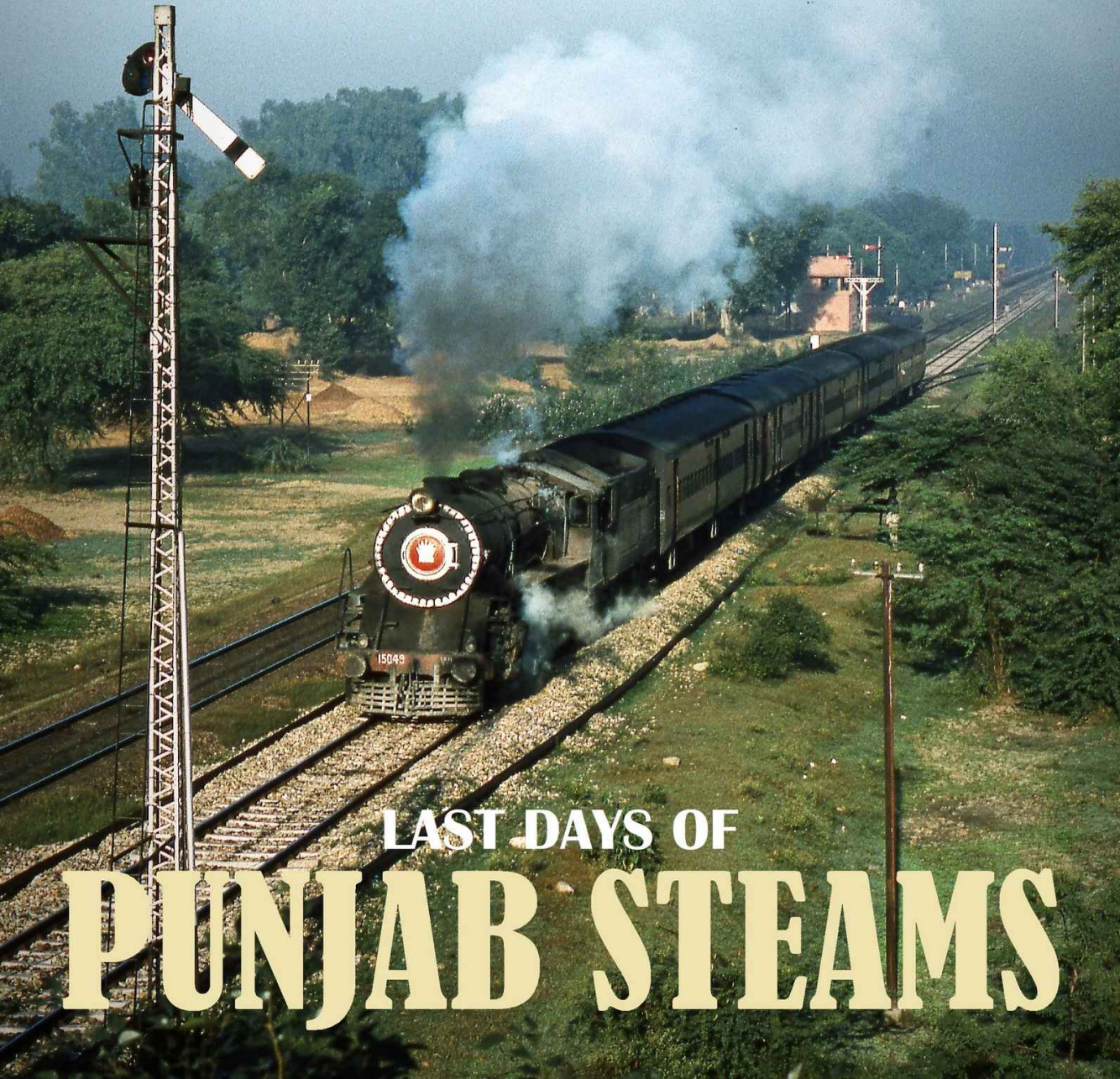


RAIL CANVAS

A TrainTrackers' Initiative

May 2023



LAST DAYS OF

PUNJAB STEAMS

The romanticism about the steam locomotives still holds a special place in the hearts of all ferroequinologists. Those were the days when steams used to throttle down the tracks with clouds of soot and smoke besieging the neighbourhood accompanied by the reverberating sounds of the pistons.... Those were the days when semaphores used to trundle down giving assent to hurtling trains for proceeding further.... Those were the days when photographers used to record these scenes in their cameras with manual film winding and rewinding and printed them for preserving the past which acted as invaluable archival materials. In this age of 'Digital India' and 'Rail Badhe Desh Badhe', the Old Age Charm of the railways has vanished in thin air just like the steams from the tracks of the great Indian Railway network. Recreating such scenes and reliving those momentous moments is surreal but thanks to **Jakob Stilling** who has made this possible. Our Cover Story *The Last Days of Punjab Steam* leads us to those days when steam dominance in the form of motive power in the backyards of Punjab were slowly losing steam. Thanks to the writer's many visits to India and his penchant for railway photography that we can savour those rare moments of the past. Stilling's works not only unveils his passion but also acts as chronicles of the bygone era which has gone into the oblivion of the multitude. Documentation made for the sake of it and those made from sheer enthusiasm differs from the results and Stilling's creations demand attention and depicts the glorious past of steams in India in a substantial way.

Just as our present connects the past with the future, likewise, Jakob Stilling repaints the past as **Rudranil Roy Chowdhury** connects the future with the present through his Photo Story *The Underwater Journey* on the unbelievable journey of the East West (EW) Metro of Kolkata.

Science and its technology have often failed to explain various phenomenon in this mortal world. Once there is no answer, such occurrences often get labelled as acts of evil powers or grace of Almighty depending on the impact of such outcomes on mankind. The Almighty and His charisma or the Evil with its magical powers have often led to the doorsteps of various religions and sects and universally, in most religions, rivers have been considered as sacred for they being the 'life-supporting element' to civilizations over times immemorial. 'Hinduism' is no exception where the river Ganges has been held as the most sacred river. Millions still believe in doing away with their lifetime sins by simply taking a holy dip in it. But a train running right under the 'holy river' might have taken some of the sheen of it being a 'sacrosanct' away and may sow the seeds of rationalism among masses. Ganga has been bridged by many but has never been tunnelled till date until KMRCL achieved the incredible feat. The wait got finally over as the EW Metro started its journey beneath the Ganges connecting the twin cities of Kolkata and Howrah. The journey of the EW Metro under the 'sacred riverbed' of the Ganges is a testimony of a relentless endeavour of man and the pride he takes in such strives. Rudranil Roy Chowdhury presents a photo commentary on the saga of underground journey of the EW Metro right from the place where it happened as he unfolds every scene that made it to the pages of history for being the first metro in the entire nation to cross an underwater tunnel.

Kolkata was not abuzz with this achievement of the EW Metro only. The City of Joy was also celebrating 150 glorious years of its Tramways in a gala event – the Tramjatra-23. Tramjatra and Roberto D'Andrea are perhaps synonymous to each other. Roberto has been frequenting Kolkata for the last 29 years and is the face of the Tramjatra. He has not only been instrumental in building a 'tramway friendship bond' between Kolkata and Melbourne but also staging 10 Tramjatra events which have revolved around trams and their positive impact on making cities more liveable. Thus, Tramjstras have been symbols of exuberance and ebullience which exhibit the true colours of the city irrespective of age, sex and religions. *150th Anniversary of Kolkata Tram* by **Tony Graham** and **Roberto D'Andrea** defines how the City of Joy celebrated the journey of its trams – its most loved mode of transport, how the trams of Kolkata were given royal treatment and got feted by media during the event and how a small group of protagonists in CTUA and Team TrainTrackers flawlessly pulled off the mega event with their dedication, commitment, tenacity and hard work. This article is a tell-all one which encompasses every detail from the micro-level plannings and their execution which included unique events like a colourful parade of tramcars, from oldest to latest, commencing from Gariahat Depot to Esplanade and then to Shyambazar and Nonapukur Tram Workshop; Essay and Drawing Completion for students and panel discussion to raise awareness about climate change and its impact thereof – all to bring to the fore the belying cultural heritage and importance of trams.

But beyond all these celebrations and vibrance, the prospect of phasing out trams and earmarking them as 'Heritage Material' by a nonchalant government looms large. Trams in Kolkata has been subjected to slow death by reducing route kilometres day by day. The oldest surviving tram system of Asia-Pacific is still failing to find favours with the men in power despite its eco-friendly nature. While



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the utility of a metro network for faster and smoother transit cannot be denied but the penetrability of such network, at least in Kolkata, seems to be a far-fetched dream and that is where trams must be brought to the picture as an 'all inclusive' sustainable public transport for decongesting the already saturated roads. **Dr. Debasish Bhattacharyya** in his *Relevance of Calcutta Tramways* writes home about all these aspects of tramways among many others as CTUA continues to fight the diabolic powers who are hell bent on decimating the tram network in Kolkata while promoting Electric Buses and Auto-crazy in an unfortunate ambience of masses who are also seeking 'immediate solutions' rather than long term ones.

From steams to trams and metros, we change tracks over to three articles of contrasting flavours from three railwaymen belonging to different generations. **Om Prakash Narayan**, the working Sr. Public Relations Officer, Southern Railway, Chennai writes home about the enduring journey and struggles of the Nilgiri Mountain Railway (NMR) towards earning the prestigious UNESCO World Heritage tag while he himself being one of those chief protagonists in achieving the feat. *The Story of the Heritage of the NMR* is an exclusive insider's story which reflects on the hard work, sincerity and the passion that made this dream a reality. Next is **Kartic Chauhan**, the then Heritage Officer of the WCR zone, who in his *A Railway Picnic at Shikara* talks us through his the then new assignment amidst the Satpura Hills which became an adventurous and enchanting journey that made light of the numerous challenges that his job offered and left a lasting impression of his tenure there. The story revolves around a small station in Shikara and how the writer got enamoured of it. Finally, we have **Ravindra Bhalariao**, a retired railwayman whose *Train to Itwari Junction* carries a unique essence altogether. It is about his attachment towards the Itwari station which has seen so many changes with time and has shown him different aspects of life. His narration narrates his humane take on insignificant incidents which carries different values of life. His article is about love, loss, remembrance and various facets of human connection with faith.

Moving on to our regular series, we have **Anamitra Bose** who is carrying on with his journey of touching down on different cities of the country having their own metro systems in his article *India – The Nation with growing Metro Systems* and his latest offering in Technical Insight section is on the metros of the southern parts of India which includes the ones from Chennai, Bengaluru and Kochi. Next up is **PK Mishra**, the GM of Modern Coach Factory Raebareli, who has been scripting the *History of the East Indian Railway* which steps into its 7th installment with this issue.

From the stark realities of life, let's step into the world of Fiction as in this genre we have a special anecdote from **Sanjoy Mookerjee**, the Ex-Financial Commissioner of Indian Railways, who essays *The Tusker Regiment*. The characters here ensemble to narrate the experiences of an English family's visit to India whose ancestral roots trace back to serving Indian Railways but as the name suggests, there are some twists in the tale as the tuskers of the Dudwa play a fascinating role.

We round things off with an article *A Surprise at Phulera* based on the surprise spotting of a Lumding YDM4 inside the closed Phulera MG DLS along with another Photo Story on the *Silver Jubilee Celebrations of Hubli DLS* by **Sourav Dutta** which included presentation of a Certificate and a Trophy by the author, on the behalf of Team TrainTrackers, to the Shed Authorities in recognition to the relentless service of the DLS towards the nation. We conclude with Railway Sketches by **Dr. Sudakshina Kundu Mookerjee** and **Sambit Chatterjee** along with other sections in Photo Junction and News Station.

In our endeavour to present our readers with different aspects of Railfanning, we had started our journey from August 2020 which implies that our next issue will make us step into the 3rd year of our publication. Thanks for your unconditional and continuous support that keeps us motivated and inspires us to grow.

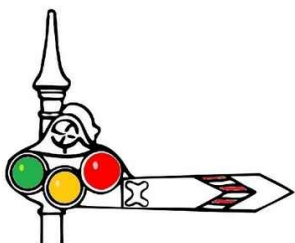
Somsubhra Das

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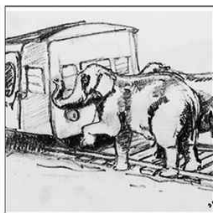
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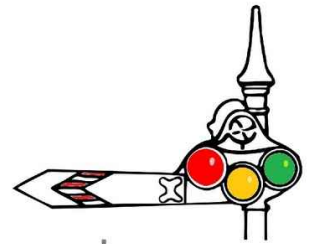


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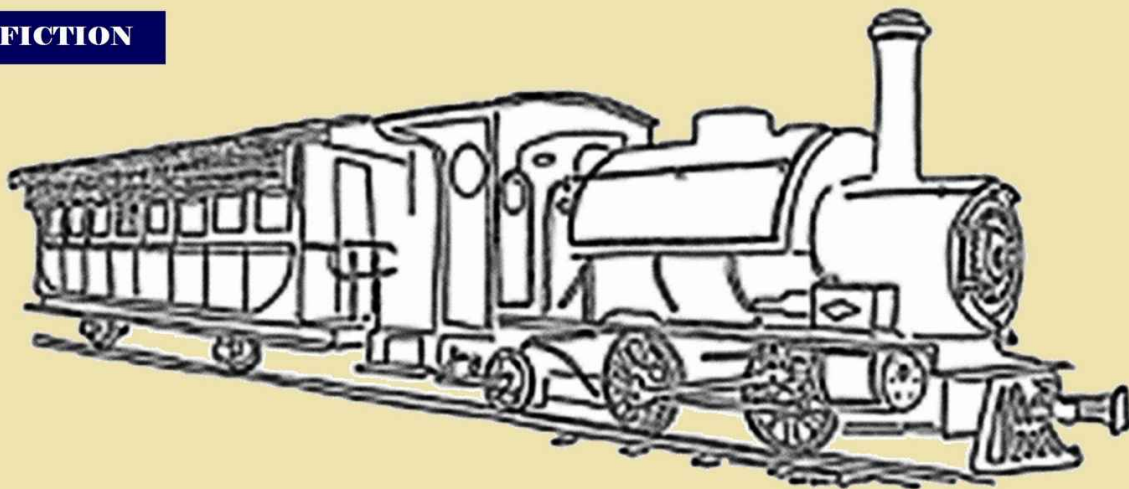
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The Tusker Regiment

Sanjoy Mookerjee

It was a crisp January morning in 1975 at the North Eastern Railway colony at Gorakhpur. John and Emma MacLeod had just arrived from Aberdeen, Scotland with their infant son Chris, to visit the land where their grandfather, Archibald MacLeod had spent his life and times, working as a Locomotive Inspector for the Bengal and North Western Railway (BNWR) in the northern provinces of British India.

After the untimely death of his dear wife Mary at Gorakhpur due to Malaria, Archibald had decided to call it a day and return home to his children, leaving his beloved country. In 1943, when the BNWR was merged with the Oudh and Tirhoot Railway (OTR), Archibald finally gave up his job and went back to Scotland to lead a retired life.

Archibald died in 1971. One Sunday morning, while reorganising his grandpa's room, John unexpectedly ran across a couple of old steel trunks full of Archibald's diaries, containing fascinating accounts of railway life in India during the British Raj with vivid portrayal of the beauty of the land and its people.

Captivated by these memoirs, John decided to publish them. But he wished to write an epilogue to conclude the publication, where he wanted to pen down a comparative sketch of the railway life in present day India with that during his grandfather's days. So, once their little son Chris was old enough to travel, John and his wife, Emma availed the first opportunity to visit Grandpa's favourite land.

It wasn't very long before the MacLeods realised that to the railwaymen at Gorakhpur, even after three decades, 'Archie Saheb' still remained a legend. After visiting their grandmother's grave in the yard of the colony's church, which the local community still looked after with great affection, the Railway Institute of North Eastern Railway, the successor of BNWR and OTR invited them for a

remembrance feast in honour of Mary and Archibald. The Institute members proudly pointed to the century old Mahogany board displaying the names of the secretaries of the Institute where Archibald's name was inscribed in golden letters, since he had been its longest serving secretary, till his departure for Scotland. As a memento, the Institute presented John with a framed photograph of his grandfather taken in 1935, flanked by the Managing Committee members. John and Emma felt at once proud for the Grand Old Man and humbled at receiving such a priceless gift from their hosts.

The couple felt even more overwhelmed when the head of the Railway requested the Divisional Traffic Superintendent, a bubbly young man, Rakesh Srivastava, to show the couple around during their stay. John found Rakesh to be an enthusiastic officer with an uncontrollable passion for photography. The latter had even set up a dark room at his residence, where he processed films by himself. Both of them instantly struck up a warm friendship.

During the next few days, whenever Rakesh went out on tours of duty in his designated railway inspection carriage, Emma, John and Chris would invariably travel as his guests. The wood-panelled saloon car, with its amazing wall carvings, intricately etched glass lampshades and the musty flavour of green leather upholstery took Emma back to the days of aristocratic luxury and splendour, about which she had read only in books. To her, the saloon felt almost like a queen's boudoir! Little Chris loved to look out of the rear window of the carriage, which was meant for inspection of the railway lines. Even as the train sped on, while Rakesh continued to take measurements and notes sitting by this window, Chris sat quietly on the table beside him, watching the receding tracks, spellbound.



The Railway Colony Church

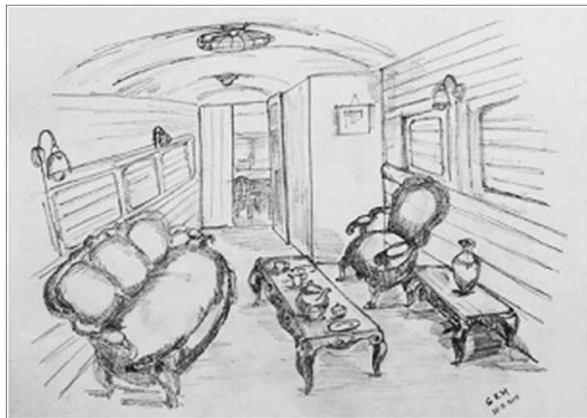
Rakesh informed John that this delightful carriage was built way back in 1940. "Today's railway carriages are much more utilitarian," he remarked wistfully. "Very soon, the life of this remarkable coach will end and it might even be auctioned as scrap," he observed. But Rakesh would have none of it. He was determined to preserve it as a museum piece for posterity to admire. John and Emma wholeheartedly agreed.

To the MacLeod's, the best part of these trips was the delicious curries churned out by Karim, Rakesh's attendant. What amazed Emma was Karim's ability to cook delicacies in the small pantry on board, even when the train was on run!

Over the next couple of weeks, Rakesh took his guests to all those places where Archibald had lived and worked. Everywhere, they were regaled with unbelievable anecdotes of 'Archie Saheb' for his acts of duty and his humane spirit. During these trips, the couple made scores of friends, which made them yearn to come back to India time and again. To John, this visit was almost a pilgrimage!

Sooner or later, all good things have to end. The MacLeods were due to return home in a couple of days. But Rakesh insisted that their mission will remain incomplete without a visit to the Mailani-Dudwa railway line, which was one of Archibald's beloved sections. This track passes through the picturesque Terai region skirting the foothills of the Himalayas, amidst dense forests of tall Sal trees and a variety of fauna, large and small. Rakesh described the beauty of Dudwa railway station, situated deep inside the National Park of the same name, renowned for its tigers, now protected by law. Sighting of big game in the area was quite common. Rakesh's portrayal was enough to induce John to agree to a last, quick trip of this exotic rail section, notwithstanding their tight schedule. It will surely be exciting to cross paths with a couple of tigers or elephants before return, he thought. If not anything else, such an experience would certainly spice up the epilogue to Grandpa's memoirs!

Karim informed Emma that very few trains run over this



Wood Panelled Saloon Car

section and the area is quite devoid of human habitation. So, he took special care to stock up extra food, water, cereals and powdered milk for the baby. Both John and Emma were excited to savour Grandpa's favourite line on board Rakesh's exotic saloon.

During their visit across northern India, Emma had noticed a fervent pace of modernisation, with thriving agriculture and robust industrial growth. But as their train entered the branch line of the erstwhile Rohilkhand and Kumaon Railway from Shahjahanpur towards Mailani Junction, she felt as if they were going back in time. The railway buildings, bridges and signalling system seemed to retain their 19th century feel. Even the train's rusty old steam locomotive and the dust-red passenger cars appeared untouched for decades.

Late at night the train arrived at Mailani Junction. By then, Emma and Chris were fast asleep. While the two friends were chatting, Rakesh declared that he intends to go 'foot-plating' on the locomotive at night. In fact, he had arranged special permission for John to ride on the steam engine of the train with him. Would he care to join?

John needed no second offer, especially when Rakesh explained that as a Locomotive Inspector, Archibald was required to ride on the footplate of engines almost every day to supervise, guide and ensure alertness of the train drivers while they were driving. That night, this was what Rakesh also proposed to do.

Once decided, there was no time to lose. The inspection carriage being at the very end of the train, John and Rakesh made a dash along the station platform towards the locomotive and reached it just as the signal was being lowered for its departure. Climbing upon the engine footplate, Rakesh introduced John to the driver, Narayan Rao and his fireman, Munna Lal as the grandson of the legendary 'Archie Saheb'. With bandanas of blue cloth wrapped around their heads, and beaming smiles on their soot-covered faces, the crew welcomed John and Rakesh on board, handing them kerchiefs to protect their heads from coal dust.

It was a cold night. The full moon was high in the sky. The

red glow from the firebox to which Munna Lal was shovelling chunks of coal to make steam, presented John with a strange feeling, mysterious, yet warm.

Narayan Rao tugged at the whistle chord with one hand and the throttle with the other. And with a shrill hoot, the iron horse slowly eased forward, throwing up white smoke from its long chimney in front, as it picked up speed. John gripped the rear handrail of the driver's cabin hard, in order to maintain his balance.

Once into the countryside, the beauty of the terai gradually unfolded, enhanced by the surreal radiance of the silvery moonlight. Slowly, the farmlands gave way to tall trees as the train entered the woods, while the moon played hide and seek through the lofty boughs, finally losing its battle as the forest engulfed the scene all round. As the gradient increased, so did the puffing of the old locomotive, eating up miles triumphantly with its steam power, accompanied by its characteristic hiss and rattle. Even in this cold winter's night, the heat of the engine was intense. John wondered how the drivers managed to run these locomotives during the hot Indian summer!

While John tried to brace himself against the unannounced lurches of the loco, for Rakesh there was work to be done. Unfazed by the heaving engine, gripping a flashlight firmly between his jaws, he nonchalantly proceeded to check the movement logs and the fitness certificates of the crew kept in a chained box on the floor, while keeping an eye from time to time on the flickering dials, to ensure that all was well with the train. At every station, John noticed that the Engine Driver exchanged hand signals with the Station Master and swapped a metal ring with a ball 'token' inside it which, Rakesh explained later, was to ensure that no other train could enter the section while their train was passing through it. John marvelled at this ingenious, yet simple, time-tested practice of ensuring safety on rails!

At the dead of night, the train reached Palia-Kalan Station. Looking back, Rakesh smiled at John, "let's get some sleep now." And, bidding a warm goodbye to the driver and fireman, they left the steaming engine and made their way back to the saloon car. By the time the train began moving once more, Rakesh was fast asleep. But for John, sleep was impossible. In the comfort of the carriage, overwhelmed by the night's adventure, John sat pondering. The genial faces of Narayan Rao and Munna Lal came back to him again and again. "Sadly", he thought, "while others are in bed, they have miles to go before they can sleep."

Washing away the coal-dust from his face and arms, he drew up a chair to the inspection window. From there he watched mesmerised, as the silver streak of the moon reflected off and on from the shining steel of the retreating rails, whenever it found gaps through the expanding greenery, in rhythm with the clatter of the wheels on tracks. Soon the forest completely enveloped the surroundings, while the clatter of the wheels magnified as it crossed quaint old bridges of stone and steel, fording rivers and streams, large

and small. John wondered how his dear Grandpa would have felt, had he been here with him. Tonight, he missed the old man intensely.

Suddenly, he was jolted from his reflections by the distant hooting of the locomotive, followed by the metallic screech of the brakes. They had come to a stop in the middle of what appeared to be dense jungle country! After the noisy journey, the silence was overwhelming. Far, far away, he could hear the scary call of a night owl in the forest. Was this Dudwa? Everyone in the saloon car was in deep slumber. John noiselessly unhooked the door-latch and hopped down on the gravel below. "My God! It is cold," he couldn't help crying, as the dense, wet mist cloaked him.

Yes, this looked like a tiny railway station having only two lines. There was a low platform which ended way ahead of the carriage. Peering through the haze in the first light of dawn, a small cottage-like station hut was vaguely visible. Presently, John heard footfalls of men speaking in Hindi, approaching from that direction. He realised that these were railwaymen deputed to detach their coach from the train. Behind them followed an official, wearing a smart, deep-blue regulation suit and hat.

"Good morning, Sir," said the latter, desperately rubbing his palms to evoke some warmth out of them. "I am Chatterjee, Station Master. You must be the guest of our DTS. Welcome to Dudwa, Sir."

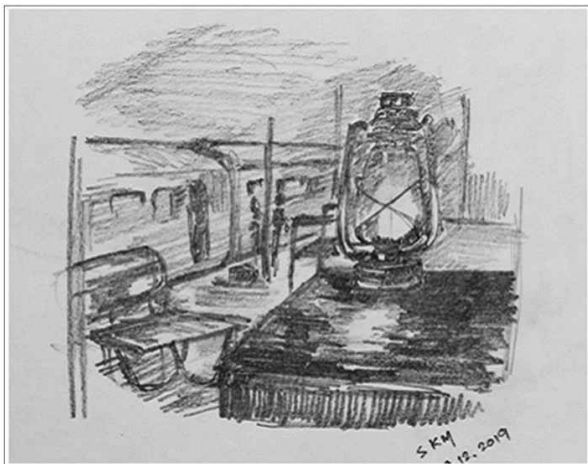
"Sorry I am delayed," he continued, "You see, surprisingly the train arrived before time! I do hope you had a pleasant journey."

Having said that, Mr. Chatterjee disappeared towards the station, lost in the swirling fog, as fast as he had come. On his way, he called, "I'll be back Sir, as soon as the engine is watered and the train is on its way. Meanwhile, I shall have some tea sent over to you."

By then, the carriage had been uncoupled from the train. John decided to explore the surroundings. Walking towards the station, he noticed passengers making a beeline for the lone tea-stall on the platform, where a vendor wrapped in a thick blanket, with a turban on his head was pouring the hot beverage from large aluminium kettles into earthen cups under the flickering light of an oil lantern. John requested for a cup. But by the time his turn came, the stock had run out! Seeing the disappointment upon his face, the tea-stall owner said in broken English, "No worry, Sir. SM Saheb has ordered for you. I bring tea to Saloon quickly!"

