rail Enthusiast*. He had done yeoman service for the Division by restoring a large number of heritage buildings when he was Divisional Railway Manager at Asansol.

Train 18

The Unveiling!

Sudhanshu Mani

Train 18! It took only 18 months from the the drawing board to the unveiling of the prototype; and the unveiling took place in October 2018. Train 18 certainly lived up to its name. Some time towards the end of November 2018, this totally indigenous train for the first time ever in India, scaled the 180 kmph speed barrier!

Christened the Vande Bharat Express, Train 18 began operations on the New Delhi-Varanasi route on 15th February 2019. This was followed soon after with a second train on the New Delhi-Katra line. Both trains ran flawlessly till Covid-19 brought them, along with all other regular passenger trains of the Indian Railways, to a grinding halt. But for the pandemic, Train 18 would have been running even today.

The train was unveiled on the 27th of October 2018 at Chennai. Read of the unveiling straight from the horse's mouth, Sudhanshu Mani, then General Manager of the Integral Coach Factory (ICF), whose passion and belief in ICF led to Train 18 becoming a reality...

October 27th 2018! A bright sunny day! The day passed off like a breeze and I find I am still overwhelmed to describe the magic of the day. I can only try.

The unveiling was planned in the afternoon. I managed to get a peek at the preparations early in the morning and again around noon. There were some last minute hiccups but let me not go into that because even I do not know who did what to set things right. The entire team was around. Most of my time was taken up by more than ten TV interviews in the train itself; we had permitted a short preview to all the journalists. Apart from me, based on availability, some other senior officers were also moving frenetically on the train, giving preview bytes independently to media.

The Chairman Railway Board (CRB) arrived post lunch and we gathered in the museum mini-theatre; this mini-

Train 18 on the day of the unveiling'



theatre was recently commissioned and I was told that with its state of the art projection and sound system, it was quite unique in Chennai, in spite of the city being a major movie-making centre. Member (Traffic), Member (Stores) and General Manager (East Central Railway) had already arrived whereas Member (Engineering) had to back out at the last moment due to an inescapable engagement. Most of the officers and some selected supervisors and staff were present there. A large group of senior retired officers, including two ex-CRBs, some ex-Members and many retired GMs were already seated there. Such a large presence of IR luminaries is rare and I was happy to see it as it confirmed that they knew that something spectacular was going to unfold that day. A short movie on Train 18, which had been made through a professional agency, was screened. It fired but one emotion, that a train of historical significance was going to be unveiled.

Five minutes before the time of unveiling, we left for the venue in Furnishing Factory in cars and buses. A phalanx of media men and journalists was crowding in front of the veil, the curtain. The whole of ICF also seemed to have descended there. I could see some housewives and children too; God knows how they had sneaked in. But this was not the time to look at all that. The crowd was orderly and a good presence of RPF and other volunteers had been arranged to steer and control the crowd.



The CRB pressed the button to open the curtain. As the *Dollu Kunitha* group started their loud and intense drumming, deafening cries and energetic jumping, CRB flagged off the train which moved a small distance towards us. Had it been Varanasi, you would have heard, raucous “Har Har Mahadev” but this was Chennai, the shed reverberated with explosive clapping and cheers.

We moved towards the train, got in from the cab and moved right till the end through the gangways. Accompanying us were the members of the Board, ECR GM, retired luminaries, ICF officers, journalists and so many others; there was no stopping anyone.

There it was, Train 18, the first semi-high speed train set of India, conceived, designed and manufactured entirely by ICF with the support of so many other Indians – the coming of age of IR engineers. The proudest moment ever for ICF. I looked at the cheering crowd. Multiple labour pains, agonies, irritations and traumas of two years were forgotten in one split second and all that remained was elation and exhilaration, bordering on hysteria.

Train 18 was ready for turn-out in October 2018, justifying its name fully as it was another two months before the calendar year 2018 ran out. The Train 18 project had taken exactly 18 months from drawing board to unveiling of a prototype unit ready for turn-out from April 2017 to October 2018. Eighteen months. It had lived up to its name twice over.

There were so many requests from media channels and newspapers for an interview with the CRB and me that it was impossible to accommodate all. We tried as much as we could. I was, once again, glad to see other officers also giving bytes to Press and Media in the train and soon they, along with me, were there all over the national and vernacular media. We would again be there, proudly spread over all the major newspapers the next day on the front pages, with a picture of the sublime and majestic train. After the CRB left, it was time to meet the core team members with Shubhranshu, the Principal Chief Mechanical Engineer, thank them and finish off sessions with media men still lurking around for a byte and then for *laddus* with the ICF office staff who could not attend the unveiling.

I am assuming that most of you are aware of the Train 18 magic and how it took the country by storm. You may



Sudhanshu Mani, tallest person in the picture, with the Train 18 design and manufacturing team

also have heard of the deliberate negativism, which has halted its proliferation.

After the turn out, the train was taken for extensive on-line testing for roadworthiness and safety with full involvement of RDSO. The testing had to be done in various stages: on ICF test track, onward dead movement to Delhi, main line tests in Moradabad division and high speed test on Kota-Sawai Madhopur section. The tests continued with some hiccups, some natural but mostly issues concocted by the train's adversaries here and there. Our team was there to take care of all problems, genuine or fabricated. Came a day in late November that the train breached the 180 km/h speed in testing, with all parameters well within the safe limits. I was in a train near Vizag keeping a tab but keeping my peace by not disturbing the test team with frequent nagging questions. Soon enough, but after what felt like days, Shubhranshu sent me the news about the train clearing the high-speed test. Naturally, I was instantly overjoyed, happy as a flea in a doghouse. Shubhranshu sent a video clip to me immediately after distributing *laddus* on the train. The video captured two bottles of water in the train shaking ever so slightly at a speed above 180 km/h. I tweeted it then and there. The caption I wrote was, “*zor speed ka jhatka dheere se laga*” (a take on a popular TV ad by Amitabh Bachchan which, translated roughly, means 'the shock of high speed was felt very 'smoothly').

Photos: Courtesy the author

About the Author: *Sudhanshu Mani is a mechanical engineering officer of the Indian Railways. He was the General Manager of ICF when he conceived and put Train 18 together.*

He had the vision to realize that the staff at ICF was capable of this seemingly impossible task.

Original Poona Station

Vinoo N Mathur

Preamble

The first postcards in UK were issued by the British Post Office in 1870. These were plain with a stamp printed on them. One side was for the address and the reverse for the message. In 1894, private entities were allowed to publish postcards which had to be stamped before mailing. Thus began the era of picture postcards. However, one side of the card was still reserved wholly for the address and the message had to be squeezed into the bottom, corners or on the image of the picture side. In 1902, the British Post Office decreed that the picture would be on the front (recto) side, while the back (verso) would be divided into half, the right hand for the address and the left for the message. 1900 to 1915 was the Golden age of picture postcards when billions were mailed annually.

Today's younger generation should remember that there was no Internet then and this was perhaps the easiest and cheapest way to exchange images. In 1899, the British Standard Newspaper wrote: "The illustrated postcard craze, like the influenza, has spread to these islands from the continent, where it has been raging with considerable severity".

A very large number of picture postcards were published on India covering a wide range of themes such as historical monuments, social life, scenic places, etc. A significant number related to the Railways. The picture postcards were published by a large number of publishers on orders from merchants and traders from Indian towns and cities. The cards were printed in the U.K. or Germany. German presses declined after 1915 as a result of WW1. I have been collecting picture postcards of all types of Indian Railway



buildings and have a sizeable collection. Like stamp collecting, postcard study and collecting is a very popular hobby, known as deltiology, across the globe. It is proposed to illustrate one picture postcard in every issue of **The Rail Enthusiast** with a brief write-up on the building.

We begin with the original station building of Poona Station (now Pune).

The Original Poona Station

Poona fell on the South East mainline of the Great Indian Peninsula Railway (GIPR). The first section of the line between Bombay (now Mumbai) and Thana (now Thane) was opened in April 1853. The construction of the hill section beyond Kalyan to Poona via the Bhor Ghat was difficult and time consuming. An isolated section from Poona to Khandala was opened in 1858. That was about the time that Poona station was built. The through link between Bombay and Poona was completed only in 1863. Beyond Poona the GIPR extended its line via Sholapur and Gulbarga to reach Raichur in 1871, where it met the Madras Railway.

The Poona station was located North West of the Cantonment and to the North of the Post Office and was one of the most important stations on GIPR. The stone masonry buildings comprised of a Station Master's office, two waiting rooms, a telegraph office with fourteen signalers, a booking office and a large third-class waiting hall. There were a number of traffic and locomotive lines. The Bombay Presidency Gazetteer mentions: "There are three platforms, the passenger platform 595' long, 20' broad and 2½' high, the horse loading platform 307' long, 20' broad and 3' high and the goods platform 605' long and 3 1/3' high, with varying breadth of 20' for 102' and of 47' for 503'. The station yard with the greatest length of 845 yards and greatest breadth of 155 yards covers an area of 93,651 sq. yards and is closed by a masonry wall". The station had four sheds: a locomotive shed, a goods shed, a carriage shed and a store's shed. The locomotive shed, at the time, was 100 feet long, 39 feet broad and 18 feet high, open on two sides. It was built of wrought iron sides with corrugated iron covering and roof trusses. The gables were of brickwork. The Goods Shed was 300 feet long, 25 feet broad and 12½ feet high and had a teak roof with a double tile covering. The station building itself was a stone masonry structure with a pitched tiled roof with conspicuous verge boards on the front facing gables. The *porte cochere* had a hipped roof with decorative iron cresting and cast-iron columns.