Relieved at his assurance, John thanked him and turned back. Just then the train's guard blew his whistle, prompting the travellers to hasten back to their seats. Within minutes, drawn by the heaving mammoth, the train started pulling out with a burst of steaming energy. Once it was gone, the hush of the woods returned. Slowly, John set off towards the warmth of the saloon car, now 'stabled' on the loop line.

Back inside, John found that Rakesh was up and the ever-ready Karim had warmed the morning's milk for Chris over



The lantern-lit Dudwa Station

his charcoal stove. Slowly the calls of the early morning birds filled the air. The Jungle was waking up! As promised by Mr. Chatterjee, the welcome tea arrived soon enough, in hand-crafted earthen cups. As they were sipping the beverage, the mist dissolved and the mellow sunshine of the winter's morning warmed the heart. In spite of remaining awake all night, John was ready for another day's adventure.

Mr. Chatterjee was a most resourceful host. After breakfast, while Rakesh attended to his duties at the station, the Station Master had arranged the help of a forest ranger to take the MacLeods on an elephant safari. Never in their wildest dreams could they have imagined the thrill of such an adventure! Riding upon Maya the elephant, even little Chris got animated, letting off squeals of mirth from time to time. John kept happily clicking away with his brand new Voigtlander 35 mm. camera. They grew ecstatic as they spotted blackbucks, wild boars, spotted deer, Nilgais, baboons, peacocks and a large variety of birds. But alas! The Great Indian Tiger eluded them. Afternoon was spent hiking around the forest paths, while the baby slept peacefully in the carriage under Karim's watchful eyes.

As night descended, John was informed that the electricity in the area, including that of the railway station, has been disrupted due to a storm. So, there was no way to charge the batteries of the carriage. Mr. Chatterjee suggested that they conserve energy. He sent a couple of Kerosene lanterns from the station to light up the saloon. John was completely exhausted by now, not having slept for over thirty-six hours. And as the evening progressed, it became rather cold. So, after a light meal, they all decided to hit their beds early, mullied by the distant howl of the jackals in the forest and the chirping of the crickets in the surrounding thickets.

Next morning, John woke with the glorious sunshine streaming through the saloon window. Dreamily, he glanced at his watch. It was already 9.30 am! Where were they? Still at Dudwa? Looking out, his fears proved to be true. But was the saloon not to be attached to the 5 am passenger train?

They were booked by the night mail train to Delhi so as to be able to catch the next day's flight to London. This delay will upset their travel plans completely!

Panic gripped John. Jumping up, he dashed into the adjacent compartment in search of his friend, whom he found busy in discussion with Mr. Chatterjee over tea.

"Rakesh," John exclaimed, "Are we still stuck at Dudwa? What happened to the 5 o'clock train? Sorry, I overslept," he stammered, "But I'm worried we might miss the train to Delhi tonight."

Pouring a cup of tea for John, Mr. Chatterjee quietly replied, "Mr. MacLeod, unfortunately the morning train has not yet arrived. We shall have to wait for it."

Rakesh intervened, "In fact, even last evening's passenger hasn't come. This often happens in this branch line, you know!"

John's tea remained untouched. "But why?", he demanded, astonished. "When will it arrive, do you think? Can we not leave by road instead?"

Mr. Chatterjee replied, "Sir, yesterday a crack was detected in a bridge a few kilometres down the line. Technicians are at work. As soon as it is repaired, train services will resume. And Sir, going by road is not possible since there are no taxis available here. To add to our woes, the station telephone and the railway circuit are both out of order due to the power disruption. So, I am unable to speak to the stations nearby either."

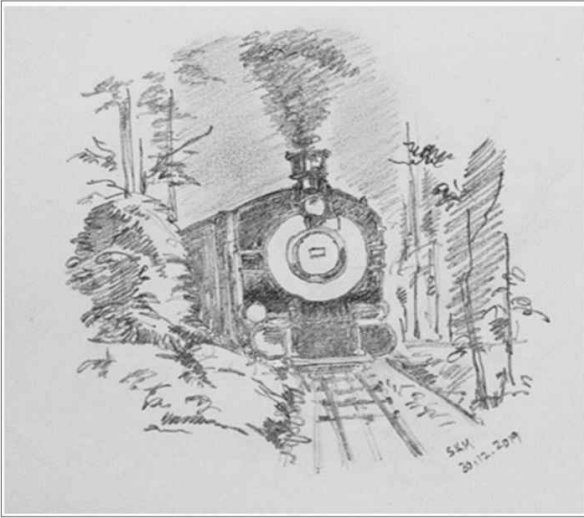
At that instant, Emma came out of the bed-compartment with the toddler in her arms. She had overheard the conversation. "Karim says that the drinking water for the baby is almost finished. So, he is boiling water from the station well. There's no water for cooking and the bathroom taps have run dry too."

"Well, Emma," replied Rakesh, soothingly, "Don't be alarmed. Chatterjee has sent a porter down the line to the next station for help. We should get credible news within the hour. Till then we will have to be patient."

The wait was proving to be rather worrisome for the MacLeods. They had never faced such uncertainty back home. Munching some dry breakfast, they waited, concern writ large upon their faces. This morning, the call of the jungle cuckoo bounced off their ears, unheard; and the beauty of the green glades surrounding the quaint railway station failed to impress their eyes.

Just then, Rakesh spotted a man waving a red flag in hand, running up the railway track. It was the station porter, Kesh Bahadur, shouting on top of his voice, "DTS Saheb, good news. The bridge is repaired! Last evening's train will reach within half-an-hour. I saw it coming from that hill top." All eyes turned towards the hillock, a kilometre to the west to which he was pointing.

There was much rejoicing, back-slapping and handshakes. Kesh Bahadur was definitely the hero of the hour! John, with



The Long-Awaited Train Arrives

his Voigtlander 35 and Rakesh with his classic Rolleiflex, competed with each other to get the best shots of Kesh Bahadur, proudly holding his red flag aloft triumphantly.

Soon enough, the long hoot of the iron horse was heard at a distance, puffing away as it hauled the train up the slope to Dudwa Station, once again shattering the silence of the forest. At last, John was relieved that they would now be able to reach civilisation soon. But their adventure didn't end here!

Now the railwaymen encountered an unforeseen technical obstacle. There was no shunting engine at Dudwa! Also, there was no way in which the engine of this train could be used to attach the saloon, since both the lines of the tiny station were occupied. Even Rakesh couldn't find a solution. Had the phone been working, he would have requested the adjacent station to send over a spare engine for shunting the saloon.

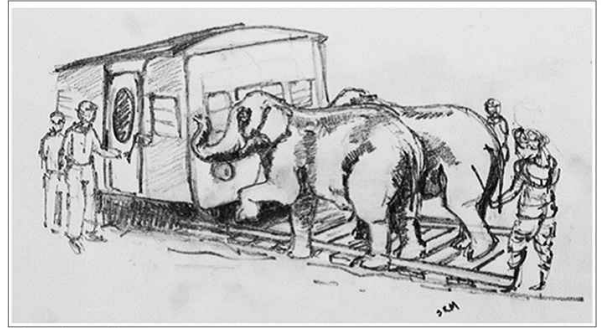
But Mr. Chatterjee was not to be outdone. Many a times, at this remote station, he had faced difficult situations and knew for sure that the forest always has a solution, unwritten in rule books!

So, he decided to use his trump card! With a sly smile, he called out to his station porter "Kesh Bahadur, bring in the regiment!"

All of them kept wondering what this command meant. But to the sturdy Gurkha, the instructions seemed to ring loud and clear.

Promptly, Kesh Bahadur jumped across the railway tracks and disappeared into the jungle on the opposite flank.

John stood there, immobilised, bewildered. Is there an army regiment nearby, he wondered? There might be, he reasoned, as Dudwa was located very close to the Indian border with Nepal. Even so, how can the army help in shunting a railway saloon car? He gave up worrying. "Que sera, sera!" he



The Tusker Regiment

mused, "Perhaps India has its own way of solving problems." Soon however his hopes rose when, from the carriage Emma cried out, "Look, Kesh Bahadur is back!" Sure enough, plunging through the thick undergrowth, Kesh Bahadur emerged with the red flag held securely in hand radiating his now all too familiar smile. To everyone's surprise, following him with bells tinkling, trampling over vegetation, emerged Maya the elephant, with Ram Bharosé, her keeper, wearing his white turban and loin cloth, riding her victoriously. Seeing Chris, with a big wave of his hand, the 'Mahout' gave a wild yell. At once, two more tuskers from the 'forest guard', Mukti and Raju emerged from the jungle, flapping their ears and nodding their heads in wild abandon, their embossed bells jingling in unison.

As the 'Tusker Regiment' crossed the railway tracks, a roar of applause emanated from the train; and the children let out shrieks of delight. At the command of Ram Bharosé, the tuskers got to work, deftly pushing the carriage from the loop line onto the main line behind the train, with the expert guidance of Kesh Bahadur's flag. Gently, as the coach touched the train, Kesh Bahadur fastened the chain and the brake-pipe. Satisfied, the guard blew his whistle. They were now ready to leave!

Signal given, the visitors thanked their hosts at Dudwa and gratefully climbed upon the coach. Meanwhile, Mr. Chatterjee had brought lumps of salt for Maya, Mukti and Raju, which they gratefully licked from Emma's hands extended through the saloon window. As the MacLeods waved them goodbye, the three tuskers raised their trunks in royal salute to the visitors, blowing their 'regimental trumpets' all the way, for once drowning the deafening hoot of the Iron Horse.

Once the train gathered speed, Rakesh, an avid cricket fan asked, "So John, how's that?" Bursting into laughter, Emma and John together exclaimed, "Well Rakesh, we've just witnessed 'The Wonder that is India'...Jai Hind!"

Author is a 1978-batch IRAS, former Financial Commissioner (Railways) and ex-officio secretary to Govt. of India. Earlier, he was posted as Director General of National Academy of Indian Railways in Vadodara. He is now heading the Kolkata chapter of Rail Enthusiasts' Society.

To read more such unheard stories one have to read his several books which include Train to Darjeeling, Howrah Junction etc. All sketches used here were the artwork of author's better half Sudakshina Kundu Mookerjee.

Cover sketch artwork courtesy: Shri Mohit Sinha, DG/HR, Railway Board.

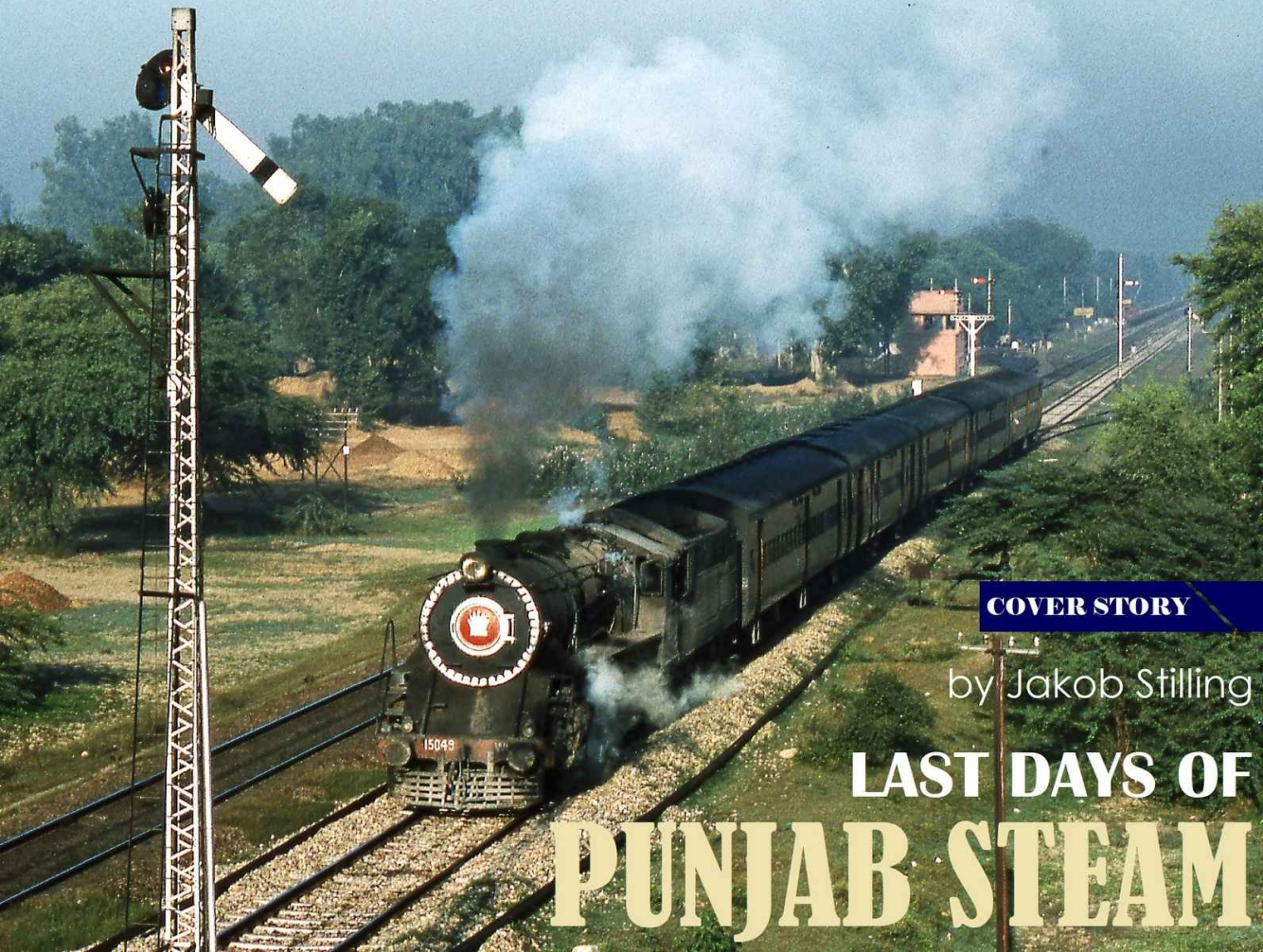
Part-I Two short days of chasing Steams around Jalandhar

Thirty years ago, in November 1993, I made my first visit to India. Having flown into Delhi on a Saturday morning, I and my companion Johs. Damsgaard instantly picked up our Indrail passes from the International Tourist Bureau at New Delhi station which opened at 7.30 hrs. on a Monday morning. Despite of the heavy paperwork involved in changing the voucher from the travel agency for the pass, we just managed to catch the diesel hauled 1027 Dadar Express at 08.00 hrs. which was running via Ambala and would get us to Jalandhar by 16.15 hrs.

In spite of having no reservations, the AC 2/1st class Indrail passes quickly produced seats for us in a 2AC carriage where we had an interesting chat with the Upper-Class Conductor and a Northern Railway entrepreneur in the catering business who kindly requisitioned a curry lunch for us from one of his ambulating vendors on the platform in Ambala hoping for an exchange in form of a wee dram of scotch. Our conductor also enjoyed a sip and after that a lengthy midday nap in his seat!

In those days, before the internet, planning a rail trip was complicated. There were a few magazines publishing accounts of travels and information from other enthusiasts,

especially "Continental Railway Journal" and "World Steam" but these magazines appeared only a few times a year and might not contain any information on a given country or area. Moreover, the information on steam locoes was most likely outdated as it would often be based on someone else's trip – some time before the issues appeared. We carried copies of issues which were 3 years back. Thus, unless you were lucky enough to know someone who had just visited, the planning made in advance could be futile, if timetables or use of traction had changed. Maps were hardly available then and often lacked precision or may not account for railway lines at all. On arrival, we made sure to buy the latest available issues of the regional timetable, Trains at a Glance and the Indian Bradshaw. We would spend hours checking the current timetable against the information already available thereby marking the trains that could be expected to be steam hauled. A full day travelling from Delhi to Jalandhar gave us ample opportunity to get our part of the paperwork updated. On the way, especially north of Ambala, our express overtook and crossed several steam hauled passenger trains, confirming that Punjab was still very much a steam country!



COVER STORY

by Jakob Stilling

LAST DAYS OF PUNJAB STEAM



In those days, Punjab was still affected by unrest and several local trains on the branch lines running after dark carried a special note in the Northern Railway timetable; *"trains temporarily cancelled or partially cancelled - likely to be reintroduced"*. Our info from the magazines suggested that these trains had been resumed already but were running with an armed escort. They did – Sikh soldiers with helmets and guns escorted the branch line trains, at least after dark and even patrolled the platforms in junctions. They very obviously not there to check the two western photographers!

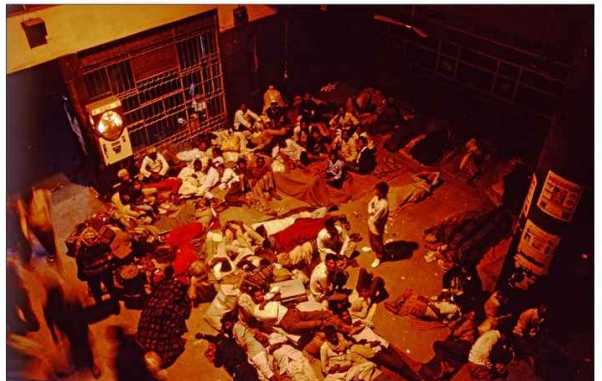
Jalandhar had been chosen as our first place of visit because the available information suggested that the WL light Pacifics based in Ludhiana, Firozpur and Jalandhar were still hauling most trains on the web of branch lines radiating from Jalandhar while some of the mainline stopping passenger trains were still WP hauled. Firozpur-Lohian Khas-Jalandhar City had 5 trains in each direction with the single express being a diesel hauled one. The branch from Jalandhar to Nakodar offered three trains a day (the evening trains still temporarily cancelled) while there were 4 trains on the Lohian Khas-Ludhiana branch, all steam hauled, and four on the Jalandhar-Phagwara-Jajion Doaba branch. Although the Jalandhar-Hoshiarpur line was also 100% steam worked (5 trains), we did for some reason not go there, but caught some of the trains departing from Jalandhar junction.

Before leaving home, we had applied for photo permits to be issued by Baroda House. My travelling companion, who would be spending two months in India, had been granted his and it had duly arrived while my permit only arrived long after I had returned. We were a little anxious if it would be a problem not having the official letter in both our names but in the end, everything worked out fine. Almost everywhere we went, a piece of paper issued by Railway Board worked miracles, even before being taken out of the envelope and would readily be acknowledged as a sufficient permit for both of us. In some sheds and stations, the Station Master or Shed Master would be absent and his assistants were so eager to get us off their hands that we were allowed to

wander freely without even showing the permit. The only place I remember giving us trouble was the shed in Ludhiana where photography was firmly disallowed, else, usually, no one really bothered. Wandering off the platforms would be a major problem back home while in India it was commonly acknowledged that the shortest way from A to B was across the tracks! So, who cares where a photographer has chosen to position himself at?

Being on a budget, on arrival, we opted for the retiring room in Jalandhar City Junction and applied for allocation of one immediately on arrival. The deluxe rooms were already taken, but two bunks in the 6-bed dormitory were available (at Rs. 50 for 24 hours) and we chain locked our rucksacks to the beds as instructed by the attendant guarding the door while making way for the platforms to get a few pictures before the sun went down. The retiring rooms situated on the second floor of the station building were guarded by the attendant in an elderly Sikh in khaki uniform and by a lady-sweeper who sat on the stairs making sure that no one without good reason could trespass.

Our studies of the timetables had shown that there would be three (likely) steam hauled departures to the south from 16.30 hrs. to 17.15 hrs. – a mainline and two branch line trains which were duly photographed in the fading light. A big cloud of coal smoke hang over the engine shed as proof of several engines being prepared for services later in the evening. Several light engines made their way to the platforms also for working westbound trains towards Lohian Khas and Firozpur. As we made our way back to the platforms we were approached by the Duty Information Clerk who had been looking for us, as the previous occupants of the AC deluxe retiring room had left, thus leaving a private room vacated for us at an extra charged of Rs. 75. We happily accepted and after some further paperwork we were transferred to a private room with dining table, two sofas, private facilities and a balcony overlooking the platforms. The woolen rugs and the doormat still proudly carried the letters NWR! Rather pleased with our progress, we had dinner in one of the hotels in town. We fell asleep to the sound of hissing and shunting steam locos, wagon brakes and the





cries from the platform vendors of "Chai-Chai-Chai", "Curry-curry" and "Bidhi-Bidhi" – all just in front our room while the less fortunate passengers spent the night in the waiting hall downstairs.

On Tuesday morning, we got up early, got a quick Chai from the station buffet and packed our gear for a morning trip to Lohian Khas. In the bay platform at the north end of the station, a WL was building up its fire to haul train 1JF, departing just before dawn at 06.55 hrs. The engine staff comprised 4 – the Sikh driver, an apprentice who had much trouble avoiding slipping, the fireman and a coal pusher, who never left the coal space in the tender. The driver invited us to travel on the engine as the sun rose and we steamed through the morning mists of the green and fertile Punjab. It was no problem to get off at stations and walk in front of the train. The driver would open the regulator, producing a bit of exhaust and then ease the regulator, allowing us to run back and climb aboard the engine. After a few stations, a hip bottle of whisky appeared from the rags in the tender with three steel cups to give three of us a welcome morning warmth.

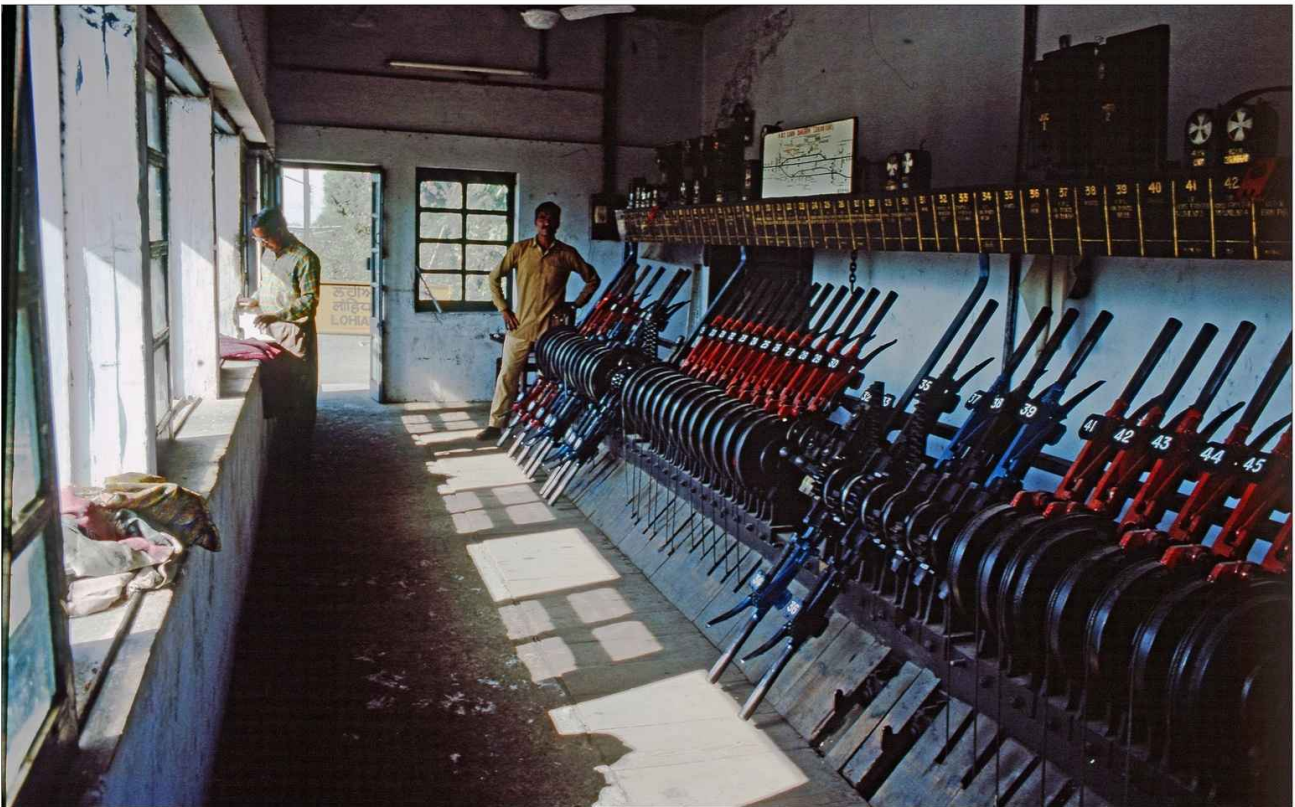


Our afternoon was spent in the shed area after some negotiation with the Shed Master on duty who was not very impressed with the permit, but ultimately obliged. The shed serviced about 40 steam locos per day but had apparently not its own allocation of engines at that time. A number of WPs and WLs from Firozpur and Ludhiana sheds were present which were coaled by the two resident steam cranes. After that, we photographed several trains under the large signal gantry just outside the shed walls and even tried out the north end of the station. Our 24 hours slot in the retiring room was exhausting, so we had to spend some time in further paperwork for ensuring our stay in the room for another night.

Our plans for Wednesday were to try to get a car with a driver for the day to chase some of the branch line trains. The line of ambassador drivers waiting for business in front of the station were not licensed to go beyond the city limits but one driver directed us to a minibus stand in town. So, early on Wednesday morning, we arranged for one-day hire of a minibus. An issue of Continental Railway Journal mentioned a trustworthy driver, who had been driving for









other photographers. Mr. Singh was indeed on hire when we arrived before dawn and confirmed with a smile that he had already tried the game of chasing steam trains. Thus, after securing our transport for the day, we hastily checked out of the retiring room with our bags and left Jalandhar for the Jaijon Doaba branch trains – all WL worked. Our first picture of the day was bagged in the form of 2RJ departing Jalandhar Cantt. at 08.00 hrs. Overtaking the train on the old Grand Trunk Road, our second picture was clicked around at 8.10 hrs. from the road bridge in the south end of Chiharu and then east of Phagwara Junction. Somewhere along the line, we missed a turn on the country roads and somehow the train eloped. As we were going south anyway, we decided to make our way to Phillaur for a picture of 4LL from Lohian Khas. However, the shed visit at Ludhiana which we had hoped for did not materialize – the shed was huge and a very smoky place, but no photography was allowed.

Our notes suggested that most trains on the line south of Ludhiana from Hisar could also be steam hauled. After some trouble finding our way on the small roads in the country, we



reached Jassowal (21 km. south of Ludhiana) in time for travelling from there on train 1 LJH which turned out to be WP hauled. Our friendly driver thus dropped us in Jassowal and returned to base while we continued by train towards Ambala thus ending up spending the night in the waiting room at Kalka.