To cater to visitors, the 'Royal Family Hotel' was opened in 1861 by a Parsi proprietor near the Railway Station. It was a two-storied building with room for five families and fourteen single visitors, and had stabling for sixteen horses and four carriages. The hotel had drawing, dining, smoking, and a billiards room. The charges were 10s (₹ 5/-) a day and £12 (₹ 120) a month.

About the Post Card: Published by Raphael Tuck & Sons 'ARTCOLLOTYPE' Postcard No 846. Published for 'The Poona General Stores, Poona'. (Raphael Tuck & Sons were famous publishers of artwork and the world's largest publisher of postcards. In 1883, they received a Royal Warrant of Appointment).

About the Author: Vinoo N Mathur is the President of the Rail Enthusiasts' Society and, among his other interests, a deltiologist. As mentioned by him in the write-up, **The Rail Enthusiast** will share copies of his collection, starting with this issue.

Richard Roskell Bayne

In our last issue (Vol. 5, No. 3), we told you about Rowland McDonald Stephenson, the main force behind the establishment of the railways in Eastern India. In this issue, on the following pages, we write of Frederick Walter Simms, the country's first rail Consulting Engineer. We would like to add one more name to the early pioneers who contributed to the setting up and building of the East Indian Railway: that of Richard Roskell Bayne.

Richard was an architect. Born in 1837, he was engaged by the East Indian Railway and worked in Calcutta (now Kolkata) and other Indian cities from 1866 to 1890. During this period he made significant contributions to the architectural heritage of the railways. Among the buildings that he designed were the East Indian Railway Office and the Howrah station at Calcutta as well as the railway's own Oak Grove School at Mussoorie, now in Uttarakhand. Other non-rail buildings that he designed included the New Market in Calcutta, the Hussainabad clock tower in Lucknow and the Mayo Memorial Hall at Allahabad (now Prayagraj).

Richard Roskell Bayne died in 1901 in Canada where he worked and settled after leaving India.

Frederick Walter Simms

P K Mishra



Frederick Walter Simms was born on the 24th of December 1803, in the parish of St. Anne's, Blackfriars, London. Qualifying as a civil engineer, he started his working career by being articled to a surveyor, and quickly found himself placed on the Irish Ordnance Survey, in which he was soon promoted to be the head of the Computing Department. After passing a few years in Ireland, Simms applied for, and obtained, the post of Assistant Astronomer at the Royal Observatory, Greenwich.

However, this did not suit him. Tired of hard continuous night work and only scanty rewards, Simms became assistant to the Vice-President of Britain's South Eastern Railway and other works. Soon, he was appointed as the Resident Engineer on the Pound Hill and Saltwood tunnel, by which he gained practical experience and knowledge, afterwards embodied in his book on 'Tunneling'. Simms

then became engaged in general practice: he laid out several lines, including some of the French railways.

It was at this stage that his friend, General Sir Charles Pasley, recommended him to the East India Company to fill the position of Consulting Engineer to the Government of India. The position offered a lot of traveling and included a liberal and certain salary. This induced Simms to accept. So it was, that at the age of 41 years, Simms sailed for India as the first Consulting Engineer of not only the East India Company but the first anywhere in the country. Co-incidentally, Rowland Stephenson, who was doing pioneering work of setting up a railway on the sub-continent, travelled by the same ship. The Government of India's purpose of this appointment was to exercise control and supervision over railway companies in the country as lack of government regulation & unbridled *laissez faire* had resulted in frenzied speculation and a dangerous railway mania in England.

Although he was sent to India to report to the Home Government on the capability of India to receive the benefits of railway communication, Simms soon found that the title of Consulting Engineer to the Government meant a liability as he was called upon to inspect the engineering works of India in general, and therefore found himself sent out at all seasons to report upon the embankments of rivers, the sanitary state of towns, and the positions for new harbours, all of which involved great exposure and much hardship, and drew from him a number of interesting reports and suggestions, as well as a survey of Calcutta on an extended scale, a work undertaken by him as Chairman of the sanitary commission of that city.

All the same, his primary contribution was in the field of the railways. The Directors of the East India Company had felt that there were difficulties peculiar to India owing to its climate and other reasons with regard to setting up a rail network. These included rain, winds and the vertical sun; ravages of insects and vermin; unprotected tracts of the country; lack of competent and trustworthy engineers; etc.

In his comprehensive report of 13th March 1846, Simms



Bridge across the Sone River near Arrah in Bihar. The was the first major railway bridge built in India. Simms' advise on the building of this bridge ensured its construction

was unequivocal that railroads were not only desirable but, with proper attention, could be constructed and maintained as perfectly as in any part of Europe. In fact, he even listed areas where the situation was better in India than in Europe. He further went on to recommend a single line from Calcutta to Delhi under the management of one company and not being divided into separate sections controlled by various smaller units. The report also recommended a line from Agra to Bombay in addition to the line from Bombay joining the line to Calcutta at Allahabad.

When the lines were to be constructed, as a consulting engineer, he ensured that the latest 84-lb rails were used, the heaviest yet employed in England, for improved comfort and safety; steel girders instead of cheap wooden bridges; adequate viaducts and masonry structures; and, importantly, double line embankment instead of single line embankment to be laid. His professional and visionary approach ensured that private railway companies didn't indulge in shortcuts during construction and achieved utmost economy, efficiency and safety in construction and operation of railways all over the country. He not only organised and approved surveys but also decided on the alignment of EIR in a very pragmatic manner. His path breaking recommendation was that the experimental line should be constructed with embankments and brickwork for a double line, but carrying only a single line of rails due to funds limitations. This method of construction seemed to him applicable not only to the railroad between

Calcutta and Raneegunge, the experimental line, but also to all proposed extensions in India.

As consulting engineer, Simms' advice and approval was sought on many issues. One of the most difficult engineering challenges was bridging the river Sone, the task being so challenging that at one time EIR wanted to drop the idea of bridging the river and terminating rail lines at both ends. His advice led to the building of the bridge across the Sone at Arrah.

Consulting Engineers considered themselves as not mere government officials appointed to oversee and superintend construction of railways in India but be the final arbiters, the mentors and custodians of national interest. They believed that the cost and construction of the railway, a vast scheme of highest importance for future generations and future public property, should not be left to the opinions of railway engineers, who could be influenced at the behest of the promoters of the work. Simms lived up to these tenets while he discharged the responsibilities of the first Consulting Engineer for the railways in the country.

Simms was elected a graduate of the Institution of Civil Engineers on 13 February 1838, and became a member on 23 February 1841. He was likewise a fellow of the Royal Astronomical and Geological societies. He published several technical papers, but for which he received scarcely any pecuniary recompense; in such low light were literary and scientific attainments held in those days.

He authored a number of books. Among them: 'A Treatise on the Principal Mathematical Instruments employed in Surveying, Levelling, and Astronomy'; 'Section-Planography'; 'A Treatise on the Principles and Practice of Levelling'; 'Public Works of Great Britain'; 'Practical Observations on the Asphaltic Mastic'; 'Practical Engineering'; 'Practical Tunneling'; 'Report on Diamond Harbour Dock and Railway Company', Calcutta 1847; 'England to Calcutta by the Overland Route', London 1878; with H Law, 'Examples for Setting Out Railway Curves, 1846.

Unfortunately, he fell prey to hard work, ill health and domestic troubles, and was obliged to leave India at the end of his five-year engagement. He was also chagrined to find himself overruled in some cases; at the end of his five years, he declined reappointment.

On his return home at the close of the year 1850, Simms had to struggle hard for life through a severe attack of inflammation of the liver. On his recovery, he received the appointment of Consulting Engineer to the London, Chatham and Dover Railway, then called the Mid-Kent

Line: and so was once more upon old and well-known ground. But his nerve was gone; the slightest mental exertion was too much for him.

About eighteen months before his death, which occurred on the 20th of February 1864, in the 61st year of his life, Simms was elected a Director of EIR and had the satisfaction to see the railway (now called the Chord Line) which he had recommended when in India, and had indicated as the best direction, adopted as a necessity; not merely because of its directness, but on account of the excellent coal-fields through which it must pass.

The legacy of Frederick Walter Simms, the first rail Consulting Engineer of the country, lives on.

Photo of Jubilee Bridge: Archives of the Rail Enthusiasts' Society

Other photos: From the Internet

About the Author: P K Mishra, a railway man by profession, has made rail historical research his hobby and passion. This article is the result of this passion. He consulted a large number of original records to pen these paragraphs.

1887-commissioned erstwhile Jubilee bridge was built to double line requirements



Neighbourhood Railways

Pakistan Railways

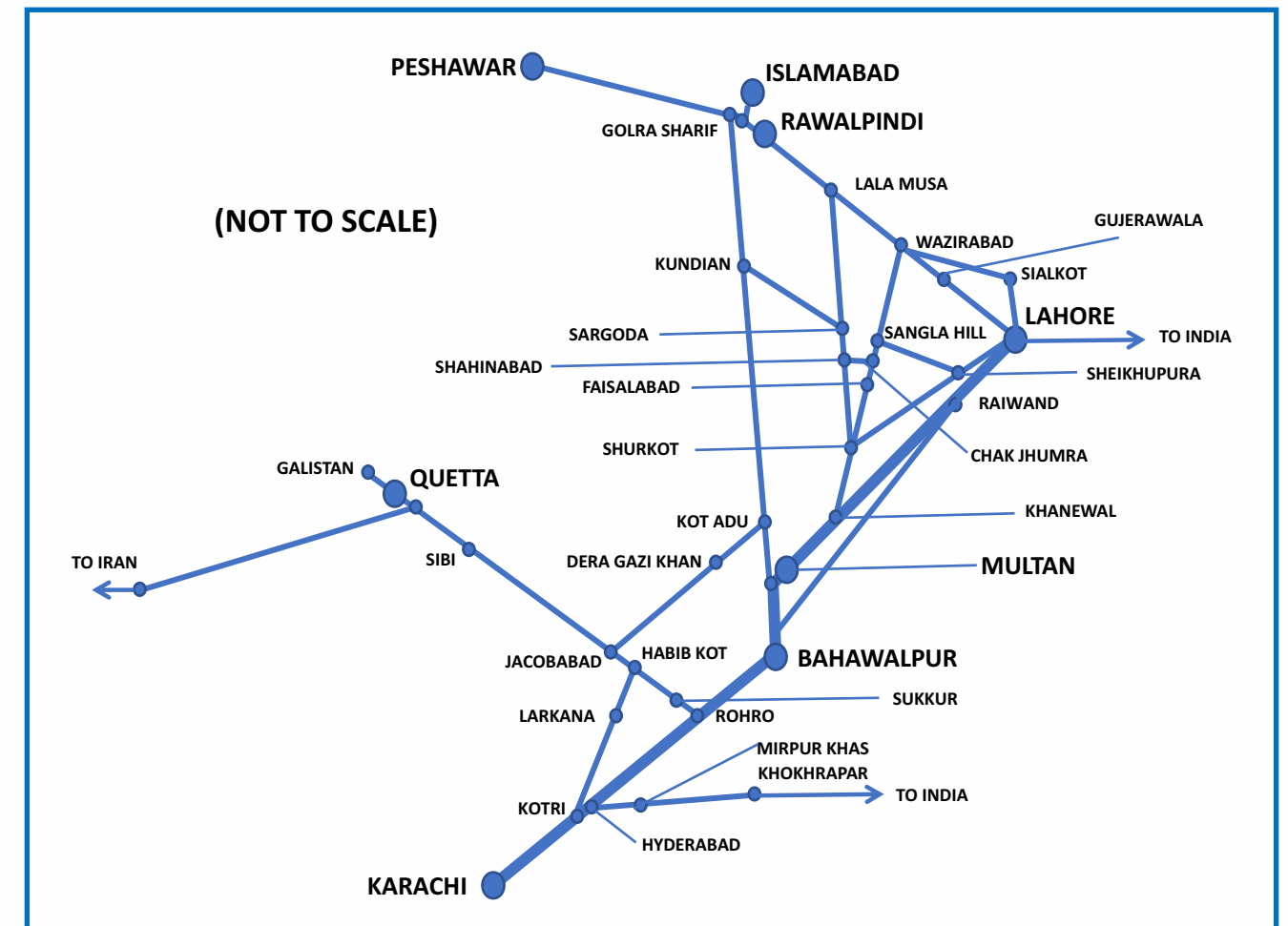
Ranjit Mathur

Ranjit Mathur, one of our oldest members and a prolific writer and chronicler, visited Pakistan Railways in 1996 and again in 2006. He penned the article below on his return. Although now dated, the story of Pakistan Railways that is presented is still relevant. Read on, to get an idea of rail developments in our neighbouring country...

In 1885, the Railway known as the Sind, Punjab and Delhi Railway was purchased by the Secretary of State for India. On 1st January 1886, this Railway was integrated with other State Railways in the western region of what was then undivided India – the Indus Valley Railway, the Punjab Northern Railway (inclusive of the Sind Sagar Railway) and the Kandahar (or Sind-Pishin) Railway – and the North Western State Railway was founded. This was later re-named the North Western Railway (NWR). NWR was the largest zonal railway of pre-Partition India. With a route

kilometrage of 11,093 (mostly BG), it stretched from Delhi in the East to the Afghan and Persian borders in the West and to Karachi in the South-West. It was fully Government-owned and Government-run. The headquarters of the General Manager was at Lahore. Like the East Indian Railway and the Great Indian Peninsula Railway, it was structured on the Divisional pattern. In 1947, of its seven Divisions, Karachi, Quetta, Multan, Rawalpindi and Lahore fell in Pakistan; Ferozpur and Delhi with 3045 kms remained in India. In addition, 512 kms of Jodhpur Railway (MG) fell in

Schematic sketch of Pakistan Railways





Façade of Lahore station. The station has been built like a fort

Pakistan. Thus, at its inception, Pakistan acquired a total of 8560 route kms of railway track in its western part. NWR was re-named twice: in February 1961 it became 'Pakistan Western Railway', and in May 1974, three years after the separation of Bangladesh, 'Pakistan Railways', when two more Divisions – Peshawar and Sukker – were carved into it.

Of the old NWR, only 3294 kms were built on commercial considerations, the balance on military. Of the “commercial” lines two were main lines: Karachi-Lahore via Multan, and Ghaziabad-Meerut-Ambala-Amritsar-Lahore-Peshawar; and six were branch lines of which Wazirabad-Sialkot-(Jammu), Wazirabad-Lyallpur (now Faisalabad), Kotri-Rohri chord, and Peshawar-Jamrud fell in Pakistan while the Pathankot branch and most of the Ferozepur branch were left in India.

Over 350 kms of the Karachi-Lahore main line and all lines in today's Pakistan East of the Sutlej lie in the erstwhile (pre-Partition) state of Bahawalpur. The young England-returned Nawab of Bahawalpur, confronted at the time of Partition with the question of joining one or the other side, hesitated before finally opting for Pakistan. For what he perceived as the good of his State (the economy was sustained by the landed merchants of Marwar and by the hardy Sikh farmers), he toyed with the idea of joining India or a possible Independent States' Union that was being

discussed at the time. It is interesting to ponder upon what would have been the fate of the Railway in Pakistan – and indeed of the country itself – had he not signed for Pakistan, which he finally did as late as 3rd October 1947.

The area which fell in what became (West) Pakistan was primarily agricultural. Despite its rich alluvial soil, this rain-starved region would not have become the agricultural asset that it is without its canal system. Some built before the British, the canals were then greatly developed by them into an intricate network, which is one of the most extensive irrigation systems in the world. Population, commercial activity and freight arising are concentrated in the triangle between the Indus and the border with India and in deltaic Sind, around Karachi-Hyderabad. Wheat was and remains the principal crop all over the region, with sugar cane intervening in the Lyallpur (now Faisalabad) and Montgomery (now Sahiwal) belt and cotton further South in the Multan and Panchnad and Sukker areas. In pre-Partition days, cotton reached the mills in Gujerat or was exported through Karachi; foodgrain and sugar cane surplus to the region was moved to consuming centres further East – in India. Thus, Lahore and that part of Punjab which fell to Pakistan were connected economically and culturally more closely to the East, i.e. towards (Eastern) Punjab, Delhi and the coal-steel belt than to Sind; and

Karachi had closer links to Ahmedabad and Bombay. In the East, jute from what became East Pakistan went to the mills around Calcutta.

At its birth, Pakistan was confronted by the question: should commercial links with India be retained? Benefits were voiced, among others by Ghulam Farooq, former General Manager of the East Indian Railway (later to become Governor of East Pakistan). The Indian firm, M N Dastoor & Co., was invited to prepare a blueprint for a steel plant in Karachi, based on ore from Goa. But the dominant voice – and this prevailed – was rooted in the fear that the unequal strength of the two economies would result in Pakistan getting swamped by Indian goods, its own economic growth would get stifled, its economy could be easily paralysed were India to turn off the tap, and indeed, the very *raison d'etre* for separation would be jeopardized, particularly as cultural influences would also then persist. The Dastoor contract was canceled. Also, perhaps at the same time, lost was any chance of retaining an integrated rail system for the sub-continent.

Pakistan had allied itself firmly with the West, which at that time was obsessed with containing communism by encircling Russia and China by military pacts, and opportunistically joined NATO and SEATO. This ensured supply of arms for Pakistan. It also gave a westward tilt for all the support it sought for its software and hardware. Diesel locomotive imports from 1952 to 1980 were almost all from USA; electric locomotives came from UK; Sofferail of France offered consultancy services.

It was only in the 1980s, by which time Zia-ul Haq had taken over as the country's sixth President, that the Japanese firm Hitachi came into the picture. The Hitachi window was widened during the civilian rule of Benazir Bhutto, allowing this firm to bag the prize of setting up a locomotive manufacturing unit in Pakistan. Military rule returned in 1999, with General Parvez Musharraf taking over as the Chief Executive, dismissing Sharif for corruption. Foreign links then turned a full circle: China, earlier shunned as a *persona non-grata*, now becoming the favoured partner.