One year later, we once more found ourselves chasing WLS in Mr. Singh's minibus. But that is another story with which I shall be back in the next issue....

All photographs provided by the author & subject to copyright.







Train to Itwari Junction

Ravindra Bhalerao

You travel from one part of a city to another using a private vehicle or should this not be at your disposal, making use of available public transport. This is the rule I have followed all along. And yet, it was my custom, years ago, whenever I had business of any kind in Itwari, to make the journey partly by rail. The short six-kilometre ride from Nagpur to Itwari was a pleasure I eagerly looked forward to, it was a wonderfully refreshing rail adventure. A train ride to Itwari was always welcome, it buoyed up my spirits.

If this sounds out of the ordinary, then it is well to remember that rail enthusiasts are indeed out of the ordinary folks. They are known to go great lengths to secure the joy and pleasure they find in their beloved trains. They assiduously pursue their interest, some immersed in unearthing the past, others making long arduous journeys in search of their elixir, each one adopting his own unique slant in his pursuit of railway pleasures. Unquestionably rail enthusiasts are a different breed of people altogether.

And so here I would find myself parking my vehicle at the Nagpur station scooter stand. From there my feet would unfailingly carry me to the desolate platform at the very end of the main station. Here solemnly stood the Nagpur-Ramtek

Passenger train, seven carriages of old ICF stock in maroon red livery, all vacant save a few passengers who seemed to be in no great hurry. The crowds would assail the train only at Itwari, I was told.

The Nagpur D Cabin is truly the hub of railway operation here, the ASM posted on duty is busy throughout taking line clear messages on his block instrument, then setting the points. At around 12 noon, he gave the signal to a loco from the Motibagh Diesel Shed, waiting patiently on the 'bahar line' for clearance. This power then slowly backed up to the station and was finally coupled to the waiting passenger train to Ramtek.

The engine gave its customary long hoot and we begin to glide out leisurely. My excitement knew no bounds. Once a train begins to move out, it kindles a new set of interests, you feel mentally buoyant as you leave behind the petty cares and concerns which make life a drudgery. We moved over a maze of tracks, then past the carriage repair shops, past the D Cabin and finally over the famed diamond crossing. The line is clear all the way upto Itwari. Having cleared the diamond, the train would take a circuitous route curving one way and then another, it would pass over the



The famous diamond crossing @Nagpur

Photo courtesy : Somsubhra Das



Old Itwari NG station

Photo courtesy : Somsubhra Das

narrow-gauge line that led to Chhindwara. We would now be passing through the thick of human settlement, the slums of Mominpura, Pachpaoli and Itwari through crowded level crossings, tiny homes with minuscule balconies, clothes hung up to dry in front yards of dwellings, women carrying on with their daily chores, children playing next to the track. The train had to honk ceaselessly to warn unsuspecting people from straying close to the railway.

Itwari forms the prime business district of the city of Nagpur. Here may be found nearly everything a man may conceive of buying. There are wholesale grain merchants and grocery dealers, there are shops selling everything from chinaware and perfumes to sports gear, sweets, garments and the newest bikes. Itwari is synonymous with business, trade and commerce. It is also a place known for its winding lanes, congested living areas and crowded streets. There is peace and quiet however on the railway station of Itwari, the noise and din of commerce is no longer to be heard here. Here could be found a steam engine back in those days labouring under the road overbridge with its load of wagons, shunting them back and forth in the yard. But even amidst the quiet of the station we have a whiff of commerce, for these wagons brought in merchandise arriving each day from Ajni on a night train called the S E Shuttle.

The Ajni goods yard operated two local goods services back then. The first of these was the Central Railway Shuttle which deposited wagons at the Nagpur station goods shed, whilst the other known by the name of S E Shuttle carried wagons for Itwari. Close to the goods shed of Itwari could be seen lorries lined up on a rough roadway and although I never did linger here for long, I had a fleeting glimpse of the meeting point of rail and road transport. Neither was sufficient in itself nor could do without the other, I knew. I would not be doing justice while on the subject of the S E Shuttle if I did not mention the name of the late Sant Singh. He was a kindly old gentleman whom I had befriended in the 90s. A steam driver on Central Railway, Sant Singh was nearing retirement and was put in charge of the S E Shuttle.

An old-time veteran, Sant Singh knew his WG as well as the back of his hand. He lived in the Ajni railway colony and his schedule required him to take charge of his loco at the Ajni shed in the dead of the night while the whole world lay in slumber.

Besides the Ramtek Passenger train, there were trains in those days from Nagpur bound for Tatanagar, Bilaspur and Chakradharpur, each of them calling on Itwari and this quite apart from several narrow-gauge services scuttling in and out of Nagpur like busy little mice at play. But times have changed since then. Narrow-gauge went off the rail map several years back and, in its place, has come up a fast broad-gauge train service to Chhindwara. Of late, Itwari station has been modified and enlarged, retiring rooms have been added, and the station now serves as the terminus for trains bound for Bilaspur, Tatanagar, Ramtek and Chhindwara. Electrification of the newly constructed routes has paved the way for greater economy in operation. There are about a dozen train services originating from Itwari each day and a diesel loco has been assigned to the station to take charge of shunting operations throughout the night and day. I was to make these astounding discoveries only last month when I decided to wander out towards Itwari in search of a fulfilling rail experience. Residing in an area that is close enough to Ajni, I made enquiries to ascertain if there was a train that would take me from Ajni all the way to Itwari. I was to make the pleasant discovery that there were indeed two, but no more than two such trains that met this exacting specification. We have the LTT Kurla Shalimar Express as also the Kolhapur Gondia Maharashtra Express halting at Ajni as well as Itwari, and both having long halts at Nagpur Junction on the way.

I chose to travel on the first mentioned train and for a mere sum of thirty rupees, I could take a ride in the general coach for the eight-kilometre run from Ajni to Itwari. Ah, the pleasure of pulling into a yard with a vendor in the carriage crying out "Santra, santra, santra... Nagpur santra, bees rupye...." (Nagpur oranges at twenty rupees....). We pulled



BG alignment over the NG tracks @ Nagpur outer

Photo courtesy : Somsubhra Das



Old Parallel BG-NG tracks @ Itwari Outer

Photo courtesy : Somsubhra Das

into Itwari nearly an hour behind schedule. The halt is all but for two minutes and soon the express honked and began to pull out. As I sauntered down the platform towards the main station, I had two overriding priorities on my mind. The water bottle I had carried along had quenched my thirst but now I was famished. I made my way to the main station building where to my great relief I found a vendor selling a variety of chips and freshly fried samosas. The latter costing ten rupees apiece and served up in paper bags proved to be excellent fare and with a few of these I was able to replenish my strength for the remainder of the afternoon.

Having fortified myself with a good meal, my next concern was to plan the trip back home. Auto rickshaws are easily hired, but it would be heavenly if there was a train that could take me back home. Thereupon, I made enquiries and found to my great delight that the return Shalimar express bound for Kurla had been delayed enroute that it would pull into Itwari within an hour's time from hence. A train running several hours behind schedule is the cause of great discontent amongst passengers; for me it spelled nothing less than good news. I was extremely fortunate that day and I lost

Itwari Timetable board

Photo courtesy: The author

मोदिवा, बिलासपुर, छिम्बवाड़ा, रामटेक, रीवा की ओर जाने वाली गाड़ियाँ Train towards Gondia, Bilaspur, Chhindwara, Ramtek, Rewa Directions						
Sr. No. क्र. संख्या	Train No. गाड़ी संख्या	From - To काहीं से काहीं तक	Days दिन	Arnl. आगमन	Dept. प्रस्थान	
1	18110	Itwari - Tata Exp. इतवारी - तटा एक्सप्रेस	Daily दैनिक	---	00.05	
2	08756	Itwari - Ramtek Pass Spl. इतवारी - रामटेक पैसंजर संकेत	Daily दैनिक	---	05.40	
3	12856	Itwari - Bilaspur Intercity Superfast इतवारी - बिलासपुर इंटरसिटी सुपरफास्ट	Daily दैनिक	---	06.15	
4	08268	Itwari - Raipur Pass Spl. इतवारी - रायपुर पैसंजर संकेत	Daily दैनिक	---	07.30	
5	08119	Itwari - Chhindwara Pass Spl. इतवारी - छिम्बवाड़ा पैसंजर संकेत	Daily दैनिक	---	07.45	
6	08281	Itwari - Tirodi Pass Spl. इतवारी - तीरुदी पैसंजर संकेत	Daily दैनिक	---	13.10	
7	18029	Kurla - Shalimar Exp. कुर्ला - शालीमार एक्सप्रेस	Daily दैनिक	13.40	13.42	
8	08744	Itwari - Gondia Pass Spl. इतवारी - गोंदिया पैसंजर संकेत	Daily दैनिक	---	15.00	
9	08265	Itwari - Chhindwara Pass Spl. इतवारी - छिम्बवाड़ा पैसंजर संकेत	Daily दैनिक	---	15.30	
10	11039	Kolhapur - Gondia Maharashtra Exp. कोल्हापुर - गोंदिया महाराष्ट्र एक्सप्रेस	Daily दैनिक	15.52	15.54	
11	11753	Itwari - Rewa Exp. इतवारी - रीवा एक्सप्रेस	TUE, THU, SUN मंगल, बुध, रविवार	---	18.30	
12	08754	Itwari - Ramtek Pass Spl. इतवारी - रामटेक पैसंजर संकेत	Daily दैनिक	---	19.10	
13	18240	Itwari - Bilaspur Shivanath exp. इतवारी - बिलासपुर शिवनाथ एक्सप्रेस	Daily दैनिक	---	23.55	

no time in purchasing a ticket back to my starting point. To Itwari by train, and back to Ajni again by train... what sheer luxury!

For those who are curious about the details, I will say that the Shalimar express had 24 old style ICF carriages in all, the first four being luggage vans, the fifth, sixth and last two coaches providing general unreserved accommodation. The train has no pantry car but bearers do appear as the train slows on the approach to the main station with their persistent and yet pleasing offerings of "Khana ka order lo... eggs curry, chicken, dal fry...." (We take order for food).

Itwari is no longer a transit station as it once was, it is the originating point for several trains and with the vast rise in rail traffic this move has eased the burden on the main station of operating an increasing number of trains. For the enthusiast keen on a rail journey for his own sake, a short train ride is much to be recommended for it allows one to savour the joy of railways without the fatigue that occurs during a long and extended run. Too much of a good thing often does one no good it is said, so it is best to keep the journey short and sweet. Time and again experience has shown this dictum to be true.

A train ride to Itwari is as pleasurable today, I find, as it was years ago. Passing through Itwari, I discovered that the narrow-gauge track, now disused, is still in place, buried at places under heaps of garbage. Nothing much has changed; the train still storms through a level crossing where motorists may be found waiting patiently for us to make way for them. And tiny colourful homes often with tiled roofs still line the track on either side where children may be found playing and womenfolk are seated on doorsteps in groups. There is a wall separating human habitation from the railway now. But who knows when someone may sneak in towards the line through a break in the wall, perhaps a lad who wants to fetch his ball or a lady whose scarf has been blown away by the wind. The train is seemingly aware of this - it still honks ceaselessly as it winds its way cautiously through Itwari....



शिकारा
SHIKARA
स.त.से.ओ.के. H.A.N.S.L.-444-94 मी.

A Railway Picnic at Shikara

Kartic Chauhan

South Eastern Railway (SER), later South East Central Railway (SECR), had an extensive Narrow Gauge (NG) network in Maharashtra and Madhya Pradesh. The line extended from Nagpur to Gondia, Mandla Fort and onwards to Jabalpur. This line was initially built to ferry the forest produce, mainly timber, to the market in the British era, but later became the life line for a very regressive and backward region. This is basically the Kanha Tiger Reserve territory!

It was only by chance that I got hold of this beautiful route. In 1998, I happened to be the Heritage Officer for the fledgling WCR zone. I was told that there was a lot of old equipment lying around in Nainpur and I decided to check it out. While we did not find anything of significance, I found out that the Officer's Rest House (ORH) at Nainpur is a wonderful and a visit to Nainpur is worth just only to see it and perhaps spend an evening there. The wonderful interiors of the ORH along with the lovely floor tiles made memory of the ORH to stay with me forever.

An erstwhile SER Mechanical Officer was accompanying me and he was raving about the beautiful route. It indeed was

with forests, rivers, valleys and the occasional wildlife – what more do you want! He also told me about the old ORH from English times at Shikara – a station enroute, just a couple of hours away from Jabalpur, next to a quaint little river by the same name. Shikara, as the name suggests, was a place for shikar or hunting in English. I decided to give it a visit as soon as I could and the officer planned the itinerary which soon became the template for what I reckon was the 'Railway Picnic'.

We would go on the morning train around 8 am from Jabalpur to Binaiki which was enroute Nainpur. Since First Class was not available in most trains, we got an NG RA (Saloon) attached to the train. The resident doctor or the AEN posted at Howabagh, the terminal station of the SER at Jabalpur would be requested to book the RA and accompany us. This was done a good number of days in advance as the RA had to come from Nagpur.

We would drop off some help at Shikara, one stop before Nainpur, so that the breakfast could be prepared by the time we came back to Shikara. After the uphill and slow train ride,







we would disembark from the RA at Binaiki and the RA would proceed to Nainpur, no shunting and delay to the train! After the inspection/doctor taking care of patients, we would get on the push trolleys and come back to Shikara, which was mostly downhill, through the breath-taking beauty of the Satpura hills and dense forests – an absolutely enchanting experience. The trolley ride was almost akin to a roller coaster ride. The clickety click of the wheels going over the tracks was the only sound for miles. We would observe nature at her best!

The snacks would be ready by the time we reached Shikara, and no time was wasted to devour them. Then we would proceed to enjoy the natural beauty of the place by climbing a few hills and going to a stop dam where we could see fishermen catching fish. By this time, the food would be cooked over a wood fire – the wood being in the form of old sleepers. Country chicken, local tiny fish, which we bought from the fishermen if we got lucky, along with daal and bharta etc. were on the menu. The station had a stall selling Alu Bondas (akin to the vada of Vada pau) and sweet pedas and no visit would be complete without letting your

tastebuds enjoying these. It was said that the fellow would offer these to the loco pilots and guards for free so that they would stop the train long enough to allow the passengers to buy and savour the goodies!

In the afternoon the RA would be back at Shikara around 3 pm on a different train from Nainpur and we would board it to get back to Jabalpur by 5 pm while enjoying the smoky tea made over the wood fire enroute to prolong the joy of the magical day.

I did this journey several times and especially if we had guests over. Evert one thoroughly enjoyed, no matter where all they had been in the world! We did this for the last time a couple of days before the last run of the NG train before the gauge conversion work commenced. Alas! Now it is neither so scenic as the straightened Broad-Gauge track is quite boring to say the least. It was a wonderful Railway Picnic filled with fond memories.

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Cover photo courtesy: Subhadyouti Bose*





Nilgiri Mountain Railway

The Story of its Heritage

Om Prakash Narayan

Indian Railways is the proud owner of three UNESCO accorded Mountain Railway World Heritage Sites namely Darjeeling Himalayan Railway (1999), Nilgiri Mountain Railway (2005) and Kalka Shimla Railway (2008) This is just the behind-the-scenes story of how the Heritage Listing of Nilgiri Mountain Railway (NMR) was brought about.

Brief History and Background of Nilgiri Mountain Railway

Nilgiri mountain Railway is among the oldest and steepest Rack and adhesion technology of the world dating back to 1899 when it was first commissioned. The Rack and pinion system of operation in NMR is the only one in Asia and is unique in the world. Its gradient of 1 in 12.28 between Mettupalayam and Coonoor is the steepest in Asia. The 46 km long line between Mettupalayam situated at the foothills at a height of 1069 feet, the section has 208 curves, 16 tunnels and 250 bridges before reaching Ooty, also known as Udagamandalam situated at a height of about 7,228 feet. Serving the "Queen of hill stations" the railway line is unique in its position as a heritage symbol of the Nilgiris. The mountain Railway passes through the stations of Kallar, Adderly, Hillgrove, Runneymede, Kateri Road, Coonoor, Wellington, Aravankadu, Ketti, and Lovedale. NMR has been featured in many popular Indian and Foreign movies. NMR was part of Palghat Division till 2008 when it became part of the newly created Salem Division of Southern Railway.

After taking over as the first PRO of Palghat Division in 2000, I never missed a chance to visit the great heritage site of Nilgiri Mountain Railway whenever I got the opportunity - as it was in Kotagiri, part of Nilgiris, that my parents got married on 14th November, 1948. My mother's maternal uncle, Mr Cunniah, was the Municipal Commissioner of

Coonoor then. So it was with a little bit of pride and personal attachment that I said "Yes" to my then DRM Mr. SK Sharma, when he asked me to draft the application to UNESCO for listing the NMR as a world Heritage Site in 2003. I knew it was an onerous task, one that would be demanding as well as a pride.

Palghat Division had sent applications a few times earlier and for some reason or the other it had not been accepted. Mr. SK Sharma, an IRSEE officer, was very keen that the NMR gets the prestigious World Heritage Tag during his tenure as DRM. So, when he called me and directed me to draft the application, I requested him to relieve me of PR duties for at least 45 days – if I were to finish drafting the application and he magnanimously agreed. That it finally took more than 3 months is another story.

First, I acquainted myself with the requirements of the World Heritage site by visiting the Unesco WebSite at whc.unesco.org and learning all about how to draft the application. This included mapping of the entire 45.88 km property, including marking buffer zones along the track and making out a property management plan and calling a meeting of stakeholders to discuss the cultural values of the Heritage line.

To achieve all this, the DRM set up a Heritage Committee of Palghat Division headed by the Divisional Railway Manager, who was the President of the Heritage Committee (Mr. SK Sharma), the Addl. Divisional Railway Manager being the Vice President of the committee (there were two ADRMs at that time who were Vice Presidents of the Heritage Committee – Mr. Titus P. Koshy followed by Mr. Sivanandam), the Senior Divisional Engineer Coordination, the Senior Divisional Commercial Manager being executive committee members (Mr. Latief Khan and Mr. Rajagopal respectively) and the Public Relations Officer (myself) being the Secretary of the Committee.

Even though the Heritage Committee did other work like listing the Heritage items and setting up the Heritage Room in the Divisional Office, the main focus was to draft the application for NMR.

The then Sr. Divisional Engineer/Central Mr. P.V. Reddy and the then Divisional Engineer/Central Mr. Ramesh Kambli provided full support by enlisting all the Engineering Personnel for the work and mapping out the entire 45.88 km with parameters like identifying buffer zones along the entire 46 km track as required by the UNESCO in a span of less than 3 months.

The entire section had to be documented visually, and I along with the then Senior Photographer Sri B. Gopinath, walked/trekked all the way from Mettupalayam to Coonor and then from Coonor to Ooty, a total of 45 kms to Photo Document the entire stretch. The Engineering dept was kind enough to provide trolleys for our trip back from Ooty to Mettupalayam. Some of the pictures of NMR that still adorns many a wall in Railway Board and offices elsewhere are the ones taken by Sri Gopinath and myself in 2003.

We had a meeting of important stakeholders of the area, as per the norms of UNESCO, and it was an eye opener as many a stakeholder held much more interest in the history and development of Nilgiri Mountain Railway. Leaders and politicians rose above party lines to support the noble



Rack & pinion system tracks

Photo courtesy: Somsubhra Das

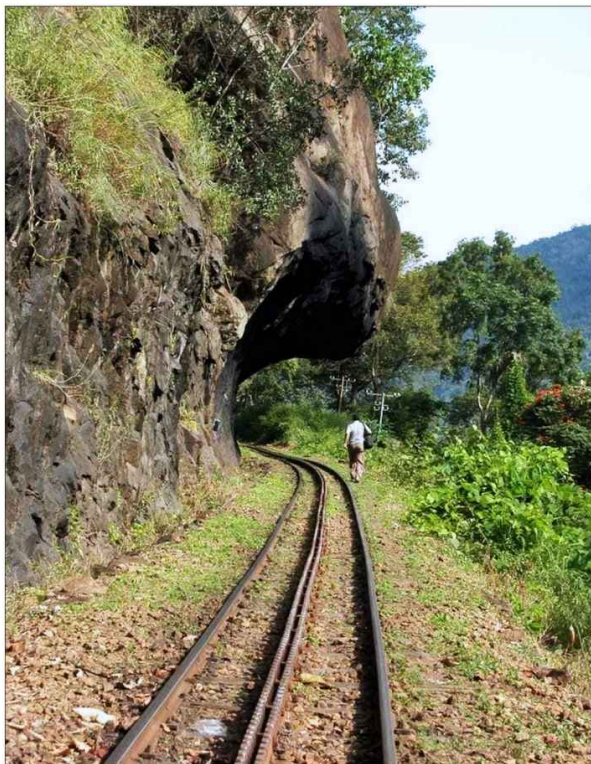
venture of applying for the World Heritage Status for NMR. The Press and the Media gave due publicity to the process and the idea sprouted among the general public of Nilgiri Mountains that their Railway line was about to be recognized as a world heritage structure.

Even today, many of the stakeholders have an active interest in the running of the railway and any deviation or happening or event that attracts negative publicity is keenly watched. Some of the stakeholders like the then VRR contractor Mr. Natarajan, became popular with their knowledge about the heritage line. In fact, it was he who revealed to the Railway Officials that the ashes of the Father of the Nation, Mahatma Gandhi, was immersed in the Kateri brook in Runneymede in 1948.

The District Collector, the Police and Forest Officials, other stake holders like Mr. Venugopal, who runs an NGO associated with the Tribal welfare, key persons from the Tribal communities of Todas, Badagas, Irulas, Government Officials, Elected representatives, Press and media persons – all became stakeholders of Nilgiri Mountain Railway by their interest and by their endeavours. Press and Media persons

Inspection team were about to leave on the trolley from Ooty. Author was there in the middle.





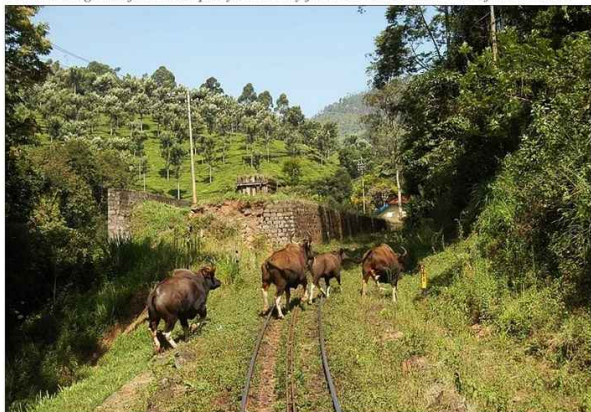
Half cave

from Mettupalayam, Coonoor, Ooty and other adjoining areas became a motivating force behind the venture of applying for the World Heritage Status of NMR.

By the end of three months, the entire documentation of the Nilgiri Mountain Railway was done and it was a huge 400+ page document including the property management plan that was prepared in triplicate. And finally, it was sent to the Railway Board for onward submission to UNESCO.

Sometime in July 2004, a letter arrived from UNESCO that a two member team from ICOMOS (International Council on

Taken during Trek from mettupalayam to Ooty for the documentation work for UNESCO



The icomos team with Souther Railway officials in 2004 (author standing third from right)

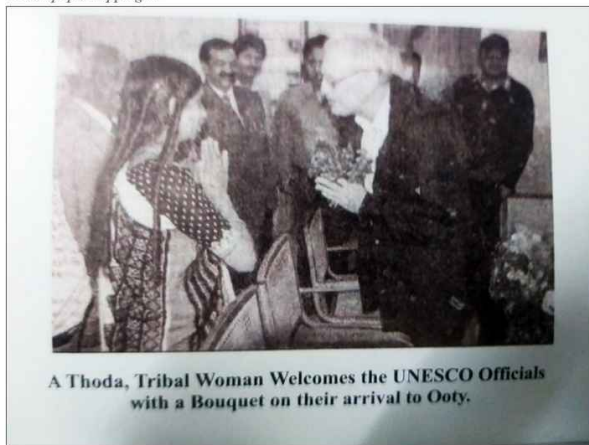
Monuments and Sites) would visit the Nilgiri Mountain Railway and submit the report. Based on their report, UNESCO will decide on giving World Heritage Status to NMR.

Palghat Division readied itself to welcome the two-member team from ICOMOS. Dr. Robert Lee and Mr. Ian Wright came to visit the Nilgiri Mountain Railway for 3 days from 27th to 30th September, 2004. They were not only shown around the Nilgiri Mountain Railway, but also shown around the Tribal Museum and were made to meet the Toda, Badaga, Irula and other Tribal Communities as the local people had helped build the Nilgiri Mountain Railway.

There is a famous photograph of a British Engineer leaning against a material engine on the newly built Bridge No. 25 between Mettupalayam and Coonoor, with the local tribal people around. In fact, the Todas had a beautiful song about the Snake on the hills – a song about the Ooty Train. Even though the Toda song was nearly a century old, it was translated and sung for the ICOMOS Team by Ms. Vasamalli, the first graduate of the Toda Tribe during the visit of the ICOMOS team during September 2004.

The ICOMOS team was also taken to the various forest reserves and parks of the Nilgiri Mountain Range so as to establish the authenticity of its rich cultural and natural

A newspaper clipping....



A Thoda, Tribal Woman Welcomes the UNESCO Officials with a Bouquet on their arrival to Ooty.



The unique derailing point in Ooty station...

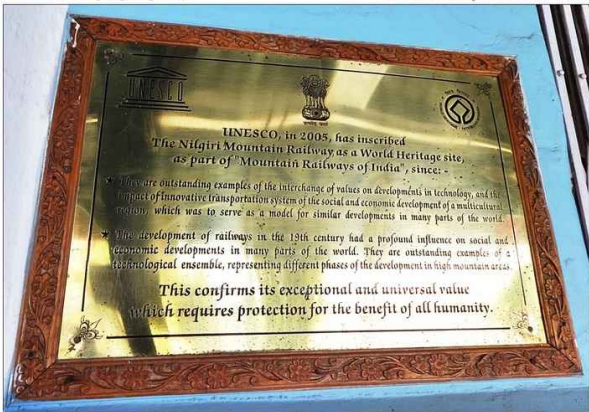
heritage.

After the ICOMOS team submitted their report, UNESCO declared Nilgiri Mountain Railway as a World Heritage site and listed it in 2005. On 20th November 2005, the then Union Minister for Railways Mr. R Velu, unveiled the plaque dedicating the Nilgiri Mountain Railway to the Nation as a WORLD HERITAGE SITE in the presence of a large number of distinguished guests and Railway Officials.

In its Criterion, UNESCO had mentioned thus: "The development of railways in the 19th century had a profound influence on social and economic developments in many parts of the world. The Mountain Railways of India are outstanding examples of a technological ensemble, representing different phases of the development in high mountain areas. The Mountain Railways of India are outstanding examples of how access has been provided to the plains and plateaus of the Indian mountains. They are emblematic of the technical and material efforts of human societies of this period to disenclave mountain populations through the railway. They are well-maintained and fully operational living lines. They are used in a spirit and for purposes that are the same as those at its their inception."

The UNESCO plaque @ Ooty

Photo courtesy: Somsubhra Das



While coming back down hill from inspection, a trolley was used most of the time.

After the UNESCO declared Nilgiri Mountain Railway as a World Heritage Site, the status of NMR has undergone a change. The Queen of Hill Stations, as Nilgiris is often called, finally, has its World Heritage Status through the historic Nilgiri Mountain Railway.

(Mr. Om Prakash Narayan is working as the Sr Public Relations Officer, Southern Railway, Chennai, and the views expressed here are his own. He blogs at <http://omsmusings.wordpress.com>)

All the images provided by the author unless mentioned otherwise.

Cover photo courtesy: Somsubhra Das

The recognition....

Photo courtesy: Somsubhra Das





INDIA

THE NATION WITH GROWING METRO SYSTEMS

Part-III : The Southern Marvels of the Nation

Anamitra Bose

Following the success of Kolkata and subsequent Delhi metro, the three bustling cities of South gradually felt the need of a robust and comfortable means of public transport. The three jewels of the South India, namely Tamil Nadu, Kerala and Karnataka have distinct cultures of their own which are deep rooted inside her dwellers which gets reflected in the urban masses too. The mass rapid transit in the three different cities of Chennai, Bangalore and Kochi have three different purposes and different level of expectations from the stakeholders. This part of the country being a huge contributor towards the nation's GDP deserved a modern rapid transit system right from the word go. Chennai and Bangalore already had a very robust bus system operated by the state-owned corporations in place but the anticipation of its oversaturation in its near future

due to the rapid growth of both the cities in all the aspects demanded the foundation of a metro railway system. On the other hand, Kochi needed a reliable system to connect the different business centers with the water transport. In this issue of the ongoing series, we are going down south for taking a look into the ultra-modern metro systems of Chennai, Kochi and Bengaluru.

:: CHENNAI METRO ::

Chennai is the Gateway of South India and is one of the major metropolises which also happens to be the sixth populous city of the country. Earlier known as Madras, it served as the center of administration, business, trade and culture during the British Raj as the entire colonial province of Madras presidency had its center here. After

independence, the city grew as one of the most industrious locations of the country as many automobile sectors grew up along with the textile industry. The South Indian Railway, during the pre-independence days, started the suburban railway services from Madras Beach to Tambaram on 11 May, 1931. After independence, various software, hardware and fintech centers came up gradually. The BG (Broad Gauge) conversion of the suburban lines along with opening of new lines of Sularpetta in north, Chengalpattu in south and Jolarpettai in west just about managed to cope up with the rising demand of the passengers of the blooming city. As new SEZs kept coming up in various corners of the city, especially in the southern parts of the city, the state and central government had to resort to designing a mass rapid system for the city to supplement the suburban railway system operated by the Southern Railway.

MRTS :

The Planning Commission and Metropolitan Transportation Project jointly set up the Madras Area Transportation Study Unit (MATSU) which submitted its detailed reports in 1975. Government started planning in 1980s to set up a new railway line through the city following the Buckingham Canal alignment. The new line was to be operated under Metropolitan Rapid Transport System (MRTS) project. The plan was to build up a 59.38 km long circular railway passing through Chennai Beach and Tiruvottiyur.

Metropolitan Transportation Project decided to execute the MRTS in various phases –

- 1) Chennai Beach - Tirumallai
- 2) Tirumallai - St. Thomas Mount
- 3) St. Thomas Mount - Vilivakkam
- 4) Vilivakkam - Ennore
- 5) Perungudi - Kalpakkam

Construction finally begun on 1991 for the first phase and in 1995, the first elevated railway corridor from Beach to

Photo courtesy: Arkopal Sarkar



Photo courtesy: Arkopal Sarkar

Chepauk was thrown open for public. In 1997, the MRTS service got extended upto Thirumayilai in Mylapore as it completed the first phase of construction. On 19th November 2007, the extended part of second phase upto Velacherry was opened for commercial operations.

Works are currently undergoing for the final connection upto St. Thomas Mount where it has interchange with the south suburban line and the Chennai Metro. But at present all other extensions of MRTS have been dropped as Chennai Metro is set to reach crescendo as it has the priority to operate on the same alignment to Vilivakkam and Ennore on different lines. In future, plans are in place as MRTS will be fully integrated with Chennai Metro and AC Metro rakes will run in the elevated corridor instead of EMUs operated by the Southern Railway. The maintenance and operations of the 18 MRTS stations will also be transferred to CMRL (Chennai Metro Rail Limited).

Chennai Metro routes :

In 2007, DMRC headed by Mr. E. Sreedharan conducted a survey and submit a DPR on Chennai Metro Rail Project. The DPR consisted of 7 lines covering the city. In November 2007, special purpose vehicle CMRL was set up to construct, operate and maintain the metro system in Chennai. The Phase-1 was approved by the Planning Commission which consisted of 40 kms out of which 30 km was underground section. The Line 1 (Blue Line) was to be constructed from Washermanpet to Chennai International Airport and Line 2 (Green Line) from Chennai Central to St. Thomas Mount.

In June 2009, metro construction work officially started with piling works between Koyembadu and Ashok Nagar stations. In 2011, Koyembadu depot work was started by LnT constructions. For underground metro works, the first Tunnel Boring Machine was launched in January 2012. Meanwhile, the proposal of extension of Blue Line from Washermanpet to Wimco Nagar Depot was also approved.

On 29th June 2015, Chennai Metro started its commercial operations between Alandur to Koyembadu. In September



Photo courtesy: Arkopal Sarkar

2016, the stretch between Chennai Airport to Little Mount was opened by the then Chief Minister J. Jayalalithaa. In 2019, the remaining part from AG-DMS to Washermanpet was inaugurated thereby completing the 50 km long Phase-1 of Chennai Metro. In 2021, The Hon'ble Prime Minister inaugurated the Wimco Nagar extension. At present the Chennai Metro is operating on the following lines –

Line 1 (Blue Line) – Wimco Nagar Depot to Chennai International airport : 40 stations

Line 2 (Green Line) - Chennai Central to St. Thomas Mount : 30 stations.

In 2017, the Phase-2 of Chennai Metro was approved by the State Government consisting of 180 stations with a route length of 180 km. The principal aim is to connect the northern part of the city with the southern part (mainly having the IT parks and SEZs) and eastern part with western part of Chennai. The proposed corridors include the following routes –

Line 3 (Purple Line) - Madhavram Milk Colony to Siruseri SIPCOT 2 with route length of 45.8 km

Line 4 (Orange Line) - Poonamallee Bypass to Lighthouse with route length of 26.1 km

Line 5 (Red Line) - Madhavram Milk Colony to Sholiganallur with route length of 47 km

Apart from this, CMRL will also take over the MRTS operations from Southern Railway in a gradual manner.

Rakes :

The rakes of Chennai Metro are supplied by Alstom – the multinational rolling stock manufacturer from France. These rakes are based on their global standard 'Metropolis' model. The rakes run on Standard Gauge (1435 mm) tracks and use 25KV AC OHE traction supply. In 2010, Alstom was awarded the contract to supply 42 four-coach trainsets for the Phase-1 of Chennai Metro. Out of 42 rakes, the first nine were imported from Alstom's Brazil plant. For manufacturing, test and supply of metro rakes, Alstom had set up a

production facility in Sri City, Andhra Pradesh where the rest of the rakes were manufactured.

Upon extension of the Blue Line upto Wimco Nagar, a further 10 rakes were ordered thereby increasing the total count for rakes supplied to 52 and 208 metro coaches. The Metropolis rakes are ultra-modern in all aspects and powered by an IGBT-based 3-phase AC propulsion system. Each stainless-steel lightweight rake measures 44m in length and can accommodate 1200 passengers at a time. The rakes are provided with Automatic Train Operation (ATO) and Automatic Train Protection (ATP) system.

The 4-coach rakes are arranged in DMC-TC-TC-DMC configuration where DMC stands for Driving Motor Car and TC for Trailer Car. The power of each traction motor is rated at 275 kW and the total power generated by each rake is $275\text{kW} \times 8 = 2200 \text{ kW}$. The maximum tractive effort is 250 kN which enables the rake to accelerate at an impressive rate of 0.82 m/s^2 . The net braking effort is rated at 380kN. For braking purposes, the rakes use three types of braking –

- Service brake : In normal operation, Service braking or electro pneumatic brake is applied either through Traction Brake Controller (TBC) or ATO. The system uses blending of Electrical Regenerative braking and Friction air brakes with preference given to Electro Regenerative braking for saving much of the consumed power
- Emergency brake
- Parking brake

The rakes are controlled from the driving cab through an ethernet-based system called Train Control and Monitoring System (TCMS). The Driver Display Unit of TCMS display the status of rolling stock viz., Voltage at transformer, Speed, current drawn, status of traction converter, auxiliary converters, braking systems, doors, switches, air-conditioning, traction and braking percentage, doors etc. The rakes use conical rubber springs as primary suspension and air springs as secondary suspension for a comfortable ride

Photo courtesy: Somsuhra Das



experience.

The passenger facilities include CCTV monitoring, emergency TalkBack, electronic station display boards. The rakes used to have one first-class coach with cushioned seating facility at a much higher fare which later got converted to Women-Only coach.

Signalling :

Chennai Metro Phase-1 uses Cab Signalling system supplied by Siemens. For Phase-2, CMRL will use Communication based Train Control (CBTC) signalling supplied by Hitachi STS which will support GoA-4 level of automation, i.e., Unattended Train Operation.

:: KOCHI METRO ::

Held by many experts as the most modern metro systems of India, Kochi Metro is certainly one of the most interesting metro systems. Kochi, the largest city of Kerala felt the need of a rapid transit system to cope up with the ever-increasing pressure on road transport in the early 2000s. Accordingly, DMRC submitted a DPR on Metro system in Kochi in 2008. But due to a hesitant Central Government on account of economic feasibility, the project got shelved for the time being. Later in 2010, when the project was taken up for consideration the differences between State and Central Governments on operational point of view delayed it further. Later, the Kerala Government decided to adopt the style of Design Operate Transfer basis of Delhi and Chennai Metro instead of public operation system proposed. In 2012, the Planning Commission cleared the project and a special purpose vehicle, Kochi Metro Railway Limited (KMRL) was set up.

KMRL held DMRC as their principal consulting agency with E. Sreedharan as the main advisor. DMRC was also the body to design, construct and transfer the whole project work in behalf of KMRL. Though some controversies arose regarding the role of DMRC, the State Government and the KMRL expressed their interest to award the project work to DMRC.

Photo courtesy: Anamitra Bose



Photo courtesy: Anamitra Bose

The Phase -1 of Kochi Metro consisted of 25 km section of Aluva to Pettah initially which then got approval for extension to Tripinithura station making the stretch 26.4 km. The metro now runs from Aluva to S.N. Junction I.

The Phase-2 is planned of 11.2 km line from Jawaharlal Nehru stadium to Infopark via Kakkanad.

The Phase-3 is proposed from Aluva to Cochin Airport.

Kochi metro is unique in many ways in the entire country where a bunch of metro railways are being constructed starting from beautiful station structures to only water-cum-road interchange point of the country.

• Station Architecture and Interior Design :

The Kochi Metro adopted contemporary design blended with Kerala's socio-economic culture in the architecture of their stations. Though the ancient 'Nalukettu' theme was not implemented due to infeasibility, Kerala's natural beauty is a common theme in all the stations' exteriors and interiors. The exterior architecture, roof and flooring was done by Egis India. The design of the stations was prepared by Indian Institute of Architecture (Kochi Chapter) and submitted to KMRL in 2014. The exteriors of the stations are not exact replica of Kerala style of architecture but they reflect a regional theme. All the 22 stations have a common theme of Western Ghats, the natural border between Kerala and Tamil Nadu.

The design of each station has independent variation to the common theme. The stations and the theme variation are based on the following –

- Aluva - Kerala's natural beauty and walls reflect Periyar river and other major rivers
- Pulinchodu - Flora and fauna of Western Ghats
- Kalamassery - Rare species found in the mountain ranges
- CUSAT - Kerala's maritime history
- Pathadipalam - Fish of the Western Ghats
- Edapally - Spices of Kerala



Photo courtesy: Anamitra Bose

Changam Puzha Park - Cultural and Artistic history of Kerala

Palarivattom - Images of the flowers of Western Ghats

Jawaharlal Nehru stadium - Heritage of sports in Kerala

Kaloor - Monsoon in Kerala

MG Road - Endangered species of hills

Maharaja's College - History and Trade routes of Kochi

• **Common interchange between metro, water and road transport :**

Vytilla hub serves as a hub for long-distance buses where a boat jetty is also coming up at Vytilla. Centre for Public Policy Research (CPPR) advised KMRL to shift Vytilla station to Vytilla mobility hub. As a result, Vytilla is now a common node between metro, bus and boat modes of transportation.

• **Metro rakes named after rivers :**

The Kochi Metro rakes are named after major rivers of the country, which gives a unique nomenclature among the rakes apart from the regular coach number. Rakes are named as Ganga, Sabarmati, Cauvery etc.

• **Unique notification tune at stations :**

Instead of regular chimes, KMRL decided to play a three-second notification tune at the stations to denote opening and closing of doors etc., to give a Malayali flavour to the stations and reflect the rich culture of Kerala. The tune is composed by Bijibal and it features traditional tunes of Kerala like *Chenda* and *Ilathalam*.

• **Skywalks to shopping mall :**

The Edappally station has a skywalk to nearby much acclaimed Lulu Mall where a passenger can directly have the entry to the mall from station concourse. Also, MG Road station has a skywalk to Chennai skills.

Kochi Metro rakes :

Initially it was decided to import Maglev trains from South Korea for the metro. But later it was decided to run 3-coach

long trains with width as 2.90m. DMRC proposed the width of trains to be 2.7m but KMRL wanted the width to be of a medium metro one, instead of a light metro. After retendering for width modification, the global tender was awarded to France based M/s. Alstom. Alstom was to supply 25 trainsets of 3-coach each and 25 rakes later to make each rake a 6-coach one. Kochi Metro uses Standard Gauge (1435mm) as track standard and 750V DC third rail supply as traction supply to the trains, instead of OHE as proposed by DMRC.

Alstom supplied their global standard 'Metropolis' rakes which was again designed in a way to reflect the rich natural beauty of Kerala. The physiognomy of the metro rakes was based upon 'Nettipattam' on an elephant tusk with the eyes resembling headlights that light up when the train is in dark. The rakes are arranged in DMC-TC-DMC configuration. The rakes are powered by an IGBT-based 3 phase AC propulsion system and use electro-pneumatic braking to regenerate electricity and save power. The passenger amenities include a strong air-conditioning system, USB charging point, bright LED lighting and emergency TalkBack systems. For suspension and smooth ride, the rakes use conical rubber springs as primary suspension and air springs as secondary suspension system.

Signalling :

Among many firsts, Kochi Metro is the first system of the country to use Communication Based Train Control signalling system. These enable the trains to operate at a headway of as low as 90 seconds. In this system, there is no concept of fixed signaling block system, rather the signal block is moving along with the train, allowing much lesser gaps between each train. Also, CBTC signalling system helps to achieve GoA-4 Automation level of train operation which is fully Unattended Train Operation (UTO), if needed. All these train operations and seamless movements are monitored from the Operational Control Centre (OCC) at Muttom.

Photo courtesy: Anamitra Bose



:: BENGALURU METRO ::

During 2010s, if any city which was embroiled with traffic snarls and demanded immediate solutions, it was Bengaluru or Bangalore. Otherwise known as the Silicon Valley of India, the capital city of Karnataka contributed much of India's GDP and have the Indian offices of most product-based companies and software giants. Apart from that, many Government PSUs and startups have also made Bengaluru a city of dreams for the young population. For such a city, a suburban railway system feeding different parts of the city and its outskirts was a dire need of the earlier decade. But the proposal of a suburban network got shelved for reasons best known to the concerned authorities. As a result, even after having an excellent network of bus transportation by KSRTC, traffic congestions rapidly began to choke the city which called for an immediate efficient and reliable mass rapid transit system. The time and energy spent during traffics at Bengaluru was perhaps the highest in the country.

Going back in time, in a study requested by the Government of Karnataka, the then Southern Railway conducted a detailed study on rapid transit in Bengaluru in 1981. They put forward a plan of 80 km. long metro railway along with circular railway. The government set up a body named Bengaluru Mass Rapid Transit Limited (BMRTL) to develop the project into next stage. A private consortium led by United Breweries Group was assigned the work, but the project did not work. Following the success of DMRC, the State Government asked them to prepare a DPR for Bengaluru and they recommended a 2-corridor metro system, East-West (Purple Line) and North-South (Green Line) crisscrossing at Bengaluru City junction. A special purpose vehicle called Bengaluru Metro Railway Corporation Limited (BMRCL) was established.

The DPR suggested a 33 km. long network with 32 stations in 2 lines following standard gauge (1435 mm) track. Project was approved by the Union cabinet on 2006 and the then Hon'ble Prime Minister Dr. Manmohan Singh laid the foundation stone on 24th June, 2006. Civil construction

Photo courtesy: Arkopal Sarkar



Photo courtesy: Arkopal Sarkar

started on 15th April, 2007 with the Purple line. Later, a few northern and southern extensions got approved in 2008 making the Phase-1 length as 42.3 km in total. Following the significant progress of BMRCL in Phase-1, the Karnataka Government recommended for preparation of DPR for Phase-2 in January 2011 and the Union Cabinet formally announced planning of Phase-2 in January 2014. The Phase-2 included extension of the Purple and Green lines along with starting of Yellow and Pink Lines. BMRCL prepared a DPR on the Outer Ring Road metro and its extension to Airport in 2016 as Phase-2A and Phase-2B respectively which was subsequently cleared by the Union Cabinet thereby renaming it as the Blue Line.

Purple Line :

This 39.3 km. line extends from Whitefield in east to Kengeri in west with a stretch between Byappanahalli to KR Puram left to be opened soon. This stretch has 35 stations (5 underground, one at grade and 29 elevated). This line connects the IT hub and SEZs of Whitefield to the residential areas and commercial hubs of west Bengaluru. Under the final phase of Phase-2, the western point will be extended from Kengeri to Challaghatta. The underground 4.8 km section stretches from Cubbon Park to KSR Bengaluru station.

Green Line :

The 30 km long North-South line extends from Nagasandra in north-west to Silk Institute in south-west, having 30 stations. It has elevated sections on both sides and 4 km underground section in middle at the city center. It connects commercial hubs of Peenya and Yesvantpur to catchment residential areas down in south Bangalore. Purple and Green lines have interchange at Kempe Gowda Majestic Underground station. Under Phase-2, the 3.8 km extension to Madavara from Nagasandra is left to be open.

Yellow Line :

This line construction was taken up in Phase-2, connecting



Photo courtesy: Aritra Bag

Rashtriya Vidyalaya Road to Bommasandra. This line would span 19 km in length and have 16 stations.

Pink Line :

The 21 km under-construction line would connect Kaleena Agrahara to Nagawara and have 17 stations.

Blue Line :

This strategic line would be built in two phases. In Phase-2A, it would connect Central Silk Board to KR Puram covering the Outer Ring Road and during Phase-2B, the metro connectivity will be extended to the Airport from KR Puram. This line would span around 56 km. in length and will have 30 stations.

In the underground sections, tunnels were bored using Tunnel Boring Machines named as Helen, Margarita, Kaveri, Krishan and Godavari.

Rakes :

BEML-Rotem-Mitsubishi consortium supplied 150 coaches for 'Namma Metro' making up 50 rakes with a 3-coach consist. They were arranged in DMC-TC-DMC formation. Later in 2017, BMRCL ordered 150 more coaches from BEML to convert all rakes to 6-coach consist.

The rakes were made of stainless steel and were similar to those already running under RS-3 scheme in DMRC. The bogies are double-axle Bolsterless, Tubular pipe transom type with traction drives based on central pivot, mono-link and lateral dampers. The primary suspension is rubber-spring while secondary suspension is provided by air spring and anti-roll bar. The rakes derive their traction from the 750V DC third rail system. Each 6-car trainset has the formation of DMC-TC-MC-MC-TC-DMC. The propulsion is of 3-phase IGBT based VVVF (Variable Voltage Variable Frequency) type, supplied by MELCO. The traction motors are squirrel cage 3-phase induction motors which are capable of regenerative braking. Each DMC and MC contains two AC traction motors, each of 180kW rating who run at 550v 3-phase AC supply and are driven by two VVVF units. The VVVF converter utilizes IGBT-based PWM inverter.

The trains use electro-pneumatic wheel mounted disc brakes blended with electric-regenerative braking. The coach wheels

are designed with double disk brake system for greater braking efficiency. The blending is done on demand by calculating braking demanded and dynamic brake performance. It provides for Regenerative braking from 85 kmph to 1 kmph and pneumatic braking from 7 kmph to 0 kmph. The braking is controlled by BECU (Brake Electronic Control Unit). Each car has one BECU per bogie.

The train is based on Ethernet IP-based Advanced Train Control and Management System (TCMS) for real-time control and management of the entire rake like traction and auxiliary components, braking, Ventilation and HVAC, Door systems, PAPIS (Passenger Announcement and Passenger Information system), signalling systems etc. The TCMS is integrated with high-data rate broadband radio system which live streams the CCTV footages to OCCs in real-time. The trains are equipped with Automatic Train Protection (ATP) and Automatic Train Operation (ATO) modes to support the Cab Signalling system of Phase-1 metro.

The PAPIS system in the rake is fully IP-based system facilitating OCC Radio Public Announcement, cab to cab communication, passenger to motorman emergency communication, playing of recorded messages and chimes during opening and closing the doors.

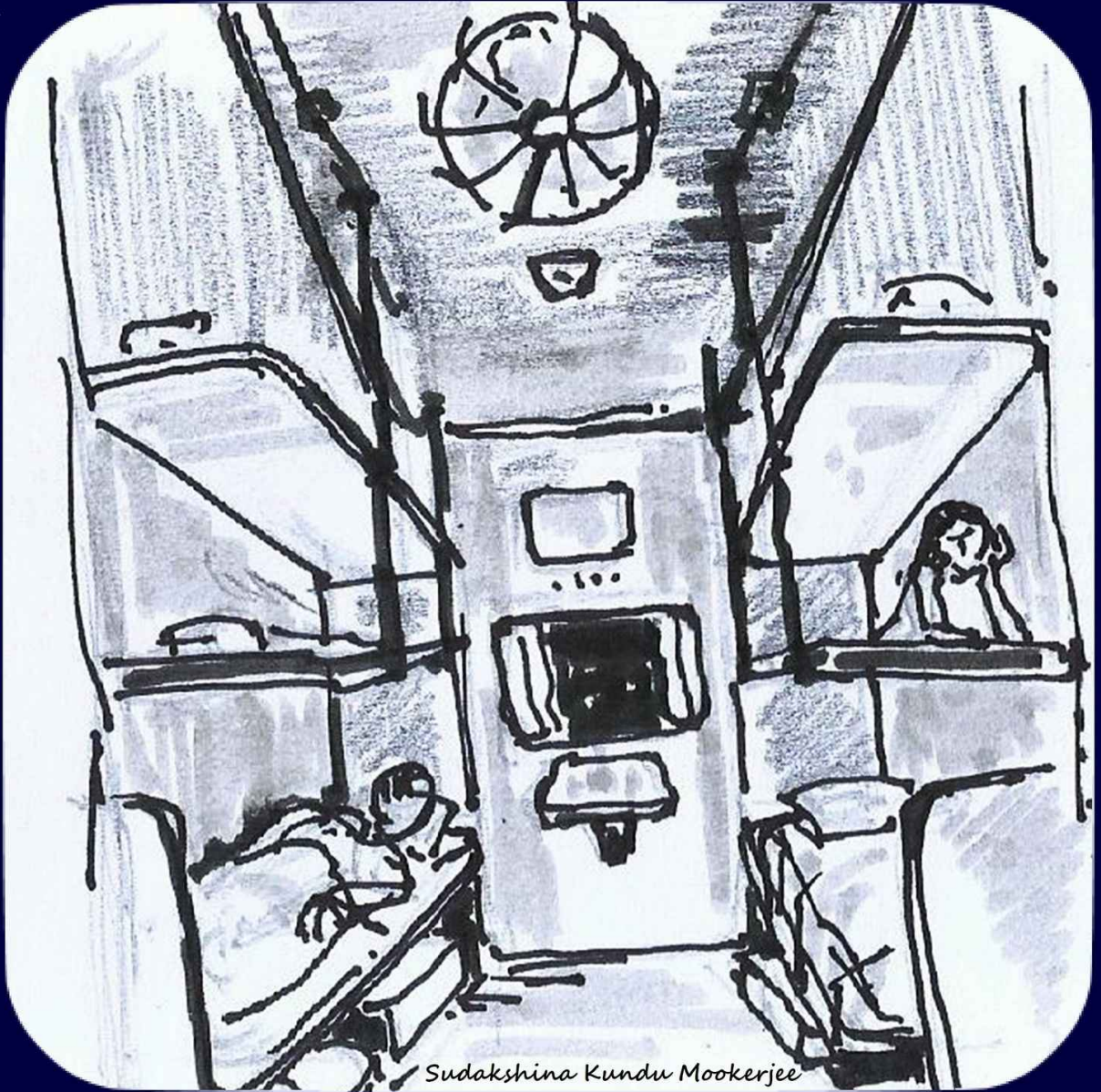
Recently, CRRC Nanjing Puzhen won the contract to supply 216 coaches to BMRCL, out of which 21 rakes of 6 coach each will run in Green and Purple lines and 15 rakes will be for the Yellow Line. The rakes will be manufactured locally, mostly at a factory at Dholera, Gujarat.

Signalling system :

This metro uses URBALIS-200 Cab Signalling system along with ATP/ATO supplied by Alstom. The telecommunication and network are supplied by Thales group. The operational control centre is at Byappanahalli. The consortium of Alstom, Thales and Sumitomo Corp won the bid to supply, install and maintain the signal and train control operations, telecommunication and safety systems of the metro corridor. Soon the signalling system will be upgraded to the most modern CBTC signalling system.