An early pre-occupation of the new country was to set up a capital. Karachi, the interim capital and industrial hub, seemed remote; Lahore too near to the border with India. A site was selected in the Pothwar Plateau in Rawalpindi's neighbourhood, and here was created in the 1960s the artificial city of Islamabad. Karachi and Lahore suffered in status, but remained pivotal rail hubs: connected with each other, with two main spokes: one from Karachi to Quetta and one from Lahore to the new capital and beyond.

At the end of the 20th century, Pakistan Railways (PR)

officials conceded that their system had suffered in consequence of their failure to reproduce the rail management model created for our sub-continent. The Indian Railway Board doubles as a Ministry of the Government. This unique arrangement for a state-owned entity means that policy makers are themselves the executives to implement policies and are therefore directly accountable to the Legislature. Members of the Indian Railway Board (all Railwaymen) are ex-officio Secretaries to the Government of India. The head of the Pakistan Railway Board is not a Railwayman; he is a Secretary in a Ministry, and acts as the Chairman of the Executive Board of the Railway, while sitting in Islamabad. This Board, created in 1949, functioned from Lahore. Using the same (GM's) headquarters of the old NWR, it was placed above the General Manager (GM). The Board had Railway Members for Traffic, Civil Engineering and Mechanical Engineering. The GM continued as before with his headquarters team of officials from all departments and with control over the Divisions, where the hierarchy was duplicated. In force for 50 years, this was the administrative structure in the 1990s. But, PR was then in the throes of a change.

The *Pakistan Engineer* of 1996 had quoted that “The (Pakistan) Railways had made a profit of Rupees 57.9 million in the year that followed the turbulent days of 1947-48”. But at that time the Bengal Assam and East Bengal Railways were part of Pakistan Railways. Thereafter, and particularly when finances of East Pakistan Railway got deleted after 1971, PR expenditure began overtaking earnings.

After the separation of Bangladesh, Pakistan's VI Plan (1982-83 to 87-88) was the most ambitious for PR. It included purchase of 105 diesel locomotives, 525 coaches, 200 wagons, 370 kms of track re-habilitation, and doubling the Lodhran-Multan-Khanewal line. With loans from Japan, Kuwait and the Islamic Development Bank, orders were placed for locomotives on Hitachi – a departure from earlier US monopoly – and in 1984 a contract was signed with Thyssen-Henschell of Germany. Consultancy was offered by Canadian Pacific Railway on computer-based data-systems and by an Italian group for electrification of the heavily graded (1/25) 102-km Sibi-Quetta line along with soft loans to cover fixed assets and supply of 17 electric locomotives. These consultancies were never completed. Also, later dropped, was the plan for Siemens to mechanize two more of the system's 11 marshalling yards, viz. Rawalpindi, Lala Musa, Kundian, Lahore, Faisalabad, Samasata, Sibi, Rahri, Pimpri (Karachi), Kotri and Piamari (port); Pimpri had been mechanized in 1974. Of the Plan allocation of Rupees 10,000 million, only Rupees 6,800 million was

spent. Budgeting for track renewal was cut from Rupees 205.5 million in 1986 to 113 in 1987 and to only 11.5 in 1988. (Lodhran-Multan doubling got completed only 20 years later in 2007).

In 1988-89, 239 steam, 106 diesels and 2500 wagons had to be written off, as unserviceable. It was forecast that by 1993, three quarters of PR's route kilometrage would be overaged. PR's figures for passengers and freight during the first years of the VI Plan were far from encouraging, resulting in drop in earnings, while expenditure rose.



Another view of Lahore station. Note the crenelated architecture

PR's VII Plan allocation was Rupees 8,000 million: 20% less than VI Plan allocation but marginally more than what was spent. A major work was to upgrade to 120 kmph the Karachi-Lahore-Shahdara main line along with three sections (Shahdara-Faisalabad, Faisalabad-Sangla Hill and Faisalabad-Shorkot) with signaling and micro-wave inputs from Siemens.

Freight tonnage continued to drop. In 1991-92, it reached a low of 7.6 million tonnes (6 billion t-kms) and dropped further to 6 million tonnes in 1993-98 (5 billion t-kms). Departmental freight which rose to 4 million tonnes during the period 1975-80, came down to 1 million. By 1996, PR's share of the country's tonnage was only 15.4% of the total. (Balance 42.8% by road, 42.8% by pipeline).

With PR finances critical, privatization was considered a possible remedy. In the early 1990s, a half-hearted attempt at privatization was made: three routes (Lahore-Narowal,

Lahore-Faisalabad and Lodhran-Pakpattan) were franchised out to private parties. Initial reports suggested that the franchisees, who took over in 1993, had improved income on the routes. This was, however, due more to tighter security against ticketless travel than improvement in services. The franchises were canceled, and when re-advertised, no new leases were approved.

In 1992, Transmark of UK was appointed to study the system and make recommendations. 762 kms of MG network were closed and other uneconomic lines were

identified. Franchises were now invited for providing rolling stock and for running services. Several Canadian, US and South African parties expressed their interest but delays in finalizing the scheme led to its cancellation. The scheme was later re-advertised in June 1996. By mid-1998 14 prospective bidders had applied, but again the scheme was abandoned.

The outgoing GM, Syed Zahoor Ahmed, warned in 1994 of impending crisis if the bias in favour of road transport was not reversed: PR's share of investment in the transport sector in Pakistan's VIII Plan (1993-98) was 30% against 59% allotted to road. It was forecast that PR's deficit would rise from Rupees 1.3 billion in 1994-95 to Rupees 2.3 billion in 1995-96. In fact, the deficit was a staggering Rupees 8 billion.

Through the Privatisation Commission, Pakistan then planned another change: to offer for sale or by concession three core PR businesses (freight, passenger and

infrastructure) as well as non-core activities such as rolling stock and sleeper manufacturing plants, land and other property. While this was under scrutiny, the situation had further deteriorated.

With PR close to bankruptcy, the World Bank insisted upon reform. In July 1997, Nawab Sharif's civilian government created a task force headed by Economic Secretary, Javed Burki, to implement a re-structuring plan. Under this plan, a new Ministry of Railways was created in September 1998 (still headed by a non-Railwayman) and the old Board-cum-GM system was scrapped. Instead, PR was divided into two separate functional units: the Operating Unit and the Manufacturing and Services Unit. Each of these was now headed by a GM (earlier, from 1998 to 2008, designated as MD), responsible to the Secretary/Chairman for the performance of his Unit.

The Operating Unit, housed in the old NWR Headquarters building in Lahore, oversaw train operations and all related functions. Under the GM (Operations) were three Additional GMs, each heading a Business Unit – Infrastructure, Passenger and Freight. Heads of various specialized departments assisted the GM (Operations). Reporting to the GM (Operations) were also nine Divisional Superintendents: one each in seven territorial Divisions (Lahore, Rawalpindi, Peshawar, Karachi, Quetta, Multan and Sukker), one in the Mechanical Division (at Moghalpura Workshop), and one in the Administrative Division (at Headquarters). The field Divisional Superintendents were assisted by Divisional and Assistant Officers of departments, i.e. Transportation and Commercial, Engineering (Civil, Mechanical, Signals and Telecom), Accounts and Railway Police.

In September 1998, rolling stock assets were divided between passenger and freight businesses. The passenger unit took over 269 locomotives and 2239 coaches; the freight unit inherited 267 locomotives and 26,755 wagons. By 2006, PR had 1,579 coaching vehicles, 286 other coaching vehicles and 22,000 wagons. Diesels in the freight pool dropped to 192 in 2001 and were further reduced to 128 by 2006.

The Mechanical and Services (M&S) Unit was responsible for management of the Carriage Factory (set up in 1971 at Islamabad), the Locomotive Factory (set up in 1993 at Risalpur), the Re-habilitation unit of the Moghalpura Workshop, Concrete Sleeper Factories (1967-80), hospitals and medical services, and the two Consultancy firms, Railway Constructions Pakistan Ltd. (RAILCOP incorporated in 1980) and Pakistan Railway Advisory and Consultancy Services Ltd. (PRACS founded in 1984). This arrangement

was a re-hash of an earlier (1998) split up where there were several "Management Units": Production Unit 1 for Islamabad Coach works and Moghalpura workshop; Production Unit 2 for Risalpur Locomotive works; Production Unit 3 for the concrete Sleeper plants and the welding business; Unit 4 for Property Management and Development and Unit 5 for the Consultancy Firms.

By 2006, it was not certain whether the system had benefited by the 1998 re-structuring or, as expressed in private, whether lines of command and control had got further blurred. The re-structuring had also suggested a reduction in the workforce by 1,10,000 and the transfer of railway schools and hospitals to local authorities: but, by 2006, these had not been fully implemented.