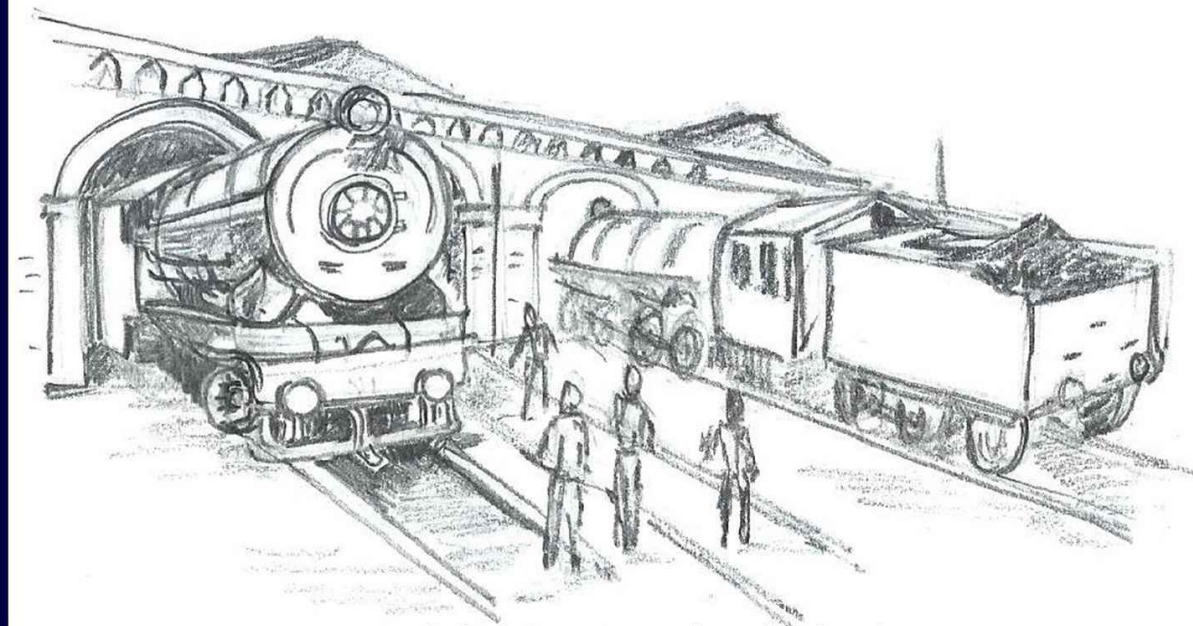
The Yellow Line's signalling system will be CBTC signalling system by Siemens.

With a plethora of new lines coming up in near future in these three business hubs of South India, the face of rapid transit is set to change rapidly and change for good. New distances will get travelled in the new coaches from different firms while taking giant steps towards achieving the path of green energy through an efficient public transport system. A paradigm shift towards a mass rapid transit system like metro will surely reduce congestion, bring down emission and save precious time. We will keep tracking this rapid progress across the country as I will talk about the three metro systems from the western part of our country in the next part of this ongoing series – the Business Capital of nation, the Manchester of India and the Pink City.

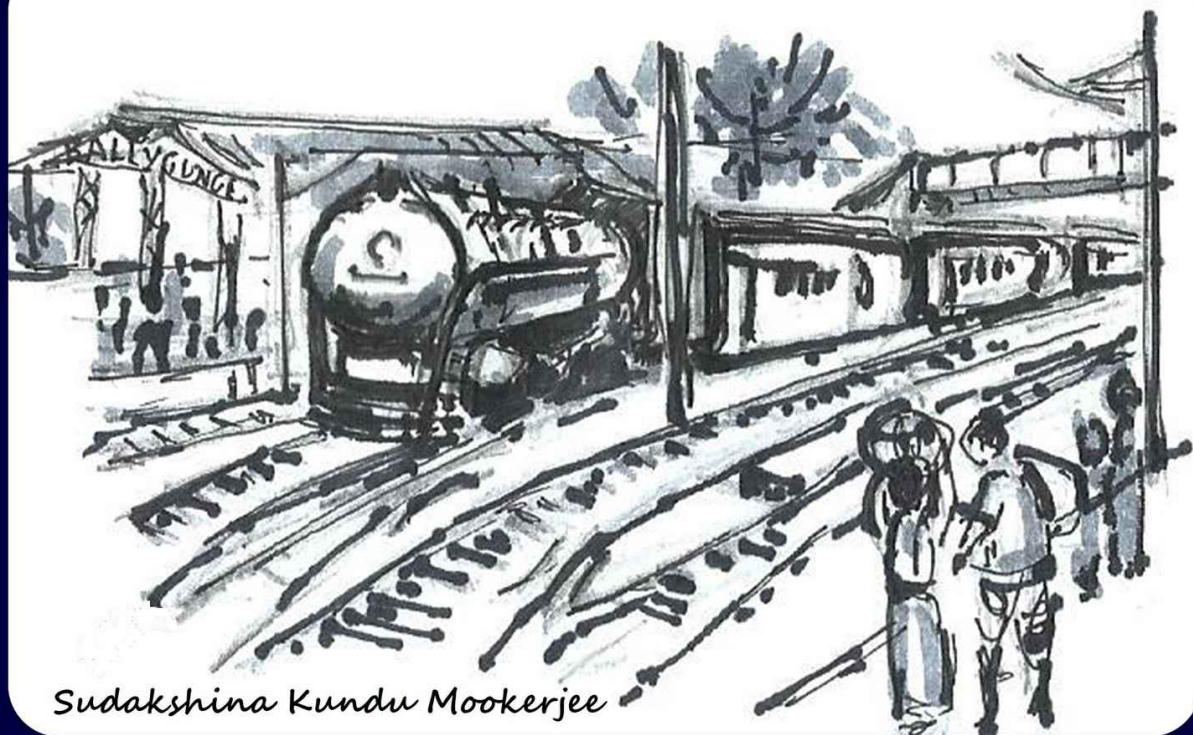


Sudakshina Kundu Mookerjee

Railway Sketches



Sudakshina Kundu Mookerjee



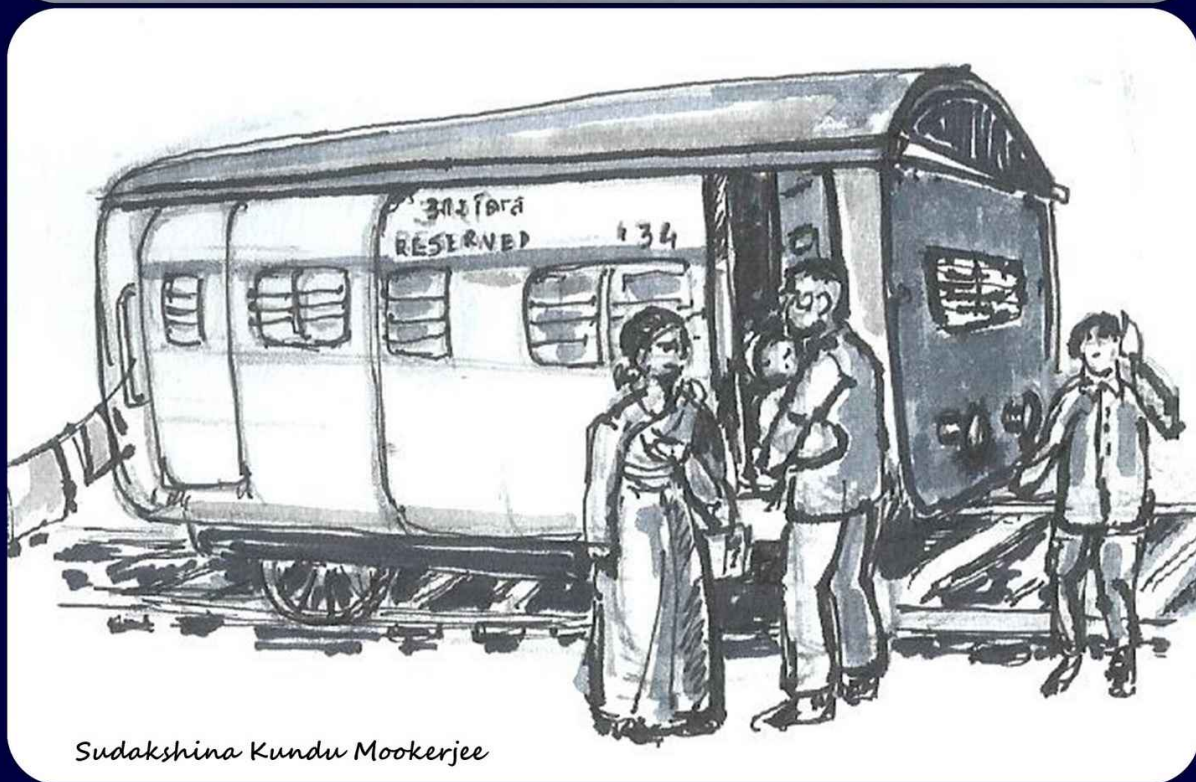
Sudakshina Kundu Mookerjee



Sambit Chatterjee



Sambit Chatterjee





Relevance of Calcutta Tramways

On Its 150 years Anniversary

Dr. Debasish Bhattacharyya

There were 150 reasons to dismantle the Calcutta Tramways Company (CTC) during its 150 years of journey, especially between the 40s and 60s when a series of beautiful tramways across the world succumbed to the wrath of automobile lobbies. An additional reason of CTC's closure could have been the gradual detachment of the British shareholders after independence of India in 1947. Citizens of Calcutta are very fortunate that the indispensable character of the tramway for the city was properly acknowledged by the local authorities. The roles of the tramway worker's unions that were mostly supported by the communist party of India should not be underestimated.

Nationalization of the CTC certainly saved the system from oblivion but at the same time, it became slowly infected by inefficient and dishonest people as administrators who had little knowledge and interest to run this tramway. The situation deteriorated to such an extent that by 1996 the tramways was proposed to be wrapped up. However, it never happened because there was always unhappiness among the citizens against this anti-people move. In the prevailing engulfment of the state of West Bengal by corruption and

invisible infiltration of the automobile lobbies, including two and three-wheeler manufacturers into the policy making of the transport department, this tramway was not only put into life support but also crippled the functionality of the public transport at large.

Keeping the CTC apart, let us review the Calcutta State Transport Corporation (CSTC) who operates buses in and around the city. As the CSTC is bogged down with inefficiency and corruption, the bus fare has not been modified according to inflation and the permanent employees enjoy pay protection and service benefits. On the other hand, CSTC requires a huge subsidy in spite of running air-conditioned buses at an elevated fare structure. This subsidy is disproportionate to the service it renders to the society. On the other hand, if the volume of the bus passengers is distributed among auto-rickshaws, the number of three wheelers will be very large catering to many unemployed people. Once they are given a free hand to set the fare structures and routes along with license to carry additional passengers and flouting safety rules, auto-rickshaw owners are happy who do not require subsidy. An institutional



Lawlessness!!! Bike riders without helmet & Autos obstructing Tram tracks...

bribing pattern satisfies all the stakeholders in power. So, which one is more lucrative to the policymakers – apparently unjustified subsidy from state exchequer inviting public criticism versus hidden incomes at personal levels? Road congestions, safety of passengers, environmental degradation or extortion of money in the disguise of fare – they all may be quietly placed on the shelf. Once this equation is understood, it will be easier to evaluate where the CTC and the CSTC stands at present.

Withholding the involvement of the anti-tram lobby in the policy-making of the public transport in Kolkata, this article will highlight the relevance of CTC in the coming days as a mode of sustainable mass transport. In the era of high-speed Metro Railways, one may ask, are tramways useful today? Acknowledging all the benefits of Metro Railways, their limitations should also be considered. They serve along a corridor only and, as a result, its penetrability into the city is very poor. Often, the distances between two stations are not so short and access to the Metro Railway platform is prohibited to a variety of commuters. All Metro stations require feeder services to cater to the commuters at the end points. Since Kolkata deals with an astronomical number of citizens, the exclusion of Metro Railways forces a very large number of commuters to depend on surface transport. A boom in car ownership, that satisfies more of societal ego than necessity, argues for maximum freedom of mobility. A two-wheeler satisfies more of a 'He-Man' image than its utility. These people vouch for unobstructed wider roads. However, their owners are never concerned about road congestion, road space occupancy per passenger, parking problems, road accidents, or air and noise pollution. Even after licensing for innumerable cars and two-wheelers, the percentage of commuters travelling by these modes are negligible compared to the total demand. A visit to Howrah station, Sealdah station or Ballygunge station in the peak hours of any working day would justify this statement simply from eye estimation. Further, even after completion of all Metro Railway projects of Kolkata, a vast majority of the area

will have no direct access to the railway.

A trend that emerged worldwide around the 1980s which later fortified from the 1990s was re-evaluation of the tramways as an efficient mode of mass transport in all big cities. The primary cause of the selection of tramways over Metro Railways and buses stands on its economic success. A simple two-parameter correlation shows that, while the Metro Railway is highly efficient, its installation and operational costs are extremely high. In contrast, the quality of service offered by buses and their service life is poor, though its installation is much cheaper. A tramway provides a higher quality of service at a moderate installation cost and the network of the tramway may be extended part-by-part; as a result, it never requires a large sum of money. An extraordinarily long service-life of the tramcars and lesser requirement of safety features compared to Metro Railways lead to operational and running costs of tramways to a minimum. It is clear that without an economic success, the comeback of tramways in this century was impossible. Note that the advantages of decongestion of roads by carrying a large number of passengers together, solving car parking problems, reduced air and noise pollution, and thus reduction of medical costs, reduction of road accidents, upliftment of the quality of urban life, a positive image of the confidence of the city authorities are all added advantages of a tramway. These societal benefits can actually be calculated in terms of money and are added to the income of a tramway.

One should consider that in the city of Calcutta and its surroundings, the population is astronomically high. Thus, even if an insignificant percentage of the inhabitants own personal cars, the effect is a catastrophic disaster. An 'all inclusive' sustainable public transport is thus essential. The state transport is non-functional; private buses are involved with innumerable problems, the Metro serves along corridors, and taxis are not affordable for the mass. To fill up the demand, auto-rickshaws have grown like bacteria and they are the moving demonstrations of lawlessness of a city. In fact, the city does not have an option other than a tramway network to make it habitable.

The major advantage of revival of the CTC from its currently pathetic condition is that it already exists. No major investment is required and whatever is necessary is a peanut compared to the cost involved for the construction of the Metro Railways. Fortunately, the track and traction are spread all over the city, as they were during the British era, except the Chowringhee and Behala sections. Minor reconnection of the truncated sections like Gariahat Junction or Bentinck Street or Galiff Street - Shyambazar stretch and strengthening of bridges could restore the full potential of the tramways. In addition, except the Tollygunge Tram depot where a huge chunk of land has been sold to real estate monsters, all tram depots are mostly intact with respect to the circulating areas of tramcars till date. Although many

tram sheds have been converted to bus sheds, their reconversion is easy. Thus, there is no dearth of space to house some 500 tramcars, as we had before.

Centrally located Nonapukur workshop under CTC is a wonderland. The craftsmanship that the workers have shown over a century is legendary. They can do whatever is sought after. In addition to periodic overhauling and remodeling, trams were manufactured ab initio in this workshop. People from waste recycling management will be delighted to know that many items related to the tramways, like all kinds of metal scraps, wooden frames, glass etc., are reused. The workshop has, at least had, a wide array of shops like electrical section, wheel section, carriage shop, painters' shop, carpentry, blacksmith foundry and so on. As a result, having minimum raw materials procured from the local market, the workshop can produce marvelous tramcars at a very reasonable cost. There are innumerable examples that indicate the ability of the in-house work force; for example, the recent creation of an aerodynamic model with a fiber body and light-weight trams, conversion of two-coach trams into single coach cars, introduction of air-conditioned trams, etc. The recent past has witnessed the conversion of a completely burnt two-coach tram into a deluxe car, the conversion of a century old watering car into a heritage tour car, the list goes on.

That's what we call a network!!!



Nonapukur Workshop

At many places, the alignment of the tram tracks is in perfect harmony to serve as a feeder service to the Metro passengers. In fact, in North and Central Calcutta, and to some extent in South Calcutta, people can travel to any place using the Metro Railway and a tram, coupled with a few minutes of walking. This can largely remove the traffic congestions and pollution in the city. Historically, the city was developed along the tram tracks. That's why, all important public utility establishments like schools, colleges, universities, medical colleges and hospitals, railway stations, ferry services, the central business district, shopping and entertainment lounges, etc., are located beside the tram routes. In our childhood, a dawn to midnight tramway service served as our private vehicles.

What is the definition of a modern tramways or light rail transit? Is it confined to smart, aerodynamic-looking, brilliantly painted air-conditioned glass or fiber covered low-floor multiple coach trainsets? The attractive model of cars certainly builds a positive image but there are other indispensable factors that make a tramway modern. Priority on roads and inclusion of all commuters are two major components. Like a railway, tramway too deserves reserve tracks free from vehicular traffic; 'Tram Only' facility at narrower roads, priority of crossing at road intersections etc., are some of the ways by which the movement of trams is not interrupted anywhere, leading to a perfect maintenance of schedule. This also ensures the attainment of optical speed of tramcars, avoiding sudden acceleration and deceleration. Modern tramways carefully consider the need of all citizens at any time of the day so that the commuters are not compelled to use alternate modes of transport, as much as possible. These include, fulfillment of the requirements of infants and children, physically challenged people, senior citizens, etc., on one hand, and people carrying a reasonable volume of luggage, even bicycles, special services in festivals or, sports events etc., on the other hand. Needless to mention about the avoidance of excessive crowding by adding extra cars as predicted from computer programming, affordability of the fare structure etc., are also considered. The overall objective is, the tramway should be on service for all at any time of the day.

Does it require a large sum of money to create a modern tramway? No, not at all! Especially when a tramway already

exists, like in Calcutta. There are many examples in the world where an existing, old-fashioned tramway has been converted into a modern system by gradually phasing out the old cars by modern rolling stock. Since the old and the new cars use the same track and tractions (trolley poles versus pantographs), there remains no scope of wastage of resources. San Francisco and Toronto are two examples. Hong Kong modified their old double-decker tramcars with modern gadgets without affecting their outer heritage looks. So, the procedure of change-over depends on the local culture and economy of the city.

The issues of environmental degradation and climate change are no more a matter of concern for the elite classes who can mitigate the ill effects of the environmental by adopting different facilities like air-conditioned rooms or cars or medical treatment. Poor people suffer maximally from pollution. A welfare state should protect its citizens from these issues by discouraging car ownership and encouraging the usage of public transport. The second category also creates job opportunities and economic stability in the society.

The stage for revitalization of the CTC is ready; the stumbling block is the political will. Stubborn politicians and their minions in the Transport Department are more interested to fulfill their short-term benefits withholding the long-term advantages of a tramway in Calcutta. I have witnessed the willingness of different city authorities of India to install tramways of variable capacities according to their population. Sometimes, I think to myself that this statement needs to be printed on posters in Kolkata - 'There is enough scope to siphon money from tramways too like electric buses that are portrayed as the model electric vehicle' - to save the CTC for the time being. Once the present crisis period is over, I believe the CTC will run smoothly in future with advancement.

Photographs including cover photo courtesy Rudranil Roy Chowdhury unless mentioned otherwise.

Below collage images courtesy:

- 1) Toronto Trams - urbanrail.net
- 2) Hongkong Trams - hongkongcheapo.com
- 3) San Francisco - exp1.com
- 4) Melbourne - Roberto D'Andrea



Old & new rolling stocks @ Toronto



Hongkong Double-decker Trams



San Francisco Street Cars



Melbourne Trams



150th Anniversary of Kolkata Tram

2023 Tramjatra: A Tram Journey to Remember

Tony Graham & Roberto D'Andrea

It's around midnight and Roberto and I have arrived in Kolkata, greeted by four friends and members of the Calcutta Tram Users Association (CTUA). The colours, sounds and activities around the airport are a sight to behold and there's some Kolkata tram photos displayed around the airport proudly showing trams as a symbol of the city. Ah, India! We had arrived to be part of the 150-year celebration of the oldest and longest serving tramway system in India and Asia.

I once worked for the Victorian Railways in my younger days and like my friend, Roberto, have a love for trains and trams. We are a part of the 2023 Australian Tramjatra team who are joining our tram enthusiast friends in Kolkata and set to participate in a unique series of pro-tram activities over the next 6 days. The positive anticipation is infectious, and we are here to celebrate all things tramways with a strong focus on environment, heritage, de-carbonising transport and climate change. Roberto D'Andrea has been coming to Kolkata for 29 years, and with others, has helped foster a unique relationship between the tram-loving communities of

Kolkata and Melbourne. Together with Hong Kong, we are rare, surviving continuous-use tramways outside of Europe and the Americas, and a part of a unique global tram family. The Tramjatra festivals are centred around trams and their positive impact on creating livable cities.

Planning for our involvement takes place in both Kolkata and Melbourne. Since 1994, in Kolkata, as a part of the tramway friendship we have curated and staged 10 Tramjatra events which has seen the decoration of 15 Indian tramcars with names like Bondhu, Calbourne, Sundari, Baccha (Children), Paribesh bandhu and Gitanjali, having a variety of cultural, environmental and climate change related themes. 6 trams have been decorated in Melbourne as a part of these unique Tramjstras.

Roberto and I have brought with us over 25,000 tram and biodiversity cards with native animals from Australia and India to help highlight the environmental benefits of tramways, and a range of historical tram tickets to celebrate a shared continuous use tramway heritage. Following the



Melbourne Art Tram

Kolkata Sundari Tram 649

Tramjatra tradition, we will be performing as tram conductors dressed in 1980's Melbourne Tramway uniforms, complete with conductor's bags and ticket punches for the true tram conductor experience. Roberto has been teaching me some Bengali words to help describe the themes on the cards and tickets. He has also talked about how the once great tramways is left with only 2 functional tram lines between Tollygunge and Ballygunge (Route 24/29) and Gariahat Depot and the Esplanade (Route 25). A 3rd and popular tram line between Shyambazar and Esplanade (Route 5) opened as a part of the 2023 Tramjatra on February 23 and remains open today. The West Bengal Government position is for Kolkata's Tramways to be run as a 'heritage only' service. Tramjatra and the CTUA's position is for the tramways to return to a 'high frequency' passenger tram service which would see depots like Kidderpore and Belgachia and closed tram lines re-open to supply citizens with a passenger tram service. Sadly, Kolkata has high levels of air pollution which is one of the worst in the world. Tramways have returned in cities across the world and the need of the hour is to de-carbonise transport and electrify transport systems in big cities. Kolkata is well-placed and together with our friends we will argue for 'heritage and high frequency'.

Our first day was spent in recovery from our flights and some local exploring. I had not been to Kolkata before having been in India over 30 years ago. I was interested in seeing what general transformations had occurred in this period.

On our first morning, we are awoken by the call to prayers, which was a wonderful introduction to the area that we planned to make as our base camp for the 8 days. Our hotel is a very friendly establishment located in the inner north University precinct not far from a major tram junction at College street and Mahatma Gandhi road. The day was spent immersing ourselves in local culture and activities. A chance also to reconnect with some friends.

Getting lined up for the mega event...



Volunteers all set for a long week ahead

Day 2 brought great expectations. We went to the historic Nonapukur Tram workshops where tram building and maintenance has taken place since the early 1900's. Here, many trams have been decorated as a part of Tramjatra over the years and I can see why Roberto loves the workshops. It's the epicenter of pre-preparation activities with great support from the Workshops Manager to engineers and trammies who gather around to check out all the action.

At Nonapukur, we meet our long-time friend and Tramjatron Mahadeb Shi, who is curating the 2023 Tramjatra event with Sagnik Gupta and Rudranil RoyChowdhury. Mahadeb is a film maker and has been involved in the tramways' friendship project in both cities, and with Roberto, has been a longtime friend and collaborator. We owe Mahadeb, Sagnik and Rudranil a big thanks for organising everything from tram decoration to the launch, conference, artists, schools and the historic tram parade. A new breed of young and enthusiastic members from the CTUA were also at Nonapukur with a group of public-school artists. It was a busy scene as historic wooden bodied tramcars 498 & 449 were being cleaned and painted. I could feel the collective

Tony with the Trammies @ Nonapukur





The showstoppers of the mega-event...



Veteran artist Manoj Dhan & singer Anjan Bhutta



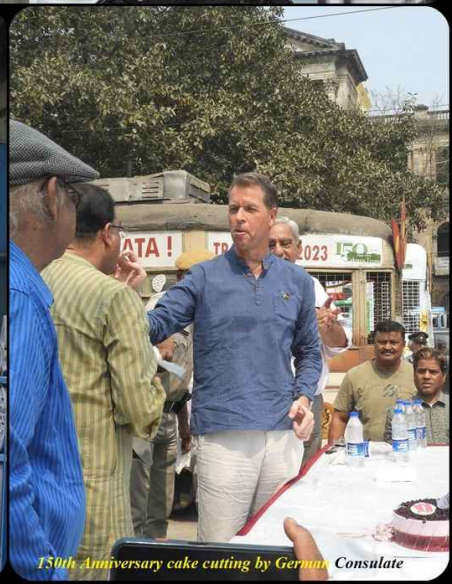
Rajanvir Singh Kapur & Mahadeb Shi



Roberto D'Andrea & Tony Grandin



Tramtatra Tram - 449 entering Esplanade...



150th Anniversary cake cutting by German Consulate

energy as we worked together for the Kolkata tram cause.

Roberto of course was in his element given his great input over many years. I could see the friendships that had been forged with tram workers and enthusiasts and now another opportunity again to work together in Kolkata.

The logistics of bringing 6 days together with an opening ceremony was a planning process that had many parts. These included dealing with West Bengal Transport Minister, the head of the West Bengal Transport Corporation (WBTC) Mr Ranjanvir Kapur, media, artists and a large tram volunteers support group.

Day 3 - 2023 Tramjatra - 150th anniversary of Kolkata's Tramway launch

On the morning of the launch, we had breakfast in a book-stall lane close to our hotel. A great banter with locals, who were also preparing for their working day, sharing conversations and consuming adequate amounts of puri and samosas with hot 'claypot' servings of chai. We're dressed in our uniforms and carrying our bags and cards. A walk-through back alleys and walkways to the Mahatma Gandhi Metro Station sees people smiling and nodding in an appreciative way. Roberto and I arrive in the Esplanade and are greeted with much enthusiasm. Media and tram enthusiasts from Germany and Europe had already gathered. People immediately started taking photos and selfies with us. We looked good in our historic Melbourne Tram Uniforms and I was surprised at how popular and immediate the reaction was. The stage was set for a huge launch. Dignitaries began to gather.