Partition affected several rail sections as the border with India cut across eight rail links in the western sector. One was the Jodhpur State Railway's desert line. Seven were in the North:

- Jammu Tawi to Sialkot: the section in India got closed, the Sialkot-Suchetgarh section remained in Pakistan; three trains reached Jammu daily on this line until 1947.
- Verka to Narowal: Verka-Dera Baba Nanak remained in India; the link was cut at the Ravi river which demarcated the border, so Jassal, on the other side of the river, became a dead-end junction in Pakistan; Dera Baba Nanak, originally in Lahore district is now in India's Gurdaspur district.
- Amritsar to Lahore: the double line over which 8 Mail and Express and 9 passenger trains ran daily before partition, now runs Samjhauta trains only.
- Amritsar to Kasur: Kasur fell in Pakistan, so Amritsar-Khem Karan remains as a finger line West of the Sutlej.
- Ferozepur to Kasur: here the Sutlej demarcated the border, an adjustment being made to allow the canal headworks to fall within Pakistan. Eight trains each way used the route daily including GIP's 15 UP Punjab Mail; after partition, no trains run over the great 20 span 4293 ft. long Kaiser-i-Hind bridge across the river. Kasur remains a dead-end terminus in Pakistan where all trains suffer reversal.
- Ferozepur-Abohar to Amrukha-McLeodganj; Bahawalnagar: the link was cut between Chananwala near Abohar in India and Amrukar in Pakistan; Ferozepur-Chananwala became a finger line East of the river.
- Bhatinda-Hindumalkot to McLeodganj-Bahawalnagar - the SPDR's 401-mile Delhi-Samasata main line via Bhatinda, which shortened the distance between Delhi

and Karachi by 187 miles compared to the NWR's route via Amritsar, got cut between Hindumalkot and Qasimwala. Pakistan closed the short McLeodganj-Qasimwala section, so McLeodganj (now called Mandi Sadiq Ganj) ceased to be a junction. (On the Indian side, Fazilka and Hindumalkot have since been connected to Abohar and Sri Ganganagar respectively).

Only three additions have been made to the network in Pakistan after partition. Construction of the 63-km Mardan-Charsadda-Durgai section, interrupted first by World War II and then by Partition, got completed in 1954; a short 10-km line was laid in 1974 from Rawalpindi to Islamabad; and the 2'6" NG Jacobabad-Kashmore section, converted to BG by 1956, got extended 300 kms along the Indus right bank – where the great river runs slightly clockwise due to the thrust of the Suleiman Range – to reach Kot Adu. This commendable work, undertaken during 1973-76, entailed bridging the Indus river and provided an alternate route from Karachi and Quetta to Rawalpindi and Peshawar. Until then, Quetta had remained remote from the new capital by rail, connected circuitously via Sukker-Rohri and Lothran.

Financial constraints and loss of traffic resulting from dwindling rolling stock, enforced the closure of some sections at various times. One was the BG line beyond Khost to Bostan (the first route to Quetta). Others were the several NG military-based sections: Bostan to Fort Sanderman (later Zhob, on which river it lies), Mari Indus to Tonk, with its branches to Manzai (the gateway to southern Waziristan through the Gomal Pass) and to Bannu (Old Edwardesabad – the gateway to northern Waziristan), and Kohat Cantt (now just Kohat) to Thal (on the Khurram river that carves a pass through the mountain towards Kabul). Also closed were the short branches (converted from MG to BG between 1921 and 1930) in the plains between the river Indus and the Hyderabad-Rohri main line. Later, in 1968, released BG tracks from these branches were used to convert to BG the MG sections from Hyderabad to Mirpur Khas and Mirpur Khas to Nawabshah. In 2000, to match the conversion on the Indian side, the 135-km MG desert line from Mirpur Khas to Khokrapar was converted to BG.

From 8560 route kms in 1947 (about 7452 BG, 500 MG, 600 NG), the route kms reached 8800 kms in 1972-73, but dropped to 7791 kms as on 30th June 2004 (7,346 km BG and 445 km MG; NG nil). PR had 1,043 kms of double line track. 290 route kms were electrified. PR then had 625 stations.

In 1991, PR and the Islamic Iranian Republic Railways (IIRR) signed an agreement to co-operate in mutual development.

The long-discussed 375-km link between PR at Zahedan with IIRR at Kerman and a 40-km branch from Taftan on the Zahedan line to the copper mining unit at Saindak were to be taken up. But no progress was reported till 2006.

In 1998, a survey was commissioned for a 150-km new line in the Thar desert as an extension from Badin terminus (on the branch from Hyderabad) to tap coal and other reserves in the Islamkot coalfield and to help in construction, with private sector funding, of a 1,300 MW Power station there. The concession to build both the railway and power station were granted to a US-Chinese consortium of American United Corporation, Hong-Pak Power Generation and Tanson Development but, here again, until 2006 there was no progress.

In 2004, the Pakistan Government asked PR to extend the Bostan-Chaman line by 120 kms into Afghanistan to reach Kandahar. ADB is reported to have offered to fund the scheme.

Doubling of the 86-km Lodhran-Multan main line was finally completed in 2007, along with the 15-km Multan-Sher Shah section. Doubling was then in progress up to Khanewal. Other network schemes are, however, languishing for want of funds. These included:

- (i) A rail link to serve a new port in its SW at Gwadar (with Chinese assistance).
- (ii) New lines to serve POK from Rawalpindi to Muzaffarabad and from Dina to Mirpur.
- (iii) Revival and upgradation to BG of the disused 295-km Bostan-Zhob line and its extension via Bannu and Kohat to Peshawar to give another route to the North from Quetta; and a new line from Kundian to Bannu (Uranium has been located in the Bannu and Kohat regions); and a 150-km new line from Zhob to Dera Ismail Khan to provide yet another link from the North to Quetta and Karachi.

Centralised Traffic Control (CTC) was introduced in the Karachi area early in 1962. Thereafter, little was done to improve signaling until 1993, when colour-light signaling was introduced in the Lahore-Raiwind double line section. Siemens was given a contract in 1993 for token-less block on Lodhran-Khanewal-Faisalabad and Sangli Hill-Wazirabad sections. CTC was introduced on the 174-km (largely single line) Rawalpindi-Peshawar Cantt section with equipment and expertise supplied by Aydin Monitor System of USA.

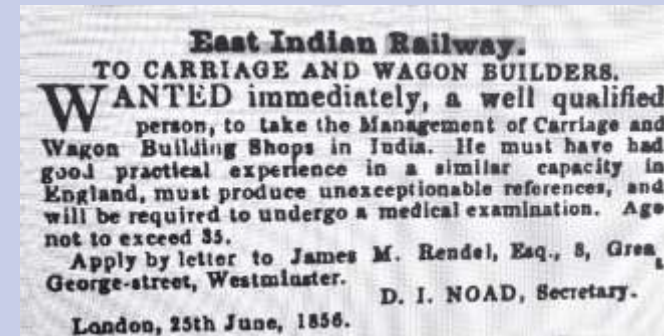
(Editor: We will be covering developments after 2006 in a subsequent issue)

Photos: Courtesy 'The Heritage Magazine' of the Institute of Rail Transport

History

Manpower Advertisements

The East Indian Railway (EIR) Company was set up in 1845 in the UK. Its first train steamed out from Howrah on the 15th of August 1854. Recruiting manpower for EIR, particularly at the managerial and engineering levels, was taken up almost immediately as will be seen by the following advertisement that appeared in Herapath Journal on the 15th of June 1856. This Journal was printed in the USA and was to the Railways what Wisden is to cricket today.



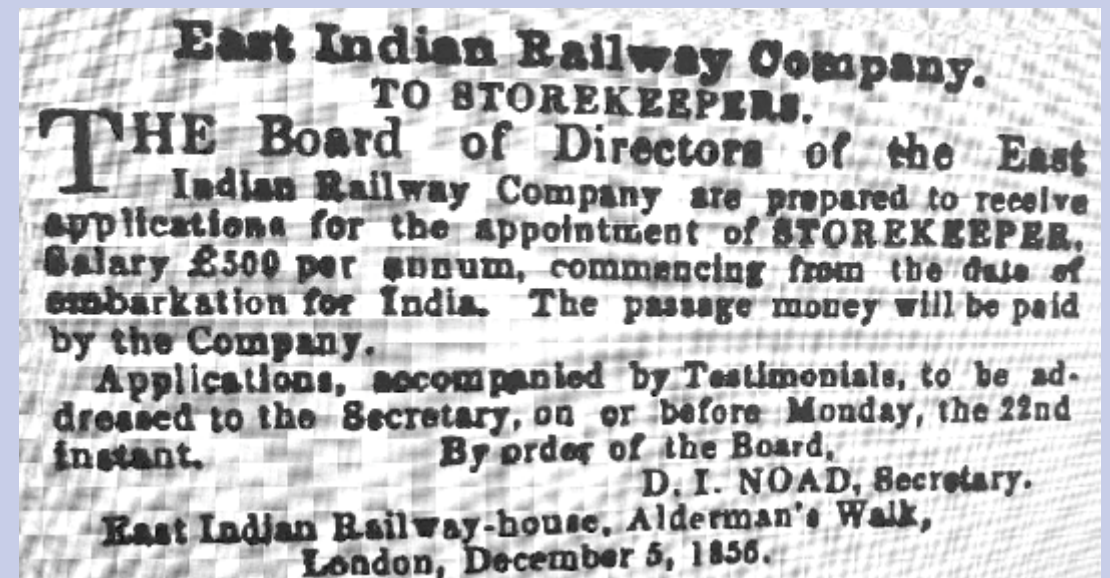
The advertisement sought applications from well-qualified candidates for the position of Carriage and Wagon Building

Shops; in other words, the requirement was of what we today call the Carriage and Wagon Superintendent (CWS). This would certainly be an advertisement for the first CWS on the East Indian Railway and perhaps in the country. An interesting fact in the advertisement is that the maximum age of the applicant was to be less than 35 years and the application was to be sent to James M Rendel, who was Consulting Engineer to EIR at London in the UK. Later, he became Consulting Engineer to the East India Company. Most of the early bridges of EIR were designed by him, including the Sone Bridge. Even screw couplings on EIR were to his design.

It is learnt that the Carriage and Wagon Superintendent drew a salary of 1000 Pounds per year, a considerable sum in those days more than 150 years back. However, the Locomotive Superintendent earned 1500 Pounds and the Agent 2500 Pounds annually.

Later in the same year, a similar advertisement, that is reproduced below, appeared in the Journal on the 5th of December 1856 for the post of Store Keeper. This would be the first Controller of Stores of EIR. His salary of 500 Pounds is mentioned in the advertisement.

(With inputs from P K Mishra)



Bodinayakanur DECADE OF NO RAIL CONNECTIVITY

V M Govind Krishnan

Ever heard of Bodinayakanur? Well, it is a town at the foothills of the Western Ghats of India in Theni district of Tamilnadu, bordering Kerala. The region is famed for its coffee cultivation, besides cardamom, pepper, mango and silk cotton.

The passenger train which operated for the past 83 years was given a grand farewell at the Bodinayakanur railway station by the public and elected representatives on its last journey to Madurai on the evening of Friday, 31st December 2010. The track was shut for gauge conversion from metre gauge (1000 mm) to broad gauge (1676 mm) whereby train operations ceased from 1st January 2011 on this 90-km route. The train was overflowing with passengers as many did not want to miss the chance to be part of the train's last journey on the metre gauge route. People congregated at the station and posters were displayed in the town. The train was decorated with balloons and garlands. The station wore a festive look and people distributed sweets and toffees. Visitors outnumbered passengers at the station. Passengers climbed on to the engine and hung from steps cheering the crowd when the train started to move. Earlier that day a rousing farewell was accorded to the pairing train from Madurai.

After obtaining sanction from the Railway Board in December 1925, the South Indian Railway Company started constructing the 55.94 mile-long metre gauge railway track in Madurai-Bodi railway section in July 1926. Flat footed steel rails, weighing 50 pounds, were fixed on steel trough sleepers. A 36-foot-long rail was mounted on 14 steel sleepers. The project was completed at a cost of ₹ 52.27 lakh. Initially, ₹ 44,000 was sanctioned in 1925-26, ₹ 11.28 lakh in 1926-27, ₹ 26.36 lakh in 1927-28 and ₹ 14.19 lakh in 1928-29. Ten stations existed on the 90-km route, namely Nagamalai, Chekkanoorani, Valandur, Usilampatti, Doddappanayakanur, Andipatti, Vallandhi Road, Theni, Budipuram and Bodinayakanur. The first train was flagged off on November 20 1928, by the Government of Madras' Revenue Member, Sir Norman Marjoribanks. The train was a life line to cardamom and silk cotton traders. This route had earned ₹ 1.5 crore by transporting cardamom



Steam hauled train in the 1970s

every year from Bodinayakanur, besides a large quantity of silk cotton.

This 90-km route was closed at the dawn of the New Year 2011. The Southern Railway had closed the Madurai-Bodinayakanur section which was the only metre gauge section in the Madurai division, to take up gauge conversion work on 1st January 2011. The gauge conversion project was estimated to cost ₹ 175 crore, but paltry fund allocation by successive governments – ₹ 15 crore in 2011 and ₹ 5 crore in 2012 – led to heavy escalation in the cost of the project. The Madurai-Bodinayakanur track was among the other lines in Southern Railway to be shut, as three other works in Virudhunagar-Manamadurai, Dindigul-Pollachi and Shencottah-Punalur sections were under way.

The Palakkad-Pollachi metre gauge section was closed with effect from 10th December 2008 for gauge conversion with an assurance that it would be reopened in 16 months as broad gauge, but it was completed only in March 2015. A load tolerance trial was conducted on the newly converted 54-km broad gauge line between Palakkad Town and Pollachi stations by plying a goods train on Sunday, 25th October 2015, and passenger train services



Last MG train before track shut down

commenced on the Palakkad-Pollachi broad gauge section on Monday, 15th November 2015.

The Pollachi-Podanur track was closed from May 2009, but owing to land acquisition hurdles where realignment of the



BG track near Palanganatham

earlier metre gauge line to reduce gradients and sharp curves became necessary, tardy progress was made. Sections of the broad gauge track became ready and trains began operating between Dindigul to Palani from 20th November 2012, and from Palani via Udumalpet to Pollachi from 9th January 2015. The broad gauge line between Pollachi and Podanur finally opened on 15th July 2017.

In all probability, Usilampatti will get back rail connectivity by the turn of 2020 as the broad gauge line under Madurai-Bodinayakanur gauge conversion project was scheduled for completion by December 2019. The work on constructing 70 minor bridges and two major bridges on the 37-km long Madurai-Usilampatti stretch has been completed, and as of now, track laying and ballast dumping work is under way.

Meanwhile, work on constructing 120 minor bridges and six major bridges on the 53-km long Usilampatti-Bodinayakanur stretch is in progress, with provision for crossing trains at Usilampatti, Andipatti and Theni stations. The entire project was expected to be completed by mid-2020, but thanks to the Covid pandemic and other constraints, the work has been delayed. Indications are that the line will be completed early in 2021. Rail connectivity is expected to be back again – this time on broad gauge!

Photos: Courtesy the Author

About the Author: V M Govind Krishnan is a regular contributor to The Rail Enthusiast and a rail enthusiast. He has authored a book on NMR. He can be reached at vmgovindkrishnan@gmail.com

Seen in Canada

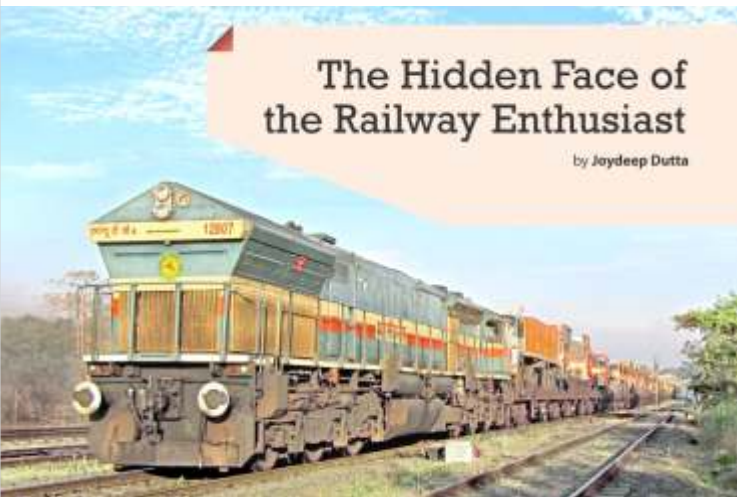


News & Events

Rail Enthusiasts' Society Talks

On the 23rd of August 2020 the Rail Enthusiasts' Society (RES) launched another chapter of its activities. This was the start of a series of talks by enthusiasts on various aspects of their experience and expertise. We can certainly thank Covid-19 for hastening this introduction as it has popularised the idea of virtual meetings and webinars.

The first talk was by the quintessential rail enthusiast, and Vice President of our society, Joydeep Dutta. Born into a railway family, Joydeep grew up in a rail environment and fell in love with it. Today, when he is not educating and instructing young brains as a professor at IIT Kanpur, he thinks, breaths, speaks railways. The subject of his talk was



Reproduction of a page from the book "Indian Railways – More Miles...More Smiles"

"My Life as a Rail Enthusiast". Apart from rail-fanning actively, Joydeep is a rail modeller and has an excellent collection of books relating to the railways. He has co-authored a book on diesel locomotives and contributed a large number of articles in **The Rail Enthusiast**. While he dwelt on his experiences, the main point he made was that rail fanning in India is not like that in the West. For inexplicable reasons, rail fanning means obtaining permission from CPROs, dealing with highhanded RPF personnel and bureaucratic Station Masters, among others. The best way around the various hurdles and restrictions that come your way is to be on good and friendly terms with rail employees at all levels and you can manage very



Chennai Central station in water colours

successful and satisfying rail fanning. He lamented the fact that the current pandemic had put a virtual stop on all rail fanning and hoped that it would end soon. It will not be out of place to mention that it was Joydeep's article in the book "Indian Railways - More Miles...More Smiles" on "The Hidden Face of the Rail Enthusiast" that set the ball rolling for the setting up of the Rail Enthusiasts' Society and launching its magazine that you are now reading.

The response to the talk was overwhelming. It was, therefore, confirmed that such talks would be a monthly event taking place normally on the third Sunday of each month.

Thus, the second talk took place on the 20th of September 2020 and, very appropriately, it was delivered by Vinoo Mathur, the President of our society. Vinoo is a railwayman by profession, retiring as the Member Traffic of the Indian Railway Board, but at heart he is a rail historian and enthusiast. Author of the book, "Bridges, Buildings and Black Beauties of Northern Railway", he is now working on a book on Rail Architecture. Thus, the topic of his talk was "Rail Buildings of the Raj".

Although not an architect or a civil engineer, Vinoo's knowledge of Greek and Roman architecture is phenomenal.



Howrah station as seen from the Kolkata side across the river

Commencing with various terms, features and facets of classical architecture, Vinoo described rail buildings that exhibit these features and the condition of the buildings today. Some of the edifices dwelt upon included BNR House in Kolkata, the oldest station in the country at Royapuram, Chennai Central station, CSMT, Howrah station, and others.