At the launch, the Transport Minister was clearly isolated with his and the Government's 'heritage only' view. To the Government's credit, they were allowing for a free and open tram debate and the scene was set for an interesting 2023 Tramjatra, where we would be clearly challenging the Government's position and advocating for a large tramway revival. With the launch complete, we started tracking Kolkata between Shyambazar and Gariahat with tram gongs ding-dinging on the 150th anniversary of Kolkata's

Tramjatra Trams - 498 & 449



Snapshots of the inaugural events...

tramways. I must give a special shoutout to Rowan Ainsworth and Daniel Sim from the Australian Consulate. The Consulate helped fund the 2023 Tramjatra and Daniel himself took great interest and came to many of our events. He is a great supporter of Tramjatra and a 109 Tram Traveller in Melbourne. We finished the day at Gariahat Depot at Tramworld where the Tramjatra tram would stay overnight.

Day 4 - Tracking Kolkata on the 150th Anniversary Tram

With a huge media presence at yesterday's launch, Roberto and I started our Saturday at a local newspaper stand at the tram junction on College Street and Mahatma Gandhi Road, right beside where the tramway points-men were stationed. Roberto has known the newspaper fellow for many years, and

Leading newspapers covering the event...

A collection of newspaper clippings in Bengali. The main headline reads 'স্বাধীনতা বর্ষের অনুষ্ঠানে ঐতিহ্যবাহী ট্রাম ছুটবে কলকাতায়' (On the 75th Independence Day, the iconic tram will run in Kolkata). Other headlines include 'দেড়শোতে পা, নাস্টালজিয়াকে সঙ্গী করেই তিলোত্তমায় হেরিটেজ ট্রামযাত্রা' (Heritage tram journey to Tilottoma with nostalgia as a companion) and 'Tram lovers, commuters mourn slow death of green transport mode on its 150th b'day'.

he helped us look for all the Bengali and Hindi language newspapers articles written about 2023 Tramjatra launch and festival. We'd hit the big time and came back to our hotel with a bundle of newspapers and over 15 articles, some front page, from the Bengali, Hindi, Urdu and English language press. Coupled with extensive TV, Radio and online reports we now had blanket media coverage.

Today we dress in our shared lung tram shirts, which have a hand drawn tram map of Kolkata in one lung and Melbourne in the other to symbolize the environmental benefits of tramways. We made our way direct to the Gariahat Tram Depot in south Kolkata where we would meet the 150th anniversary tram. At the depot, we spent time with local trammies. Roberto has known them for many years, and I was fascinated and profoundly moved to see that the tram workers very much embraced our involvement and reflected on many stories of the history of working for the Calcutta Tramway Company (CTC), most with multi-generational involvement. We spend nearly two hours engaging in conversations. We were comrades.

Roberto and journalist Sandip Roy interviewed Tram Driver Gopal Ram who was soon to retire. Sandip spent much time with us and went on to write about the encounter in the Times of India. *"Driver Gopal Ram's family history pretty much spans the 150-year history of Kolkata's trams. His great*

Roberto with driver Gopal Ram in front of 498...



Trammies of Gariahat with Tony & Roberto...

grandfather Antu Ram, his grandfather Mahavir and father Jagannath were all tram employees, harking back to steam tram days. Gopal retires at the end of February. The line ends with him. His son sees no future in trams. Ram tells D'Andrea stories he had heard about how tram workers had patrolled the city with empty trams to restore confidence during the Hindu-Muslim riots in the mid 1940's. His father helped save some people from a mob near Rajabazar. "I don't know if they were Hindu or Muslim. CTC Tram Workers were like a family. It didn't matter who came from where."

We depart the Gariahat Depot for Esplanade, tracking on Route 25 via Park Circus, Elliot Road, Wellington Junction and Lenin Sarani. With blanket media coverage, Kolkatans are looking for the decorated trams and waving from the side of the road. Roberto and I are tram conducting in different carriages and spending time roving inside the tram on a meet and greet with enthusiastic passengers before heading to the doorways to wave and greet onlookers outside the tram. At Esplanade, we are met by students and teachers from the Voice of the World school. Rail Enthusiasts Society Kolkata Chapter (Rudranil being a member there) engaged this social welfare organization to bring blind, deaf, disabled and underprivileged young ones to our tram event. We love that these youngsters have been given the opportunity to join us and we welcome them onboard as we prepare to depart Esplanade for Shyambazar in the old north of this fascinating city.

Like Roberto, I have quickly fallen in love with Bengali culture and people! With us, Kolkatans are spontaneous and

Interacting with Voice of World school kids...







Iconic Tram during iconic event in front of iconic sweet stores of Kolkata...

inquisitive. To see a community come together for this 'tram mela' is a testament to their love for trams. Many conversations with passengers and concern for the future of Kolkata is expressed if passenger tram services cease. The people we meet are from all walks of life and we welcome one and all onto our trams. It is a surreal feeling to oversee a tram working its way through a great city like Kolkata and through the day we often become true tram conductors by ringing 1 bell to stop the tram, 2 bells to go and make sure everyone safely enters and exits our tram. The responses from the public were fantastic with conversations and proud smiles that two Australians would come this far to support 'our' tramways. Everyone was genuinely excited. And how about the 'gunzels' (tram enthusiasts) that have come from Germany and Europe. They love taking tram photos and keep moving at distance in front of the decorated trams to get the perfect snap of the 150th anniversary tram on Bidhan Sarani, College Street or as we near the Wellington Junction.

Roberto has packed a range of tram-cards and historic tram tickets into our Melbourne Conductors bags for us to yarn and give away as well as tram gifts for passengers, both inside and outside the tram. Everyone is keen to collect the whole set which included a Melbourne solar energy tram card, a series of Tramjatra cards featuring trams from Kolkata and Melbourne. Roberto has the Sundari and Solar tram and I gave away the 2012 Paribeshbandhu and 2017 Melbourne Tramjatra cards. To highlight the environmental benefits of tramways, we gave passengers a series of native animals' cards from Australia and India. Bengal Tigers, Australian Kangaroos, birds, frogs, fish, lizards and butterflys from both countries. We talk much about the Sundarbans and the how the largest Mangrove forest in the world protects Kolkata, West Bengal, and Bangladesh as a buffer and how it's threatened by sea level rise and climate change. How trams help reduce air pollution, traffic congestion and global warming. I'm surprised by the many passengers who speak a beautiful brand of English and watch how Roberto gathers big groups of people at the tram

termini to entertain, educate and inform about the 150th anniversary-2023 Tramjatra, in both English and basic Bengali. Our trams are full, and we make sure there was always space for the punters to jump on and enjoy the festivities of laughter, banter, music and historical information. We finish the day at the Gariahat Tram World, where we have a chance to chat with our friends and volunteers. Tomorrow, a world first for Kolkata...a historic tram parade.

Day 5 - Historic Tram Parade

Today is another huge day for the 2023 Tramjatra. For the first time in the history of Kolkata's Tramways, a historic tram parade! We arrive at the Gariahat Depot and already the place is full of tram-lovers. Another jaw dropping moment! Mahadeb and the CTUA have organized everything beautifully. The day starts with a mini tram festival before the Tram Parade departs from the depot. There are students from the Silverpoint School holding pro-tram placards, a band playing tram songs and proud trammies helping to prepare the event with our volunteers. All the European enthusiasts are here taking lots of tram photos. Roberto and I are back in our 1980's green tram uniforms and everyone wants a photo with the Melbourne Tram Conductors. We are always happy to oblige and joke to each other that we've broken a world record for the number of 'chobis' (selfies and photos) taken with us. The atmosphere is electric and the parade trams on display look beautiful. When not being photographed, we're busy yarning and giving away our cards and tickets. To see the historic tram fleet at the Gariahat Depot is special and a tram enthusiasts paradise.

Roberto and I start to prepare the huge mob of tram-lovers for the Tram Parade. Amit Moulick from the Telegraph Newspaper wrote, "The city on Sunday saw a unique parade of trams. Eight tramcars - from oldest to latest - did a colourful parade from the Gariahat Depot to Esplanade and then to Shyambazar and the Nonapukur Tram Workshop. All along the route, people stood on the streets to cheer to express their love for the transport mode"... Roberto told me later in the day that today's Tram Parade was one of Tramjatra and the CTUA's greatest achievements. That we had been a part of one of our greatest days alongside when the much-loved Usha Uthup tracked Kolkata, singing in 649 Sundari in

TRAM PARADE CELEBRATES 150-YEAR-OLD KOL LEGACY



The city on Sunday saw a unique parade of trams. Eight tram cars - from the oldest to the latest - did a colourful parade from Gariahat depot to Esplanade and then to Shyambazar and Nonapukur tram workshop. "All along the route, people stood on the streets to cheer to express their love for the transport mode. It took 30 minutes to travel from Gariahat to Esplanade and another 30 minutes from Esplanade to Shyambazar." Since it was a Sunday morning, there were fewer cars on road. It underlined the fact that trams do not cause congestion, but cars do," said Calcutta Tram Users' Association (CTUA) general secretary Mahadeb Sii. While CTUA painted two trams, CTC did the decoration for the rest







The historical Tram parade of Kolkata...

2001, for the mass public interest created and love expressed towards the tramways.

For the historic archive and our many enthusiast friends at Rail Canvaz, the running order of the eight tramcars and year built went like this. The lead tram was....

1924 - HWC 1 Howrah Works Car (No 1 tram)

1918 - Balaka Tram 125 : Rebuilt at Nonapukur in 2005 (No 2 tram)

1975 - Bonolata now Paat Rani Sundari Tram 568 : Rebuilt at Nonapukur in 2002 (No 3 tram)

1948 - K Class Tram : 150th anniversary tram - Gitanjali (No 4 tram)

1982 - Tram 258 : Art Gallery Tram (No 5 tram)

1983 - Tram 604 : Burn Standard Tram - Partition Museum (No 6 tram)

1988 - Tram 705 Bioscope Tram (No 7 tram)

2018 - Tram 615-1 : AC Single Coach Tram - Library Tram (No 8 tram)

Day 6 - Tribute to a Legend

The 6th day of the 2023 Tramjatra was devoted to arts and culture. Like Melbourne, artists love to feature Kolkata's trams and use them as a central feature in artworks, film, plays and song. This has helped elevate the profile of trams as cultural symbols in both cities. Tramjatra has involved the arts with tram plays, dance, painting, film making and in-tram photo exhibitions as a big part of our 29-year history. With this in mind, Mahadeb designed Day 6 to feature our environment arts tram (449), dance, music and Sourosankha Maji designed a tribute to the legendary and much-loved Bengali film maker Satyajit Ray.

Tram 449 was painted by a group of artists from 33/3 STUDIO, led by Shibayan Halder. They are the ex-students of The Government College of Art & Craft in Kolkata, which is one of the oldest and most prestigious Art Colleges in India. It was founded on August 16 in 1854 and what a privilege to have them on board. Roberto and I nicknamed 449 the Flower Tram with its large yellow flowers wrapping the front and sides alongside vultures, forests and breaching dolphins.



The Tram Artwork, Dance troop & the Cactus bengali band performance...

Thanks to the artists who painted K Class Tram 449. Shibayan Halder, Rupam Dutta Banik, Amrita Halder and Sunai Sarkar.

The next surprise was the return of a group of colourful women who danced in classic Indian style around the Flower Tram. The dance troupe called 'We Are One' added style and colour. They were followed by our 2023 Tramjatra theme song sung by an Indian group called Cactus, led by a fellow they called 'Sidhu'. "Let's Love Tram....Save Earth" are Mahadeb's thoughts about the eco-friendly nature of trams placed into song by Indradeep Dasgupta. Sung in Bengali, parts of the song say, "*Tram the electric car.... The push to move forward.... May everything be green once more.... And the temperature never rises.... This city would be smoke free.... Dreams of the future.... A world without pollution.... Dreams live on across the tram lines today.... Two bogies tram moves on.... It talks about the future.... A new dawn.... A world without pollution.... Dreams live on across the tram lines today.... Let's love tram and save earth.*"

In the afternoon, we head to the Tollygunge Depot to launch the Satyajit Ray tram. Tollygunge Depot is a large and important piece of tramway infrastructure and there's many tramcars that call this depot home. Sadly, since the closure of Routes 24 and 29, Tollygunge's trams cannot be maintained and repaired at the Nonapukur Tram Workshops. The popular route 24/29 which tracks from Tollygunge to Ballygunge and return is isolated. On arriving, Roberto and I spend time with our trammie worker comrades. It's another home-coming for Roberto as workers flock around for lively chats about the situation here. We're glad that we've included Tollygunge and Ballygunge in the 2023 Tramjatra. We're here to launch the Satyajit Ray tram. He was an Oscar winning Indian director, screenwriter, documentary filmmaker, author, essayist, lyricist, magazine editor, illustrator, calligrapher, and composer and often used Kolkata's tramcars in his movies. The first two minutes of his famous film 'Mahanagar' (Big City), starts with a beautiful tram scene where of an old trolley wheel tracks majestically along the overhead electrical tram wire complete with



Satyajit Ray Tram getting ready...



Kolkata Tram - 150, Satyajit Ray - 100



@ Ballygaunge Terminus



Inside view of Ray Tram



Ray and his films on his favourite Kolkata Trams...



The artwork designed by Sourosankha

conversion to sustainable transportation is required as the world deals with a climate catastrophe and a growing worldwide road safety dilemma. Additionally, it is important to promote non-motorized modes of transportation like cycling and walking for low carbon emission and improved quality of life. Kolkata should revive the tram network and offer better tram services to the passengers. Instead of running it only as heritage transportation we should make it one of the main components of the city. Alok Jain, a mobility expert from Hong Kong who ran the tram system there said, "In Hong Kong, the tram connects the Metro and bus and offers last mile connectivity. It even makes a profit." Arkopal Goswami, a mobility expert from IIT-Kharagpur, said, "Unlike the common perception, the tram is loved and patronized by the younger generation, which is aware of the looming climate crisis. Tram is the cleanest shared transport. It makes little sense when you purchase e-buses and abolish trams, the smartest of the e-vehicles. In fact, the expansion of the tram system can solve mobility issues in Salt Lake and New Town."

In summary, by the festival's end, the Melbourne Tramjatra Conductors had yarned and given away over 20,000 cards and tickets!! We met many fascinating and interesting people, workers, artists, passengers and volunteers. We have tried our best to promote the benefits of well-run tramways. For me personally, this was the experience of a lifetime and I was able to connect with a different culture on a beautiful level. Thank you, Kolkata, for being such an engaging and beautiful city, full of many cultural and tramway surprises.

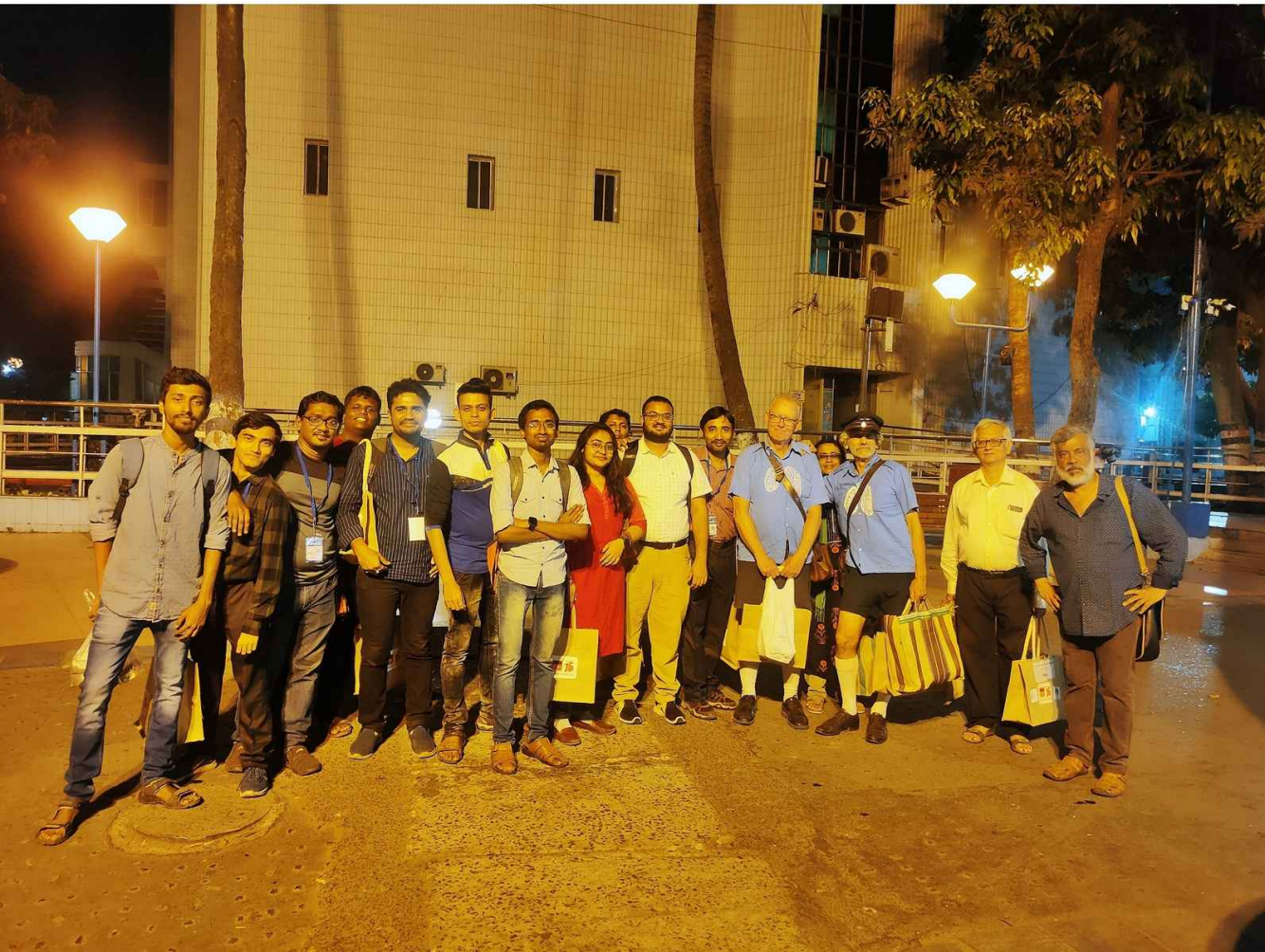
Tramjatra is an annual event started by Melbourne based Tram conductor Roberto D'Andrea in cooperation with Mahadeb Shi & Debasish Bhattacharyya of Kolkata, in order to save the iconic tramways of Kolkata from the verge of being extinct.

Cover photo courtesy by Arkopal Sarkar.

Other photos collectively provided by Tony Graham, Roberto D'Andrea, Akash Ray, Arkopal Sarkar, Jhuma Mondal & Rudranil Roy Chowdhury.

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The volunteer team after a successful week long Tramjatra event.



EIR Early Days : 1852

Line to Rajmahal

Major Kennedy, the Consulting engineer in his report dated 27th February 1851, had recommended the extension of the East Indian Company's Railway by the Gangetic route instead of direct line to Northwest, which was accepted by Government of India.

Directors of EIR, after receiving information from their agent in India that the Government of India had recommended extension of line under construction in the direction of Rajmahal, intimated the Court their readiness to undertake the surveys between Pundooah and Rajmahal. – **Letter from D. I. Noad, Secretary, East Indian Railway, October 14, 1851.**

Noad wrote: "Understanding that the honourable court of directors have adopted this suggestion of the Indian government, I am instructed, on behalf of this company to intimate their readiness to undertake the be the pleasure of the honourable court to have them proceed with" – **Letter from D. I. Noad, Secretary, East Indian Railway, October 14, 1851.**

James C. Melvill, Secretary, East India Company, replied on December 4, 1851, that he had laid before the court of directors, letter dated the 14th October last, intimating the readiness of the railway board, with reference to the court's decision that the extension line of railway should proceed in the direction of Rajmahal, to undertake the surveys between Pundooah and that town. He wrote:

"I am commanded to inform you that the court propose to signify to the Government of India that they approve of the surveys in question being made under the direction of their consulting engineer in conjunction with the railway company's officers, but that all the expenses occasioned by them be carried to a separate account." – **Letter from James C. Melvill, Secretary, East India House, to EIR, December 4, 1851.**

Melvill informed that the appropriation of those expenses would be determined according to the arrangements which might hereafter be made regarding the line being constructed by the railway company or otherwise.

East India Railway Company advised their agent at Calcutta to undertake the immediate prosecution of survey on the instruction of Government of India, subject to release of funds by the government to cover the expenses of the survey. -- **Letter from Noad to Melvill dated December 16, 1851.**

A tender notice was published on January 27, 1852 by Mr. Noad, Secretary East India Railway Company for supply of five passenger and five goods engines. Advertisement for post of chief loco superintendent of EIR was also subsequently published on 22nd June 1852 in leading papers and journals.

Survey of Rajmahal Line

Turnbull, Chief Engineer of East Indian Railway along with Major Baker, the Consulting Engineer to the Government of India, conducted the survey of the country, in the months of December 1851 and January 1852, between Burdwan on the South, and the shores of the river Ganges near Rajmahal for an extension of the Railway towards the North-West Provinces by way of Rajmahal.

He was assisted by Mr. William Evans during the survey.

They found that a line of Railway might be selected, with easy gradients, and without any heavy amount of cutting or embanking, and without any formidable works except at the river crossings, extending from a point near Burdwan, to a spot on the right bank of the Ganges near Rajmahal.

The point of diversion of extension line was selected at a distance of 81 miles from Howrah, and the distance thence to the Ganges at Rajmahal was 118 miles, making the total length from Howrah to Rajmahal 199 miles.

The point of divergence was about 15 miles West of Burdwan, near the village of Koorkoopore, which would be later known as Khanoo junction, now Khana. From there, the extension line would bend Northwards, with an easy curve of three miles radius, and then proceed North for about 41 miles to the place where it would cross the river Mor. The line would further pass the village of Dusgaon on the right, Elam Bazar about 6-1/2 miles on the left, Surrool about 3/4 of a mile on the right; and the large town and civil station of Sooree about 7 miles on the left.

The line would cross several streams besides the river Adjai. The first of these was the Kurree Nullah, which was about 60 feet wide, next was the Kumnor Nuddy, about 130 feet wide, then came the crossing of the large river Adjai, which was expected to be a formidable work. In the dry season the river was only about 70 feet wide, and about 1 foot in depth at the crossing, but in the rainy season it turned into rapid stream, 1,450 feet wide and about 16 feet deep.

The bed of the river consisted of sand of an unknown depth resting on the alluvial clay. Turnbull suggested that the mode of construction most suitable would probably be that of sinking large masses of brick-work in the sand, removing the sand through perforations or wells left in the brick-work, as tried with great success in constructing the Ganges canal across the sandy beds of rivers in the North-Western Provinces.

North of the Adjai, the surface of the country rose rapidly for about three miles, then sinking again into the bed of the

EAST INDIAN RAILWAY COMPANY.—The Board of Directors give notice, that Working Drawings, Specifications, and Forms of Tender, for Five Passenger, and Five Goods Engines, will be ready for inspection at this Office, on and after Monday, the 16th of February next, and that Tenders for the supply of the same, in the prescribed form, must be delivered to the undersigned, on or before Twelve o'clock on Tuesday, the 23rd of the said month.

By order of the Board,
D. I. NOAD, Secretary.
London, 50, Old Broad Street,
January 27, 1852.

EAST INDIAN RAILWAY COMPANY.—CHIEF LOCOMOTIVE SUPERINTENDENT.—Parties desirous of applying for the appointment of Chief Locomotive Superintendent are requested to forward applications and testimonials to the undersigned, at the Offices of the Company, on or before Monday, the 5th of July next. Salary, £800 per Annum.

By order of the Board,
D. I. NOAD, Secretary.
22nd June, 1852, 50, Old Broad Street, London.

river Culpee. The Culpee Nuddy was, in the dry season, a very small stream, only about 30 feet wide, and 6 inches deep; but during the rains, it filled a channel 190 feet wide at the place of crossing. The Railway was to be laid about 27 feet above the bank, and 36 feet above the bed of the river.

About 8 miles North of the Kulpee, the line had to cross the Backersal Nuddy. The intervening space was composed of clay and limestone kunkur; the river Backersal was about the same size as the Culpee Nuddy. From the Backersal Nuddy to the river Mor, the distance was about 9 miles. The Mor was a large river, similar to the Adjai in many respects. In the dry season, the stream at the point of crossing was about 9 inches deep, and about 100 feet wide. During the floods it filled a channel 1,300 feet wide and overflowed its North bank about 18 inches in depth.

The point of crossing was planned at about 7 miles East of the town of Soory. After crossing the Mor, the line proceeded nearly straight to the river Dwarka, descending at the rate of 1 in 1,000, crossing the Kandoor Nuddy, where a small bridge would be required.

District Handbook Birbhum describes river Mor as —

"It is at first a trifling brook trickling between two low ridges, and in the hot weather almost dry throughout its course; but where it crosses the Eastern Railway near Ahmadpur, it is, when in flood, as wide as the Thames at Richmond and further east is not inferior in volume to that river at London Bridge." --
District Handbook 1954, Birbhum.

The line would then come to the right in a North-Easterly direction towards the village of Mullarpore on a level for three miles, then descending 1 in 1,000 for 5 miles, curving to the right again, and proceeding in a straight-line Northwards, crossing the Moonra, the Chilla, and the Sangatta Nuddies, each of which was about 50 feet wide, on to the River Braminee, which would be crossed at the village of Jugdhuree.

In this neighborhood red iron-ore was found in large quantities, also gooting in abundance on the line of Railway. After crossing the Braminee, it would negotiate a rise for about 3 miles with an easy gradient of 1 in 2,000, descending again for 6 miles at a gradient of 1 in 1,000 to the Pugla Nullah, which was about 50 feet wide.

From the Pugla Nullah to the river Banslee, the distance was 7 miles, and the Railway would be on a level, on a low embankment. The surrounding area was inundated from 2 to 6 feet deep in the rainy season. The Banslee, like the other rivers, was diminutive in the dry season, and transformed

into rapid stream during the rains, filling a channel 450 feet wide, and about 12 feet deep, with a sandy bed and banks of clay. A bridge would be required about 550 feet long, with several land arches at each end of it.

Leaving the Banslee, the line would go in a straight direction a little to the East of North, leaving Kalkapore on the left, the gradient was 1 in 2,000, descending and crossing Lalla Nuddy 40 feet wide, and a low piece of land 3 miles in length.

The line would further, bend to the West of North, leaving Pakour on the left, and remain on a level for 7 miles through undulating country, and crossing the Putterghatta Nuddy 50 feet broad having a rocky bed.

The line now rose at the rate of 1 in 1,000 for 2 miles to the Dar Nuddy, a small stream 20 feet wide; continuing in the same direction for 6 miles to Kankjole, passing the Kankjole Nuddy 40 feet wide, the Bugdogerra Nuddy 50 feet wide, and the Gomanee Nuddy 100 feet in breadth. These rivers inundated the surrounding area during the rainy season and the water had a spread of 5 miles at a depth of 3 to 6 feet, requiring a considerable amount of flood arches.