A picture of the Brienz Rothorn Railway that Vikas had displayed during his talk



Only a few buildings could be covered and there is sure to be Part 2 and perhaps Parts 3 and 4 of his talk in this series.

Those who may have missed this engaging, engrossing and educative talk, need not fret. It is proposed to start in the not too distant future, a regular feature by Vinoo Mathur in our magazine that will cover this subject.

The third talk in the series took place on the 18th of October. Delivered by Vikas Singh, it was as mesmerising as the two earlier talks. If there is a term like multi-hobbyist, the first person it could be applied to is Vikas. He has more hobbies than one has fingers on the hand and in each and every one of them, Vikas excels. For instance, he has a complete collection of all the works of Ruskin Bond; he has Tintin comics in 120 languages; he has won various national and international awards for his philatelic collection; he was the Fan Guest of Honour at the International Agatha Christie Festival; the list is endless. His FaceBook page describes him quite aptly: "Tea, Trains and Tintin".

It was not clear how Vikas, with his multifarious interests, would present to rail enthusiasts. He did so through a series of pictures that he displayed which showed his various rail

trips across the world. At each stage, he linked the rail interest to his other interests as well. He put it accurately when he said that he is not a photographer but takes pictures for the purpose of documentation, an area that our country is weak in.

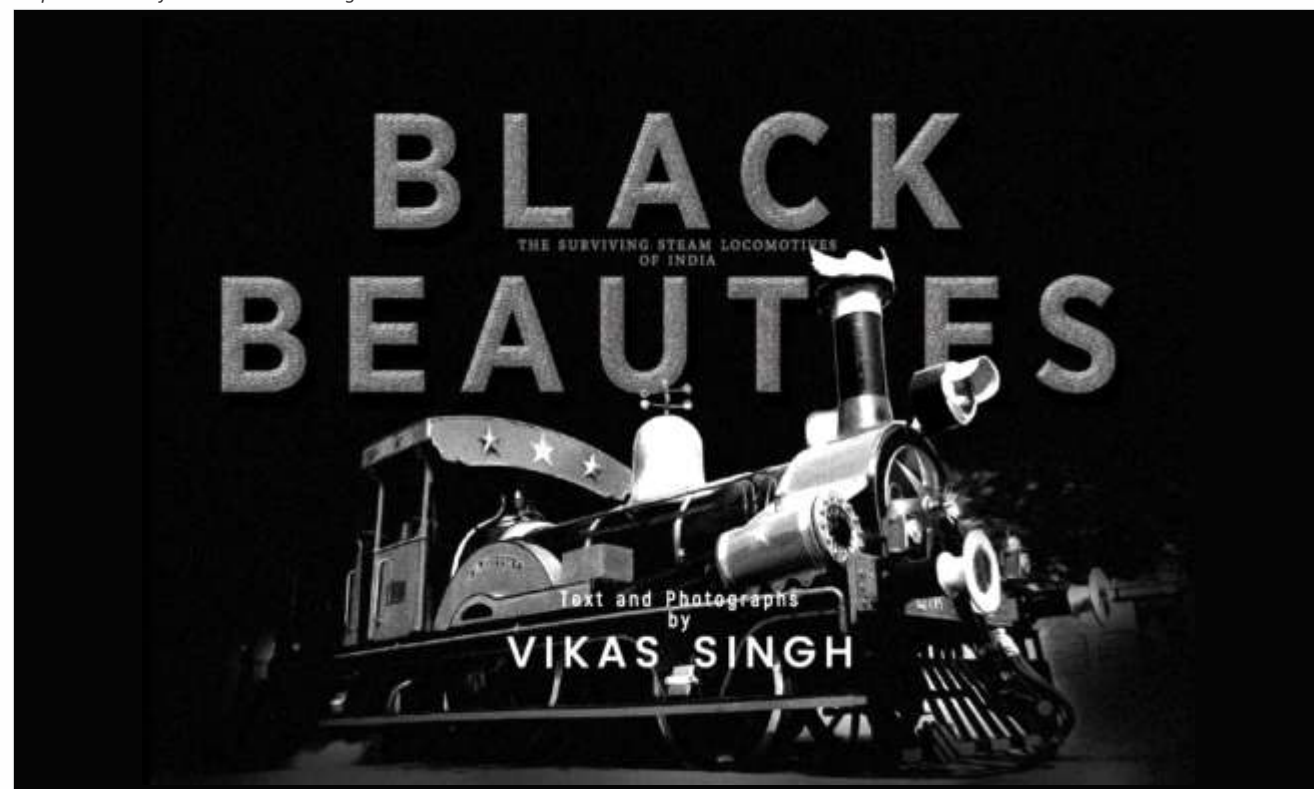
The next talk on the 21st of November, will be by Apurva Bahadur, whose hobby is photographing trains against picturesque backgrounds. Note this date and be there as you can be sure that the talk will be as enthralling and fascinating as the talks we have already had.

Black Beauties – The Surviving Steam Locomotives of India

The Rail Enthusiasts' Society takes great pleasure in announcing that it is sponsoring its first book with the title "Black Beauties – The Surviving Steam Locomotives of India". It is expected to be released very shortly.

The book is compiled and written by none other than Vikas Singh. Whatever field Vikas indulges in, he gets into it wholeheartedly and with panache. This is obvious in this book as well. To whet your appetite, we would like to inform you that Vikas has included the photographs of 299 steam locos that are still surviving in our country. There would only be a handful that he may have missed. In a country where we are very poor at documenting, this pictorial record of our existing and surviving steam heritage has come just in

Proposed cover of the book on surviving steam locos



time before even these few survivors are lost. Kudos to Vikas for his perseverance.

Steam Shed – Baripada

The project for developing the old steam loco shed at Baripada, along with restoration of two locomotives and a few other old carriages has been approved and requisite funds arranged. Members of the Rail Enthusiasts' Society raised it on their forum that led to the matter being raised at the appropriate level, leading to positive results. A note on saving the locomotives and other rolling stock of the shed was prepared by Somsubhra Das and Rudranil



One of the derelict steam locos at the Baripada shed



A 'Shay' geared steam locomotive that is in use on the Alishan Forest Railway

Roychowdhury, both members of the Rail Enthusiasts' Society and founder members of TrainTrackers.

This note formed part of the justification which was sent to the appropriate level for sanction and funds. Our thanks are also due to the Divisional Railway Manager of Kharagpur Division for heeding to our request and processing the sanction. We are hoping that the work will be completed in time for the Railway Week in April 2021. The Rail Enthusiasts' Society is not only ready but keen to assist any renovation or preservation of rail heritage that may be required by the Indian Railways or any other organisation operating or dealing with the railways.

2020 India – Taiwan Online Forum on Railway Cultural Heritage Conservation

Represented by its Secretary, the Rail Enthusiasts' Society participated in "2020 India-Taiwan Online Forum on Railway Cultural Heritage Conservation" as an observer. This virtual forum was conceptualised as an occasion for key railway institutions from India and Taiwan to meet, share knowledge and deepen existing collaboration on the subject of rail heritage. India and Taiwan boast of an impressive inventory of rail heritage and share the rare

privilege of having similar globally significant mountain railway sites – Darjeeling Himalayan Railway and the Alishan Forest Railway: hence this forum.

The Indian side was moderated by Moulshri Joshi, who is the Principal of Space Matters. She also happens to be a member of the Rail Enthusiasts' Society.

Covering 86 kms, the Alishan Forest Railway is a very popular mountain railway in Taiwan. It was originally constructed for logging, but today is a major tourist attraction. In many ways, it is similar to our own Darjeeling Himalayan Railway with its Z-shaped crossings for gaining elevation. Unlike the latter though, it has 50 tunnels while the DHR has none. Owing to its logging origins, it uses Shay geared steam locos that had been designed specially for logging purposes. There is an article on geared locomotives such as the Shay in Vol. 2, No. 2 of *The Rail Enthusiast*, bringing out their logging origins.

Photos: From the book "Indian Railways – More Miles...More Smiles: The picture was taken by Lalam Mandavkar

Water colour renderings of stations: Courtesy Rajat Bhargav

Brienz Rothorn Railway: Courtesy Vikas Singh

Baripada Steam Loco: Courtesy TrainTrackers

Cover of book: Courtesy Vikas Singh

Shay locomotive: From the Internet

For Our Budding Enthusiasts



The Train-5 Electric Locomotives

Hi again!

You are now getting to be experts. I am a train and I have in the past told you about rail track and rail bridges. I have also written about steam and diesel locomotives. As promised, today I will tell you about electric locomotives. The Ministry of Railways has already decided that it will convert all rail routes in the country to electric traction by the year 2023. Thus, in the not too distant future, all trains on the Indian Railways, except some hill railways and a few lines of tourist or heritage interest, will be hauled by electric locomotives only.

A Jhansi-based WAG5 locomotive

The first thing to know about electric locomotives is that they do not have a conventional “engine” or an electricity generator, as a diesel-electric loco does. They draw electricity from an external source and use it to run motors that drive the wheels. The electricity can be collected from an overhead wire or from a third rail. On the Indian Railways, an overhead wire is the norm. Kolkata Metro is perhaps the only line that draws its power from a third rail.