Leaving the Kankjole on the right, the line would go due North for about 5 miles on a level, crossing the Kutchwa Nuddy, a 130 feet wide river.

Railway would enter upon a jungly rocky district, the line rising at the rate of 1 in 1,000 feet for 2 miles, and descending for 24 miles with the same gradient, and proceeding on a level for 2-1/2 mile to Oodwa Nullah on the Ganges, and by an alternative line 5 miles further to the coal wharf at Rajmehal, frequented by the Steamers navigating the river Ganges.

The cuttings in this portion would be of a different character from any of the preceding. The soil was rocky, the hills composed of basalt in large, detached masses, and boulders imbedded in a ferruginous sandy clay. The greatest depth of cutting was 27 feet, though only for a short distance.

At Oodwa Nullah there was deep water in the river close to the shore, and this appeared to be a favorable point for a wharf and landing - place.

The place where the river steamers stop to take in coals at present, is five miles further up the river, close to Rajmehal, and 204 miles from Howrah ; which of these two would be preferable for communicating with the river, and for a station, may be left for future decision when the requirements of the traffic are investigated. — Report to the Chairman and Directors of East Indian Railway Company from Geo Turnbull, Chief Engineer, EIR, dated 23rd February, 1852, Serampore.

The chief importance of touching the river Ganges, at or in the neighborhood of Rajmahal, was that the enormous traffic of this river, which had been aptly termed the great highway of India, might in great or less proportion be expected to take the direct and safe route by Railway of 200 miles to Calcutta, in place of the circuitous and dangerous one of about 528 miles by the Sunder bunds. The shorter navigation by the Nuddea rivers, and the river Hooghly, was almost closed for

many months throughout the year. – **Selections from The Records of Government of India: Paper on the proposed railway in Bengal, 1853.**

Turnbull concluded that the line would traverse a well-cultivated and populous country, at present suffering great inconvenience for want of the means of internal communication, also that valuable minerals were found at various places at no great distance from the line.

"In the Beerbhoom hills are found coal and ironstone, and copper ore is reported. At Domrah, near the 135th mile, there are some small smelting furnaces worked by the Natives, who succeed in producing cast and wrought iron of good quality and with a fair profit." – **Turnbull's report, dt 23rd February 1852.**

Turnbull estimated that an average of £ 12,000 a mile would suffice for the whole of the works for the 240 miles between Howrah, Raneegunge, and Rajmahal, the sum of about three millions Sterling would be required for the construction of the works, and for providing the complement of working stock and stations. – **Report to the Chairman and Directors of East Indian Railway Company from Geo Turnbull, Chief Engineer, EIR, dated 23rd February, 1852, Serampore.**

Report of Oldham - The Direct Route

The propriety of adopting the Gangetic line, however, was brought in question in the report of Mr. Oldham, the superintendent of the Geological Survey, who had several years' experience in laying out, and in constructing railroads, and whose views were particularly sought by the Court of Directors to subjects bearing on the establishment of railways in India.

"His Honor the Deputy Governor was pleased, on the 9th December 1851, to desire me to proceed to the Damoodah valley and from thence to pass into the country between that and the Gangetic valley; my object being to pass from the Damoodah valley through the Iron-yielding districts of Beerbhoom to Sikree Gully, as the Northern extremity of the Rajmahal hills."

He started from Calcutta, on 1st of January 1852 and then pressed forward to the coal fields of the Damoodah, and reaching Munglepore, devoted some days to the examination of the collieries of Messrs. Erskine, immediately adjoining that village; those of the Dhoba Company at Chowkeedangah; some smaller ones in the neighbourhood, now in the hands of Mr. MacSorley and some natives; and also, the extensive workings of the Bengal Coal Company, at Raneegunge.

Passing westwards from Munglepore, he visited the collieries of Bengal Coal Company at Cheenacoory, and subsequently those at Taldangah, Chaunch and Doomerkoondah, which were not being worked. From Damoodah coal fields, he proceeded to Parasnath hills. Enchanted with scenic beauty and cool temperature of the place, he suggested to develop it as a resort.

The wonderful beauty and richness of its thickly wooded

sides, broken up by the cool grey of the projecting rocks, whose precipitous cliffs cast their deep shadows around, with almost boundless view from its summit, stretching away over the billowy ridges to the west and north-west, and the unbroken plains to the east; the clearness of the atmosphere above, while all below is shrouded in a hazy mist called up by the overheated air of the plains, all combined to render it a scene of amazing beauty, and to impress one forcibly with the idea of the desirability of such a resort being made accessible to Europeans, as a relief from the destructive glare and broiling heats of Calcutta.

From Parasnath, he went to Curhurbaree Coal field, which was examined by McClelland in 1849. This coal was of excellent quality, it came out in larger and symmetrical masses and was free from admixture.

He passed from Curhurbaree to the eastward by Serampore, Junturra, and Rangoo Changoo, and thence skirted along the northern edge of the Damoodah coal field, from thence he turned towards Soory, purposing to get along the Rajmahal Hills to Sikree Gully, if possible. The season had, however, then become too far advanced to admit of their safely entering the Rajmahal Hills.

He avoided Rajmahal hills as these were considered deadly to Europeans visiting them after March. He visited a small patch of coal bearing rocks to the north of the River More, near to the village of Tungsuli, about eight miles from Soory.

Iron Manufacturing: Court of Directors had requested Oldham to explore the possibility of Iron manufacturing in connection with introduction of Railways into India. He found that the iron manufacture was almost entirely confined to three or four villages, of which Bellia Narainpore was the largest and most important. Next to it in the extent of the workings was the Village of Dyoucha, lying about 20 miles to the south of it. At Damrah also, the position of which was intermediate, there are several furnaces at work, and also at Goanpore. But there were few villages throughout that neighbourhood, adjoining which large heaps of slags and refuse of furnace-workings might not be seen, giving evidence of the extent to which, these operations had been formerly carried on, and of the long time during which they had been continued.

These large heaps of slags and refuse were later used as ballast, when the track would be laid in the area.

At Deocha there were thirty furnaces for the reduction of ore; these were worked by Muhammadans, the refiners being Hindus. The estimated average outturn from each furnace in the year was 34 tons of iron, and as there were believed to be in all seventy furnaces, the total outturn of kachcha iron was estimated at 2,380 tons in the year.

It must be remembered, however, that the quality of the Beerbhoom Iron, owing to the processes adopted and to its being smelted entirely with charcoal, is essentially different from that of English Iron, and though not so valuable for the purposes above alluded to, such as Railway works, is more so for other work, in which toughness and malleability combined with softness are required. – Report of the Examination of the

District in the Damoodah Valley and Beerbhoom, Producing Iron-ore. Extracts from "Selections from The Records of The Bengal Government", No. VIII By T. Oldham, F.R.S., Superintendent of the Geological Survey of India

Three years later, Messrs. Mackey and Company of Calcutta started the Birbhoom Iron Works Company, and established iron works in Birbhoom, in 1855, fixing on Mahammadbazar as a site for their factories and furnaces, starting the development of iron industry with the introduction of Railways into India.

Oldham submitted his report of the examination of the districts in the Damoodah valley and Beerbhoom, producing iron ore; a considerable portion of which was devoted to an inquiry as to the best line for the rail from Burdwan to the Ganges, and he was decidedly opposed to the line last chosen, viz . that from Burdwan to Rajmahal and along the banks of the Ganges to Mirzapore.

"I am informed that the present intention of the Company is to make the terminus of the colliery line on the lands of Buckternagur, near to the Dak Bungalow, and only a short distance to the South and East of Munglepore. Now I believe the only possible advantage which such a position can claim is, (the rather dubious one for a colliery branch), that it is altogether outside of the present; workings for coal; and -that therefore it directly affords no greater facilities or advantages to one proprietor than to another."

He observed that the adoption of the present proposed position for the terminus would inevitably tend to the development of those collieries only, which were at present most favourably placed, and to the entire abandonment of the others, which, though equally good as regards the quality and cost of the coal, would by their position be deprived of the advantages of the improved system of communication.

The importance of a line of Railway being carried to the western extremity of this coal district, as bearing on the possibility of economizing its valuable deposits of Ironstone, we may add here that could such a line of Railroad be continued towards the North-west so as to open up the markets of that Important portion of the country, the value of this coal field would be most materially enhanced.

Oldham stated that it would not only be fair and just but indispensable, that the rail should be continued through the coal field of the Damoodah to tap further coal fields , and not stop short of It at the present proposed terminus. This extension would involve an addition of less than 20 miles, in a country very favourable for such works, and where a single line, amply sufficient for all the traffic, could be made for £6,000 per mile, or the 20 miles for £120,000, thus requiring a traffic producing only £6,000 per annum to pay 5 per cent He believed that, for many years at least, the roadside traffic would be very small and little regard needed be had to small existing towns or marts on the lme, provided the general direction be favourable, it being more certain that the Railway would Itself develop its own traffic, and give rise to towns, and marts in favourable places, than that It would

towns, and marts in favourable places, than that It would derive much benefit from small existing ones. At the same time, the large and established marts of the country must form one great source of traffic and revenue to the line.

Oldham was of the view that on public grounds, independently of the question of profit, it was desirable that as rapid a communication as possible should be established between the great seats of power in the country, and that, therefore, the shortest possible line, consistent with other considerations, should be adopted. It was also desirable that the line should not command only a one-side traffic.

In laying out any line of Railway, with a view to obtaining a return or profit on the outlay, it is desirable, as far as possible, to avoid competing with other and cheaper modes of conveyance, and this more especially where the goods traffic will be the most Important.

He was convinced that that a better line for the proposed railroad could be obtained than the Rajmahal line, which was being contemplated. In favour of the direct lines, there were the greatly diminished length and some other points; in favour of the Ganges valley line, the extremely favourable gradients and the certain amount of traffic which the Railroad was likely to meet at Rajmahal.

His proposal was to carry the rail at once by a direct line to Patna, and for this purpose to extend the present Colliery line, sixty miles farther along the left bank of the Barakur, to a point about ten miles east of the excellent coal field of Curhurbaree, and then to move up, first in a northerly, and then, in a north westerly direction, to Patna.

Mr. Oldham was able to speak from personal inspection only of a part of the line now proposed, namely, "as far as some little distance north and west of Curhurbaree." To this point, the country was exceedingly favourable, and a nearly direct line might be had, on which gradients not exceeding 1 in 300 or 400 could readily be obtained. From Curhurbaree northward, for some miles, there was a continuous plain, followed by a hilly region some miles in extent, not yet explored, after which, the country from Guidore to Patna was a complete level.

He remarked that in all the propositions which had been hitherto made for a direct line, Benares or Mirzapore had been the great terminus selected and the line has been accordingly arranged as to meet the Ganges at or near those places.

He conceived, however, that the great traffic centering in the large and populous mart lower on the Ganges was sufficiently important to demand attention. The first of these so great marts in ascending the river was undoubtedly Patna, a town of some 350,000 inhabitants and one of the largest and most important markets in Bengal.

In fact, this town was considered of such importance, that under the former proposition of a direct line of Benares, it was also contemplated to make a branch to Patna, to command its traffic. A Railroad carried direct to Patna, would

also intercept the large amount of traffic of the Ganges River.

The most remarkable feature in the line sketched by Mr. Oldham was its shortness; from the terminus of the Colliery line to Patna, there were only about 200 miles to construct, whereas the distance from Burdwan to Patna, by way of Rajmahal, and the valley of the Ganges was around 300 miles.

A reduction of 100 miles in distance along with substantial saving in time & money could be achieved by direct route from Colliery line to Patna instead of following Gangetic route via Rajmahal.

There would be a saving in the length of the line of one-fifth of the entire distance at present proposed, representing a capital of £1,000,000 sterling, an annual return at 5 per cent of £50,000 and an expenditure of time in its construction of nearly two years.

Another important consideration was that the extension of proposed colliery branch to Patna could be made in very nearly the same time which would be required to construct the line to the Ganges at Rajmahal, while it was certain that any goods traffic which it could be expected to meet on its continuation from Rajmahal to Patna, it would meet at the latter place. The line would be quite profitable as it would serve the collieries and command at least four fifth of Gangetic traffic.

The line would avoid a dangerous competition with the established and economical communication by the Ganges for a distance of nearly 100 miles, while it offered to the larger portion of the traffic passing along that River, a very much greater rapidity of conveyance to market.

Outlining the advantages of the direct line, Oldham stated that throughout nine-tenths of its course it was known to afford most excellent gradients and for the remaining tenth, it was believed to do so also. Throughout its course, there was not a single large River to be crossed, while the line to Rajmahal had to cross the Adji, the More, the Dwarka and the Brahminy. The Direct route provided every facility for construction in the proximity of the best materials, stone, brick-clay, wood, etc. The line would open a district adjoining to which were known to occur a valuable coal field and metallic mines, he explained.

I believe that these considerations are more than sufficient to justify the preliminary examination of the country. And in conducting such an investigation it might be prudent to bear in mind that heavy traffic trains are daily, nay almost hourly hauled up inclines of 1 in 90 and 1 in 100, at home, without aid from second engines, and without any great loss of power, and carefully to consider whether any slight disadvantage arising from a short incline of steeper gradients would not be very much more than counterbalanced by the great and additional length of line requisite to obtain more favorable inclines, and the consequently greater cost of working afterwards.

He very earnestly advocated the adoption of a single line, and he cited two European examples of such lines: the single line between Amsterdam and Rotterdam & single line in Belgium. The chief argument for a single line lied in its superior

cheapness. Mr. Oldham estimated it at 6,000/- a mile, whereas the cost of a line, with embankments and bridges for a double line of rail, but with one line of permanent way, he estimated at 10 or 11,000/- a mile.

"If some of the great manufacturing districts of Europe can fully and most satisfactorily accommodate the entire of their traffic on single lines of Railway, the more agricultural country of India would find such amply sufficient for all the traffic that could, by any possibility, be expected for years to come."

It was thought that, for many many years to come, a single line would be all that could be possibly needed in this country. If goods could reach Delhi from Calcutta in forty-eight hours, all the requirements of this presidency would be fully satisfied.

"The vital importance of the extension of facilities for communication in this country, whether considered with reference to the possibility of developing its great industrial resources; economizing its valuable mineral wealth; of elevating its population; or of enabling an extension of the beneficial influence which invariably and unavoidably 'bring' from the presence of Europeans, and from the free intercourse of persons from different districts; an importance which becomes daily more obvious and which every hour's experience impresses more forcibly on every thinking mind, will be a sufficient reason for my having entered with some detail, into the facts connected with what appears to me a great improvement in the line of Railway at present contemplated." - **Report of Thomas Oldham, Superintendent of Geological Survey, Calcutta, 18th May 1852.**

He concluded his report by stating that the direction now suggested for a line of Railroad had not been previously proposed or examined. He was thoroughly convinced that the superior advantages which, if practicable, it would possess were more than amply sufficient to justify a preliminary examination of the country.

'Friend of India' commenting on Oldham's report said that when Railway was being introduced, the country was expected to be entirely dependent for the receipt of rapid intelligence, as well as for the conveyance of goods and passengers, on the rail; letters and despatches could come no faster than the train. But the Court of Directors had since that time ordered a line of telegraph was to be laid down throughout India, and they would become the great channel of communication.

We could, therefore, afford to put up with a simpler, cheaper, and less elaborate system of railways, than when the speed with which information was conveyed in this empire was to depend on the rapidity and excellence of the rail. - **Friend of India, Oct. 14, 1852.**

Report of Major Baker, Consulting Engineer to the Govt. of India

In March, 1851, on Colonel Kennedy's departure, Major W. Erskine Baker, of the late Bengal Engineers, was appointed Consulting Engineer to the Government of India, and

continued to hold that post till November, 1857; and it was from Major Baker's judgment, unwearied industry, and tact, that the cumbrous machinery unavoidably necessary for the management of a guaranteed railway, was at first set in motion. – **Edward Davidson, Railway in India.**

Major Baker, the consulting engineer after inspecting the country from Burdwan to near Colgong, on the Ganges, and from Raneegunge to the confluence of the Barrakur and Damooda submitted his report on 19th February 1852 for consideration of Governor General to ascertain the facilities for future extension of the Railway.

Extension of the Colliery Branch – Baker found that there was no important physical obstacle to the extension of the colliery branch from Raneegunge towards the Barrakur coal-fields. It would cross two inconsiderable streams, the Noonea, and the Talkooreeka Jour, and many nameless ravines, but no extensive works would be required, and rock foundations would be generally met with.

He recommended that line for the first trial section, after passing Raneegunge, should follow the left bank of the Noonea for about 3 miles before crossing that river. It would thence pass obliquely into the valley of the Damooda, and by keeping parallel with its left bank, at a distance of a quarter to half a mile, it would avoid the broken and undulating ground.

Baker estimated that the work per mile, adapted in all respects for a single track, would not exceed in quantity that on the Raneegunge line, and on a moderate contract would not cost more than 55,000 Rupees per mile, exclusive of rolling stock.

The expediency of this extension appeared to depend entirely on the character of the Barrakur coal, which unless of superior quality, could not compete on equal terms with the inexhaustible supplies of Raneegunge and Mungulpore, situated 23 miles nearer the market.

Extension of Trunk Line, The Gangetic Line – The rocky range of hills which terminated at Rajmehal and deflected the Ganges for upwards of 300 miles from its proper South-easterly direction, necessarily prescribed in a great measure the course of a Railway through the valley of that river. While on the one hand, it fixed a limit within which the works would be secure from the encroachments of the stream, on the other, it caused a considerable detour from the direct line, and entailed many difficulties, and consequent increased expenditure.

There were two courses by which a Railway might be taken to avoid the confluent inundation of the hills and the Ganges, in some measure. First option was to follow the elevated margin of the river on an embankment raised above the level of the highest floods, and with copious openings for the flux and reflux of the inundation. This line, which would, be an extension of the present one from Muggra onwards, might be carried nearly on a level, would perhaps be the less expensive in its first construction, and would afford frequent

opportunities of communication with the river traffic. But the foundations of the large masonry works would be insecure, and the line itself would be liable to interruption by the encroachments of the river, whose changes were too capricious to be calculated upon with any certainty.

Baker suggested the alternative route skirting the hills, which would separate from the present one at a point West of Burdwan, beyond the inundations of the Damooda, and of its offshoot, the Banka Nulla. It would then proceed in a Northerly direction, crossing the Adjai near Soopore, and the Mor about 10 miles East of Soory (Beerbhoom).

It would thence turn slightly to the Eastward, and passing East of Nulhattee, would skirt the base of the hilly tract as far as Colgong, on such a level as would be above the highest inundation, and at a safe distance from the possible encroachments of the Ganges.

A contour line exactly fulfilling these conditions would be a very circuitous one, on account of the projecting ridges and intervening valleys, but he was satisfied, from personal examination, that a line might be found, by which good curves and gradients might be secured, without any extraordinary expense, for embankments and rock cuttings.

The route would pass three miles West of Rajmehal, which was of the less consequence, as that town was no longer accessible by steamers in the dry weather. The present proximity of the navigable channel of the Ganges to Oodwa Nulla, indicated that point as a favorable one for the first communication between the Railway and the river. A second might be established at Colgong.

He suggested that the goods stations on the riverbank should be of a temporary description and should be constructed of such materials as could be easily transported from one place to another to suit the frequent changes of the navigable stream.

The distance between Howrah and Rajmehal (or Oodwa Nulla) would be increased by about 18 miles by the alternative route, but the length of New Railway required to connect the two places would be 35 miles less than by the first route.

Baker was confident that a ruling gradient of 1 in 1,000 would be attainable without entailing heavy works. The chief source of expenditure would be the construction of the bridges required over numerous rivers and water-courses. The Rivers Adjai, Mor, Dwarka, Braminee, Banslee and Goomanee must be crossed on alluvial soil where their channels, though well-defined, were liable to enlargement by the erosion of the banks.

He calculated that a continuous solid platform of brickwork, of depth and strength sufficient to resist the floods, and of width to carry super structure for a double track, might be laid across the Rivers Adjai, Mor etc for 500 Rupees per yard forward, whereas a piled foundation, though not affording so good a security against the scouring action of the current, would be greatly more expensive.

The length of the Rajmahal (or Oodwa Nulla) branch would be about 120 miles, nearly the same as that of the line now under contract, and the cost of the former ought certainly not to exceed that of the latter. The earthwork on the Rajmahal line would be less in quantity, but in consideration of probable rock-cutting, might be reckoned at an equal cost. The brick, iron, and timberwork in bridges, culverts and flood openings, would be lighter on the new line, notwithstanding the greater magnitude, and more formidable character of the rivers.

It cannot be doubted that the more valuable portion of the river traffic, which now finds its way through the winding creeks of the Sunderbunds, or the shallow channels of the Nuddea Rivers, would preferably be conveyed by the more secure and expeditious means afforded by a Railway.

The Rajmahal Railway would chiefly depend for its traffic on the Ganges, but it might fairly be expected that yearly increasing returns would be derived from the intermediate trade. The mineral resources of the country, which were considerable in coal, iron, and other metals, would be rapidly developed by the increased facilities of transport.

He concluded his report with the remarks that the sooner the Rajmahal section was completed, the sooner might we look for adequate returns on the capital now being invested in the 'experimental' section, which by itself might probably not be remunerative. – **Report of W.E. Baker, Major, Consulting Engineer to Govt. of India, Railway Department, dated 19th Feb 1852.**

Sanction of East Indian Company

The Court of directors of the East India Company informed EIR that they had signified to the Government of India their determination to commit the execution of the intended line to the East Indian, and to authorise an increase under a guarantee of interest, at the rate of four and a -half per cent. per annum for the purpose, the terms and conditions contained in the contract of the 17th of August, 1849, being also made applicable to the new section. – **Letter from James C. Melvill, Secretary, East India House, to EIR, Oct 15, 1852.**

Ratification of proposal

Consequent to Court's communication, East Indian Railway Company called a shareholders' meeting on 2nd November 1852 to ratify the above proposal.

The Chairman informed the shareholders that it would be highly advantageous for this railway company to accept the proposal of the East India Company, and the acceptance of which while profitable to themselves, would largely benefit the public interests of India.

He stated that the Company had very nearly finished the first portion of the first section entrusted to their charge; and the East India Company and the Indian authorities had retained the power of fixing the terminus of the first section and defining the direction which any line should take from that terminus.

I have further to acquaint you that the East India Company's

originally projected line to the north-western provinces of India; and though this second section was not precisely the line marked out in the first place, it was the line which the authorities in India deemed the best for the general public interests; and this was the line the railway company were bound to accept if it undertook any line at all." – EIR AGM, 2nd November 1852.

Chairman explained that the terms offered to the railway were the same as they had obtained in relation to the first section, except for a slight alteration in the rate of interest. In every respect, as opening a new channel of communication with the north-western provinces of India, this line must be viewed as a very important undertaking.

The amount of money which would have to be subscribed for the new section would be about 1,000,000/-; not that that sum would necessarily be all spent; but, as with the first section, it was thought expedient to take such an amount at once. He informed shareholders that if required, extraordinary capital would be sought under the authority of the Government of India, and of course in that case there would be given the same guarantee as at present, the interest, however, being slightly less.

Chairman thought that the proposed line would arrive at a point at which they might rely on obtaining a very large portion of that traffic which now went down the Ganges to Calcutta, and which would, when there was a railway, no longer be forwarded by water.

The surveys taken assured them that the line would be peculiarly easy of construction; that the gradients were extremely good; and that, for practical purposes, it would be completely what engineers designated a level.

The board proposed that the 1,000,000/- should be raised in fifty thousand shares of 20/- a share, as in the first section; and that these shares should be distributed among the shareholders in the first section, and parties would have to register their original shares, by the 18th instant. A letter would be written to each shareholder, informing him of the number of new shares he would be entitled to, and those shares appropriated would be left to be dealt with by the directors as they might find most convenient. The shares would be offered in this way, one new on everyone old share at par.

A resolution was moved for approval of the terms of the contract proposed by the East Indian, in their letter of the 15th October, 1852, and that the meeting authorised the directors of the railway company to take all the necessary-steps for carrying out the arrangement.

Sanctioning of Capital

The Court of Directors of the East India Company sanctioned the guarantee of four and a -half per cent interest on an additional million sterling to this railway, to enable It to proceed with the line to Rajmahal on the Ganges.

On the first section of the line, which comprised 40 miles from Howrah, opposite Calcutta, to Pandooah, and on the

branch of 79 miles to the Raneegeunge collieries, the company had already expended the first million guaranteed by the East India House, and the completion of these sections, according to the admission made by the directors in one of their recent reports, would require a further sum of 250,000/-. The company would be left with only 750,000/-, of the second guaranteed million, to complete the entire line to Rajmahal, as well as find the rolling-stock.

Till the line struck the river at Rajmahal it was comparatively useless, as none of the objects for which it was constructed would be attained. It thus appeared probable that the East India House might be called upon to exercise its liberality again by guaranteeing a further sum, and thus enabling the company to carry their line to the river.

In answer to another question, it was stated that the additional sum which would be required to complete the first section, was estimated at between 250,000/ and 300,000/- . **-The Railway Times, 1852.**

Upper Indian Railway

A company named 'The Upper India Railway Company' was formed in London for the purpose of introducing railways into Upper India. The first section, about 130 miles in length, was to commence at Allahabad, at the junction of the Ganges and Jumna, and would terminate at Cawnpore.

Advertisements for the company and notices for calling subscription of shares started appearing prominently in Newspapers in India and England much to the consternation of the promoters of EIR who felt such a line, in their hands a natural feeder, might in other hands be converted into an antagonistic system to them. They believed that there was energy and talent enough in the board to carry out this scheme, without the aid of any interlopers.

Mr. Adams, one of the proprietors of the EIR, raised the issue of an advertisement in the newspapers, of a new scheme in India, by which it was proposed to occupy a very important district belonging, as he contended, to this company, viz., from Calcutta to the north western provinces of India, important cities of Allahabad and Cawnpore forming a distinct portion of their line. The advertisement he referred to called on the public for subscriptions for a line to make that very section. **- EIR AGM, 2nd November 1852.**

The Chairman replied that the section which was proposed to be made by a new company did form a part of the original proposal of the East Indian, and there could be little doubt that it was intended from the first to have the line to the north-western provinces of India constructed entirely through the medium of this company. This particular section had indeed been long ago surveyed by the company's officers, and he believed it had been repeatedly recognised by the authorities as a distinct portion of this company's scheme.