There are basically four types of electric locomotives: Direct Current (DC), Alternating Current (AC), those that can work on either AC or DC and finally, the ones which operate and

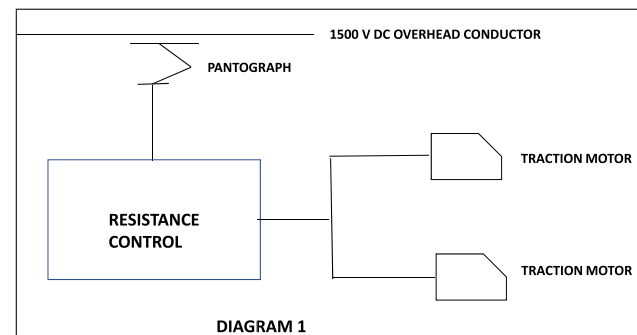


*A YCG1 locomotive. This worked around Chennai area, the only part of the Indian Railways Meter Gauge network that was electrified
Kalyan, near Mumbai, was one of the few sheds that homed dual-voltage locomotive that could work on AC as well as DC. This is a WCAM3*



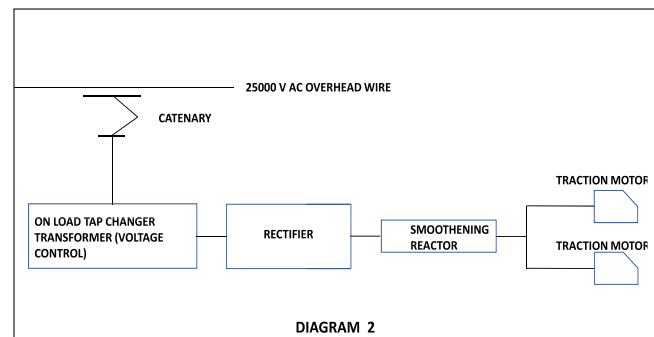
derive their power through an on-board battery. On pages 06 to 10 and on 11 to 15 of the last issue of **The Rail Enthusiast** (Vol. 5, No. 3), there are two good articles on the history of electrification in Eastern and Western India respectively, where you will read that we first went in for 1500 Volt DC, then 3000 Volt DC for a very short duration, and finally, 25000 Volt AC. Today, all electrified lines in India are energized to 25000 Volt AC only. It may be noted that the AC supply is single phase and at a frequency of 50 cycles per second. There is a perception that railway electrification is something very new; it certainly isn't and was introduced in the country as early as 1925 in the Mumbai area and 1931 around Chennai, well before any diesel loco was inducted. Diesel shunters first made an appearance in the 1940s and main line diesels only in 1954.

Whether the locomotive is AC or DC, current is collected by the loco through a device called a pantograph mounted on the roof. The current is then controlled and fed to normally 4 or 6 traction motors that drive the wheels through suitable gears. The basic layout of a DC locomotive is given in Diagram 1.



Till the year 1959, the traction motors that were being used on the electric locomotives in India worked on DC supply only. Therefore, DC locos were quite straight-forward and simple. The AC locos were not, as firstly, the supply was AC and the motors DC, and secondly, the voltage was much higher (25000 verses 1500). Thus, in a 25000 Volt AC loco, you first lowered the voltage through an onboard step-down transformer. Then, through a rectifier uni-directional pulsating current was obtained which was subsequently fed to smoothing reactors which smoothed the pulsating current and eventually steady DC was fed to the traction motors. The layout of an AC locomotive with DC traction motors is given in Diagram 2.

Finally, 3-phase motors that needed AC supply made an appearance on electric locos. For the AC supply to the motors, the incoming single-phase voltage was stepped



down, the stepped down single phase AC was fed to controlled rectifiers that converted it to DC. The current then passed through a bi-directional power handling converter that inverted the DC to 3-phase Variable Voltage Variable Frequency AC, which was fed to the AC Traction Motors. Today, all the newly manufactured electric locomotives have AC traction motors. For readers who may not be familiar with the terms, a rectifier converts AC to DC while an inverter converts DC to AC.

Apart from the pantograph that only electric locos have, these locos can be recognised by the loco-nomenclature code that IR follows. The code is normally alpha-numeric. Since all electric locos on IR today are Broad Gauge (1676 mm), the first alphabet 'W' indicates that the loco is of wide gauge, i.e. Broad Gauge. The second letter 'A' shows that this is an electric AC loco. For DC locos, the figure is 'C' and for locos that can work on AC or DC, it is 'CA'. Of course, dual voltage locos do not utilize DC anymore, as all the old DC sections have been converted to AC. The last alphabet indicates the type of service: 'P' for passenger, 'G' for goods and 'M' for mixed. These three alphabets are followed by a number. This is the model number. Variations in the basic model are designated by alphabets and/or numbers. Thus, you could have a WAM-4 locomotive, whose variations could have nomenclature like WAM-4 3S-2P or WAM-4 2S-3P or WAM-4 6P. The Meter and Narrow Gauge sections of the Indian Railways did not get electrified except for a short Meter Gauge section from Madras (now Chennai) Beach to Tambaram in 1931. Although primarily built for commuter traffic using DC EMUs, YCG-1 locomotives hauled freight trains, even in non-electrified sections (Yes, you read correctly, they operated on batteries in non-electrified DC sections). Post 1967, YAM1 locomotives served on this section. Subsequently, Madras Beach was connected to Madras Egmore, and the electrification extended from Tambaram to Villipuram. In 1967, this section was converted from 1500 V DC to 25000 V AC. In the year 2004,



A WAG9HC class locomotive. Generating 9000 HP, this is the most powerful single unit loco in the country. Only the double unit WAG12 is more powerful
A passenger train hauling locomotive, the WAP5





RAIL ENTHUSIASTS' SOCIETY

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The most powerful locomotive in the country: a 12000 HP WAG12. The loco has two units permanently coupled

the line was converted to Broad Gauge, so that today, there is no electrified Meter Gauge line in the country.

Almost all electric locomotives being operated today are manufactured in the country at Chittaranjan Locomotive Works (CLW), which had earlier produced steam and diesel locos as well but is today an exclusive electric loco plant. With regard to the latest passenger locomotive on IR, CLW has manufactured a semi-high speed passenger locomotive WAP-7HS #30750 which is homed at Ghaziabad Electric Loco Shed. This locomotive had attained 180 KMPH speed during trials held in Kota. Coming to the most powerful electric freight locomotive (single unit) on Indian Railways, CLW, at its Dankuni unit, has manufactured WAG-9HC #32359 which has a rating of 9000 HP and had successfully attained 100 KMPH speed during its trial runs.

A second plant, viz. the Electric Locomotive Factory, has been set up at Madhepura in Bihar, and has recently gone into series production. This plant is manufacturing 12000 Horsepower WAG12 locomotives and is in collaboration with the internationally renowned Alstom of France. This locomotive comprises of two units permanently coupled

and is likely to be a game-changer with regard to freight operations of the Indian Railways. Electric locomotives are also being manufactured at the Diesel Locomotive Works at Varanasi. This plant was set up in the 1960s to manufacture diesel locomotives but has now been converted to produce electrics: its name has recently been changed to Banaras Locomotive Works.

I have now told you about electric locos as well. However, the future of electric passenger trains is likely to be train sets, the kind of trains that run on Metro systems or Local trains in cities like Mumbai and Kolkata. The iconic Vande Bharat Express is also a train set, the first for long-distance trains. I will cover these in one of my later write-ups. In the next issue, I will tell you about rail passenger coaches.

(With inputs for the text and diagrams from Kaushik Dharwadkar, a rail enthusiast with a special interest in electric locomotives)

Photos: Courtesy Somshubhra Das and Rudranil Roychowdhury of TrainTrackers for all photos except the WAG12 picture which is from the Internet

The Rail Enthusiasts' Society, incorporated on the 28th of December 2015, aims to provide a platform for rail enthusiasts to disseminate knowledge, air their views and exchange ideas regarding the railways in India or overseas. Its first activity was to publish a magazine whose 16th issue you are now reading. Owing to the Covid-19 pandemic, this is our third issue that is an e-Copy in PDF format and is free of cost. Other than issue of the magazine, we have organised enthusiast's trips/hikes, visits to construction sites, debates and quizzes amongst school children on the need for preserving rail heritage. We have recently introduced virtual talks on subjects of railway interest. Three talks have been completed.

On the next page, you will find details of how you can become a member of the society. In case you are interested only in the magazine, the subscription rates are as follows:

- Single copy** ₹ 150.00
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They Keep the Wheels Turning

It takes more than a General Manager or a Divisional Railway Manager to keep the wheels of a railway turning. It is the rank and file, the ordinary unassuming humble railway men and women who do as much, if not more, to make the railroad tick.

One such person was the late Madhukar Ambadas Kide, who expired in December 2013 at the age of 90. Retiring in November 1982 after 33 years of exemplary service, he did his duties with dignity and professionalism. Most of his working was in small towns and wayside stations of Nagpur Division but he never sought favours like getting posted to a bigger town. When posted at Yenor, a station where no passenger train halted, he had to stay 10 kms away at Hinganghat for his childrens' education. Summer of winter, hot or cold, rain or storm, he bicycled 10 kms each way every day without a complaint to fulfil his duties.

His good services were recognised and he was awarded the medal shown in the picture on this page when he was Assistant Station Master at Bhandak. It is the likes of dedicated unseen staff members like Madhukar Kide who are the strength of the railways and do not allow its wheels to get jammed.

Inputs from *Harshad Joshi*