The directors were decidedly of opinion that they ought to have the making of that line, and they would leave nothing

undone to secure the interests of the proprietors. **- The Railway Times, 1852.**

Its detractors claimed, it would appear that the East Indian, a most respectable undertaking in its own place, and one already furnished with quite enough of work to keep itself within its own doors for a good many years to come, had suddenly bethought itself of some unacknowledged birth right by which it claimed the whole of Hindostan as a possession.

The proposal of Upper India Company to construct a line from Allahabad towards the Indus was discussed in the meeting of Court of Directors of East India Company. There were, however, certain members of the court who uniformly advocated the making of all Indian railroads by the Indian Government itself. This obstacle was thrown in the way of the Madras some time back, the application of which was rejected, and the principle of Government railways affirmed by 13 votes against 4.

Upon this occasion, however, coming before the Board of Control, that authority, fully sensible of the abuses to be expected from placing the railway system of India in the hands of Government officials, and of the jobbery and general irregularity likely to ensue, at once condemned the proposal, and thus, on its being referred back to the India-house, the proposals of the Madras were unanimously adopted, and the guarantee conceded.

Dispatch from Court

Directors of the East India Company sent a dispatch to the Governor General on 21st December 1852 soliciting the opinion of Governor-General on commencement of Railway in Upper Provinces.

They communicated their desire to immediately commence construction of Railway in the upper provinces, so that India might, without unnecessary loss of time, possess the immense advantage of a regular and well-devised system of railway communication.

The Directors requested Governor General to examine the remarks made by Major Kennedy, late consulting engineer, in his report to Indian government, dated 29th January 1851.

They also directed his attention to the remark of the Governor General's minute, dated 11th April 1851.

"With respect to the policy and expediency, as well as the practicability of undertaking a general main line, I should hope that whatever may have been past difficulties, there will hereafter be nothing to prevent the extension of railways through upper India by the company on easier terms than those which govern their experimental lines."

The Court requested Governor General council to bestow their careful and early consideration upon this most important subject, and suggest the course most expedient to be adopted, with a view to accelerate the extension of system of railway communication in India, and particularly on the

line on between Calcutta and the north-western frontier.

The Directors also desired to know whether it would be desirable to construct Railway by Government simultaneously the construction of separate parts of it; and whether for that purpose it would be advisable to enter several distinct contracts with different companies of British capitalists, or in any other manner. – **Despatch from Directors of the East India Company to the Governor General. Financial Department (Railway), 21st December (No. 67) 1852. – Signed by J. W. Hogg, R. Ellice.**

Custom House at the Howrah Terminus of The Railway

The Hurkaru reported that the consulting engineer of Government had submitted a question regarding the allotment of the ground purchased for the railway terminus at Howrah. He argued that the establishment of railways in the interior would bring down the produce of the country by the trains, and he therefore suggested that it would not only facilitate exportation, but prove a great saving to the merchants, if the goods could be at once shipped from Howrah, and he inquired whether Government was desirous of securing any site for a custom-house.

Vessels from England with a large portion of their cargo, intended for marts in the North-west Provinces, would find it more convenient to land their consignments at Howrah than on the Calcutta side of the river, and that the erection of a branch customhouse would hence become a matter of obvious and absolute necessity.

It was understood that it was partly with a view to this object, as well as to the expansion of traffic, as the railroad extended from station to station, in the upper portion of this presidency, that so large an area had been secured at the terminus, beyond the present exigencies of the rail.

"This premature agitation of the question appears the less necessary because the ground for the new customhouse is already in possession of the railway company, and there is apparently no intention to alienate it for any other purpose. The idea appears simply ludicrous of asking the Chamber of Commerce, whether a customhouse at Howrah would be advisable when traffic, to the extent of crores of rupees, was likely to pass annually from thence to Mirzapore, and back again." – **Friend of India, Nov. 18, 1852.**

The Criticism

Englishman in April 1852 commented that whatever caution might have been required at the outset of the undertaking, *now that we were fairly embarked in it, our movements ought to be marked by more promptitude and determination.*

It considered the interference of the East-India Company with the railroad as a public misfortune. The Paper commented that had it been left to the untrammelled efforts of a body of proprietors, it might have been finished and in active operation by this time.

Under the retarding influence of the East India Company, few of us, we suspect, will live to travel on it even to

Mirzapore, and to reach Delhi will be reserved for another generation. – **Englishman. April 9, 1852.**

'Friend of India' reported that East Indian Railway company, being now assured of its five percent, appeared to have settled down on its lees, to borrow the emphatic language of Scripture.

"They appear to be generally asleep, and only occasionally awake; and unless this can be secured, the experiment of laying down a rail by means of a company must be pronounced a failure."

It suggested that the Committee of Directors must be reorganized, or it would not answer as the instrument for the completion of the great national undertaking of the rail in India. For the construction of railways at this presidency, country required a body with more spirit and earnestness, and less encumbered with factious propensities. – **Friend of India, Oct. 14, 1852.**

The Secretary of East Indian Railway informed the shareholders in the half-yearly meeting held on the 24th August, 1852 that the works between Howrah and the Ranegunge Collieries continued to progress satisfactorily.

The surveys between Pundoah and Rajmahal, had been carried to such an extent as to enable Mr. Turnbull, the resident engineer, to report upon the general features of the line, which were highly favorable to the construction of a railway.

The Chairman said, he believed the agreement with the East India Company would bring the further sum required to complete the railway under the same guarantee. The East-India Company, having 577,000/- a large sum in hand, were not desirous of increasing the amount. The last call, at their request, was delayed as long as possible.

The company could not complete 120 miles of railway without further capital. It was probable that a further sum might be required to complete the railway, amounting to about 250,000/- which was alluded to in the report, and would be in addition to the present capital of 1,000,000/-. He did not expect that any portion of the line would be opened before the year 1854; and when it was considered that the estimated cost of the line was under 10,000/- per mile, it would not be surprising if that sum were exceeded, and in that case, they would require above 1,200,000/-, being at least 200,000/- more than the present capital. – **Half yearly meeting EIR, 24th August, 1852.**

The East-Indian Railway Company received notice on the 15th of October from the India Company, that a guarantee of 4-1/2 percent would be accorded them on the new sum of 1,000,000/- to be raised to construct an extension line to Rajmahal, the other conditions being the same as those of their existing grant.

"This 1,000,000/ will be altogether independent of any further guaranteed capital that may be required for the completion of the original line from Calcutta to the

Ranegunge collieries. The option of subscribing at par will be given to the proprietors of the old shares." – **Allen's mail 1852.**

Harassment of Natives

The Englishman published an account of an affair which had created a great sensation on the line of railway. A paddle boat belonging to one of the contractors, anchored near a ghaut, where the females of a baboo's family were bathing. The baboo ordered the men to move on, and on their refusal, the villagers went on board the boat, and beat the men severely.

The latter complained to the head assistant, stating that the boat had been broken to pieces, and ten of the boatmen imprisoned.

The assistant went with a number of Europeans and a body of coolies, to the baboo's house, which was broken open, and a search made for the prisoners. Of course, they were not discovered, and the coolies who accompanied the Europeans did a great deal of mischief to the furniture.

The latter had been committed to the Supreme Court for trial. – **Englishman, April 29, 1852.**

Diversion at Chandernagore

The Citizen mentioned that the Railway Company and the government had found it necessary to run the line of embankment outside the French settlement of Chandernagore.

The authorities of that place were determined not to part with an inch of the territory of the republic one and indivisible and had demanded some preposterous sum for the concession. It was not, however, the pecuniary difficulty which broke off the negotiation, as the Citizen appears to imagine, for the expense of retracing their steps will even now fall heavily upon, the Company, and the difference between the cost now incurred and submission to the demand would not have been ruinous.

The French commissioners demanded in return for a few acres of land that they should receive jurisdiction over half the river in front of their town, a request to which the Governor-General courteously but preemptorily refused to accede.

The whole question would one day form a curious episode in the History of Indian Railways, the paper stated. – **Friend of India 1852.**

'Hurkaru' reported that the French authorities of Chandernagore had overreached themselves not a little in the negotiation respecting the sale of ground to the Railway Company. By asking too much, they had caused the rail to deviate a little from the direct line, avoiding Chandernagore altogether.

The rail would have increased the population and raised the price of land and houses to an extent that would have quite changed the character of the place and would have very soon quadrupled the public revenue.

"But everything at the little French settlement is little. The authorities have not merely little salaries, but little notions." – **Hurkaru, September 7, 1852.**

Progress of Work: 1852

Without, however, awaiting the completion of the survey or sections, tenders were invited in Calcutta for the construction of the line from Calcutta to Pundooah, and seven were sent in.

A length of 25 miles from Howrah to Hooghly was given to Messrs. Hunt, Bray, and Elmsley, of London, and a further distance of 10 miles to Messrs. Burn and Co., of Calcutta. Very shortly after this date, the Court of Directors, on the recommendation of Lord Dalhousie, decided that the railway should be carried onwards from Pundooah to Ranegunge, and the further lengths were let in the following way :

Messrs. Hunt, Bray, and Elmsley ...	26-1/2 miles	Howrah to Hooghly .
Messrs. Burn and Co.	10 miles	Hooghly to Pundooah.
Messrs. Remfrey (first let to Mr. Daniel)	5 miles	Pundooah to Bainchee
Mr. Daniel	11 miles	Bainchee to Mundeepoohur.
Mr. Ryan	10 miles	to Mymaree.
Messrs. Burn and Co.	22 miles	to Burdwan .
Messrs. Bray and Emsley	36-1/2 miles	Coolool to Ranegunge.

'Friend of India' had reported on 4th December 1851 that the contracts for the line from Pandooah to the collieries, 61 miles, were confirmed at the close of last week.

It was a question of time versus money, and time carried the day. In this country it has always been the practice, from the days of Sullivan to the present year, to sacrifice time in order to save money; we have now for the first time, and not unwisely, expended money to save time. – **Friend of India, Dec. 4, 1851.**

Giving the progress of work at the end of 1851, it said that in the first section of about 40 miles from Howrah to Pandooa, the embankment had been thrown up, with the exception of some four or five miles, and it was now to be left for the next rains to settle. Meanwhile, the contractors were busy in burning their ballast, and not a day passed without the cheerful sight of boats laden with rails and sleepers, and redolent of creosote, passing up the river.

Mr. Turnbull, the chief engineer of the railway company, having assisted in settling the contracts for the second section of the line, had now proceeded with a competent staff to survey the line of road from the neighbourhood of Burdwan to Rajmahal. – **Friend of India, Dec. 4, 1851.**

Lushington, the Railway Commissioner for land acquisition, stated in his report to Bengal Government that by April 1852, i.e., roughly within thirteen months since the first land transfer was made, all the lands indented for by the Railway Company in the first section of the line from Howrah to Pandua was made over to them, except for some isolated patches here and there. – **Lushington to Grant, 14 April 1852, Bengal Railway Cons., 29 April 1852, No. 26, Range 163, Vol. XVI**

Allen's mail reported that the ground at Howrah for the railway terminus had at last been finally secured by Government, after two years' negotiation – **Allen's mail 1852**.

A correspondent of Englishman had filed the report on progress of work in October 1852 after travelling through the entire section:

The first portion of the railroad from Howrah upwards, was being made under contract by Messrs Emseley. He found that the embankments on this part were all completed in the town of Howrah, which was now full of fallen trees and huts. Some of the ballasting was now being laid down, and in many places the permanent way, but the bridge over the Bally Khaul was progressing very slowly.

The next part of the line upwards was under the contractors, Messrs. Burn and Co., the resident engineer, being Mr. Goldsmith, and Mr. Henry Burrows was the superintendent on the part of Messrs. Burn and Co.

In this division the whole of the embankments were completed, the slopes sodded, the ballast being laid on, and the permanent way or rails being fixed. The heaviest piece of work in this division was the bridge over the Sursuttee Nullah, which was progressing at a very rapid rate.

Before the rainy season, the works were carried on both day and night to secure the piers against the danger apprehended from heavy floods, and also to have them a sufficient height to allow of the work going on without intermission during the rains. The consequence of all this energy and activity was that the bridge was nearly completed, the correspondent reported.

The whole of the first line, forty miles from Howrah to Pandoah was expected to be finished by next year, correspondent reported.

A locomotive engineer was engaged in England on a salary of 800/- Sterling a year and was expected out immediately. A person in this country, well qualified to hold the situation, was recommended to fill the post, but the advertisement in England appeared for so short a time, that before any communication could be made from this country, the situation was given away.

The next portion of the line, from Pandoah to the collieries, was eighty-four miles by the Grand Trunk Road, but it would be seen that the railroad had gone in a more direct line, for it was six or seven less than the present road. Twelve miles of this portion were under the contractors, Messrs. Jackson and Daniels, and the next eleven miles under Mr. Ryan. There was no very heavy work on this line, and no particular remarks to make respecting it, except that the embankments were not yet completed.

Messrs. Burn and Co. had the next twenty-two miles, running through the station of Burdwan. Mr. Evans was the resident engineer on this division, and Mr. Nelson the superintendent on the part of Messrs. Burn and Co. This division contained the heaviest brick-work on the whole line,

Messrs. Burn and Co. had the next twenty-two miles, running through the station of Burdwan. Mr. Evans was the resident engineer on this division, and Mr. Nelson the superintendent on the part of Messrs. Burn and Co. This division contained the heaviest brick-work on the whole line, there being a continuous viaduct of brick-work, nearly a mile in length, twelve feet high, and thirty feet broad; it would take about thirty millions of bricks to construct this great work.

This viaduct was rendered necessary by the lowness of the land in that spot, it being subject to heavy inundations of the river Damoodah, which, it was feared, if the viaduct was not made, would cause great injury to the railroad.

This would be a most splendid piece of work when completed, there being nothing like it on the whole line.

The embankments in these twenty-two miles were completed, as well as all the level crossings; these level crossings were the village roads which would have to cross the railroad, and the approaches to which were to be for every foot in height, thirty feet in length; but the approaches of the Grand Trunk Road were to be one foot in sixty, being an inclination of double that of the village roads.

The level crossings leading over the railway, and by which the country traffic and people were to pass, were to be closed by gates, to be opened at stated periods under the direction of native overseers.

The last division of the road, thirty-five miles was under Messrs. Hunt, Bray, and Emseley. The embankments on this part, were not wholly completed, but a large quantity of ballast had been burnt. Initially burnt clay would be used for ballasting the track. The resident engineer on this division was Mr. Purser, and Mr. Emseley was the superintendent, on the part of Messrs. Hunt, Bray, and Emseley. – **Englishman, Oct. 8, 1852**

Large number of flood arches and culverts, as suggested by Simms and Kenendy, Consulting engineers were provided in the experimental line, being extremely vulnerable to flooding. From the returns signed by Mr. Turnbull it seemed that there were about 212 culverts of dimensions not exceeding 12 feet, and many of course much smaller, in the first 26 miles from Calcutta; and no less than 360 in the next 16 miles, many of the openings being as much as 15 feet each.

In the Raneegunge district, 36 miles in length, there were 175 culverts varying from 12 feet in span downwards. In the Burdwan division of 43 miles in length, flood arches were provided in great numbers, but the reports on record were silent regarding them. There were five large bridges in the 121 miles, over the Ballee Khall, the Sursuttee, the Mugra, and Bankah.

The stations, too, and the platforms on the experimental line were also being built on a parsimonious scale, and subsequently needed great enlargement, as the traffic started growing. Each of the stations at Serampore, Chandernagore,

The stations, too, and the platforms on the experimental line were also being built on a parsimonious scale, and subsequently needed great enlargement, as the traffic started growing. Each of the stations at Serampore, Chandernagore, Hooghly, and Burdwan was estimated in May 1852, to cost only 1868/-, and this was the sum originally sanctioned for each of them by the Government.

"This estimate must, however, have been very defective, and before they were completed in a state fit for the first experimental opening, it was found necessary to authorize an outlay of 2730/- upon each of the stations of Serampore, Chandernagore, and Hooghly; while for Burdwan, which was the station where the trains for Raneegunge and Rajmahal would be made up separately, a sum of 4481/- was eventually allowed. Subsequently, when the line was doubled, increased platform and other accommodation was provided at all the stations.

Monopoly of Bengal Coal Company

The terminus was to be in the village of Comarbazar, the property of the Bengal Coal Company.

This coal company, though somewhat disappointed in not having the terminus in the middle of one of their collieries, have yet got it on their lands, an advantage which they may turn to account by preventing all other colliery proprietors from depositing their coal, near the terminus, preparatory to its being transferred to the railway carriages.

It was to be hoped that the railway company would appropriate a large piece of ground for this purpose, and which they were empowered to do by the Act; for it was certain if they did not interfere to protect the interests of third parties, the Bengal Coal Company would allow no one to deposit coal on their land, even for half an hour. If this be not done, it would be tantamount to suppressing all the minor collieries for the benefit of one company.

The terminus was about a mile and a half distant from the trunk road, from which a common road was to be constructed at the expense of the Railway Company, by which road, coal and all other articles might be conveyed.

This common road instead of joining the grand trunk road in a central position, so that it might be available for all the collieries in the neighborhood, was carried so far to the westward that most of the small collieries, instead of availing themselves of it to convey their coal to the terminus, must still use the cutcha village roads now in existence. It could have made no difference, and would have been attended with less expense to the Railway Company to carry the common road a little further to the eastward, as no possible reason could be assigned for making the common road join the trunk road, at the spot now fixed (opposite the village of Amrosotta) except that of increasing the distance of all the minor collieries from the terminus, at least of all those who wish to avail themselves of it.

The paper suggested that the Railway Company ought to

extended to the river Barrackup, thus running nearly through the whole of the coal country. Instead of this, it stopped at a place where all the land is monopolized by the Bengal Coal Company, and one or two others for miles around. Were this done it would lead to numerous new collieries being opened, and to completely breaking up the present monopoly. For the railway would benefit no one except those near who had now got collieries in the neighborhood of the terminus.

The double line of railroad went from Howrah to about a mile above Burdwan, from which place a single line was carried on to the collieries, but land had been taken to continue the double line for seventeen miles further on; the reason for this is, that it was not yet decided from what place the road to Rajmahal is to branch off.

For this line eleven engineers had come out from England, but instead of surveying to Rajmahal only, they were going on to Mirzapore for the purpose of ascertaining what amount of capital would be required to finish it up to that place. The engineers were going to be stationed at different places on the proposed line in the month of October next. It was therefore recommended to those who go into the jungle at that period to look out for jungle fever, and to take a good stock of quinine and other requisites with them. – **Englishman, Oct. 8, 1852, Indian News 1852 page 516.**

Memorandum of Major Kennedy

Major Kennedy after his return from India at the close of 1851 submitted a report on a general system of railways for India, dated 14th September 1852, to the Honourable Court of Directors. It was a bold report, full of groundbreaking ideas and at once commanded attention and careful consideration from Government authorities.

First, he endeavoured to prove from statistics and argument that on the introduction of railways into India, the military power of the Government would be so increased that the Indian army might be reduced numerically and still retain all its present, or even possess increased efficiency. Starting from the axiom that mobility is the essential condition of offensive war; Colonel Kennedy argued that railways, which would allow of rapid concentration of an army on any given point of a frontier, would certainly permit a very large reduction of the normal strength of the force, fixed with reference to a country where months were required to traverse a distance that with the aid of railways could be accomplished in days.

This reduction of expenditure, 25% he estimated, in the military establishment of Bengal, which he maintained the construction of a railway from Calcutta to the north-west would justify, and still leave the army a much more powerful engine than it then was, would be 1,248, 384/- per annum; which at 5 per cent. would enable the East India Company to raise a capital of 24,967,680/-, or at 4 percent 31,209,6001/-, or at 3 per cent. 41,612,800/-, with which to construct railways on Government account.



A Surprise at Phulera

Somsubhra Das

We hail from a generation of railfans to whom speed doesn't matter but exoticism about the rail roads does make a difference. The fleet of good old Alcos showing off their vibrance with a gamut of liveries and puffs of smoke has always fascinated us. Likewise, the smaller gauges have always topped our priority chart on any given day of railfanning excursion. These choices however won't lead us to be labelled as 'Old School Freaks' as we have equal interest in the modern-day electrics and diesels as well but the euphoria of spotting the smaller gauge iron horses always overwhelms other spottings.

After exploring the few surviving smaller gauge network which was vociferously devoured by the demon called Mission Unigauge, my dream of covering the North-east Frontier's Meter Gauge (MG) corridor remained a hugely unfulfilled one for varying circumstances implying that I forever remained bereft of a YDM4 spotting from DLS Lumding (LMG). Thus, I had to carry this burden of despair throughout with a heavy heart until Phulera happened to me. The sequence of events that followed next reminded me of a famous quote of the well-known author Girdhar Joshi – "Things happen that way if destiny so desires. The whole

universe conspires to make it happen."

Living with this unfulfilled dream since 2011, fast track to 2021 – a good decade has passed and I was staying at Phulera for a tour of the Sambhar Salt Railway system and lensing the modern GE diesels with the double stacks. Decades ago, parts of Rajasthan under NWR used to be the hub of MG and Phulera, Jaipur, Barmer, Jodhpur, Jaisalmer amongst all other significant places were once under the famed MG network of the country as there was a time when Uttar Pradesh was connected with Karnataka through an MG network than spanned across Delhi, Madhya Pradesh, Rajasthan, Gujarat. Likewise, Phulera used to serve as an important MG hub with a MG Shed of its own. I already had in my mind to touch down upon the erstwhile MG Shed there, if it existed at all, then. On arriving Phulera the previous night, I had found out the whereabouts of the shed as every second person, surprisingly, was aware about the 'Choti Line' suggesting that the legacy of MG has outlived its existence and overpowered the iron grip of modernization.

I have always had the penchant of filming trains in the ambient lights of the dawn and dusk and that day was no



exception. After a good two hours of train spotting session early in the morning, I decided to trod the path of the MG DLS. A few hundred meters from the station complex, there stood the conspicuous signage of the 'Diesel Shed Phulera'. I was expecting nothing more than some wreckage and empty spaces with rusting machineries biding their time for getting torched as scrap. On entering the shed, I witnessed the obvious scenes of an abandoned workplace which has lost its relevance and importance. All the rooms of the office were under lock which have corroded with time barring a couple of rooms. Progressing further, I found two gentlemen discussing worldly affairs from the newspaper over a cup of tea. Before I could reach their eyes, my attention drew towards a YDM4 stabled inside the shadowy shed. My heart stopped for a moment....

"Ahoy there!" I said to myself in utter disbelief. My fingers had already reached the shutter by then but I held back my emotions by telling myself that I had already taken ride behind a Phulera (FL) YDM4 in the Marwar-Mavli MG section some years back and finding another probable FL YDM4 was exciting enough though the prospect of photographing it



without any prior permission may spoil the moment. Before approaching the men, I discovered that were already watching my move as I introduced myself and sought permission to take some photos. Joginder Sharma (name changed) was cordial enough to offer me tea and gave me a patient hearing before giving nod. With the 'Access Granted' dictum under my belt, I proceeded without wasting any further time. I was nearly running towards the YDM4 like a kid does after a lollipop when Sharmaji told me to be mindful of the metal strips jutting out. But what unfolded next was a sheer surprise.... I had to pinch myself to realize what exactly was stabled in front of me – an NFR based Lumding YDM4 standing in the hinterland of NWR in an abandoned isolated MG Shed!!!!

My eyes got moist and hands shivered in disbelief in the wake of this highly unlikely one on one with a LMG YDM4; a never to be fulfilled long-cherished dream suddenly becomes a reality. The shed logo on the loco had LUMDING inscribed in upper case and I was murmuring it in a way as if I was reading out the name of the dead from the grave headstone. Everything around me looked so surreal as I had resigned to





the fate of never been able to spot an LMG YDM4. I regained my senses after admiring what I saw and began exploring the machine which lay in utter disdain. Bird droppings and feathers had otherwise littered the locomotive wrapped in layers of dust and cobwebs. Once a bustling MG shed, the Phulera DLS has now been reduced to a mere aviary where pigeons and some other passerines have a permanent shelter. But when have these elements deterred any ferroequinologist from exploring their love! I took every detail of the loco and got them stored in my electronic device. The navy blue colour along with the yellow stripe of the YDM4 has faded just like the class of locomotive. This loco from yesteryears was standing right in front of me telling tales of its glorious past. With Sharmaji by my side, I popped up the obvious question about how this LMG kid land up here. "It has been lying here since the last 7-8 years or so...." replied the nearly sexagenarian staff who was on the verge of his superannuation in a couple of months after serving Indian Railways for 36 years. He further added that there used to be another one which was scrapped and taken away some six months back. Sharmaji mulled, "You are too late brother....".



Yes, I was late indeed but it was like 'better late than never' for me. Further enquiry on the fate of the present one revealed that it might get plinthed at Jaipur station premises or Ajmer Regional Railway Museum – a logic-defying decision as how would a loco from NFR would churn out its interesting stories in the far off NWR. However, the news of its survival, although in a plinthed state, was enough for jubilation.

Going around, the shed wore a haunted look as machineries and equipments, some imported from the UK and other countries, lay unattended on the filthy floor. The Load Works Test site had creepers growing on the tracks and there was no whiff of diesel and lubricants hanging in the air. The defunct Shed looked like a strange place with creepy feelings as silence looked to envelope everything except for the humming EMDs and the chugging Alcos making way through Phulera. Having documented nearly every aspect, I gave a vote of thanks to Sharmaji before leaving for my hotel room to recount the happenings since morning.

During the next two-days stay at Phulera, I met Sharmaji quite a few times discharging duties as we exchanged smiles



and ideas. I was all years to Sharmaji as he shared many accounts on the illustrious days of MG in these parts of the nation which witnessed the transition from steams to diesels. He was one of those few surviving railwaymen who witnessed the paradigm shift of the state railway not only from operational point of view but also from all other aspects of social development where railways portrayed a huge impact. During my next visit to Phulera in six months' time, I found Sharmaji's room sealed for obvious reasons. Post retirement, he had moved to his place in Ajmer but the LMG YDM4 had continued to stay there. In the meanwhile, the erstwhile shed had been handed over to some corporate honchos in connection with redevelopment for a different purpose. With the men who cared for the machines gone now, the fate of

the YDM4 hangs in balance as a very few will be able to relate it with its historical relevance and significance. While the purpose of shepherding the locomotive all the way from the land of the Himalayan rocks to the sands of Thar desert remained a mystery but fate, fortune or luck was somehow on my side that made me go back from Phulera with a sense of contentment and déjà vu. The #6640 LMG YDM4 had eclipsed every other spottings on that tour as it remains my special pick for lifetime....

All photographs used were provided by the author and are protected by copyright.

As per recent developments, after a report by Team TrainTrackers regarding saving this loco, a dialogue between NWR and Rail Enthusiast' Society (RES) started and happened to be successful which led to restoration of this loco. It was supposed to be plinthed at Ajmer Railway Museum as permanent outdoor exhibit.



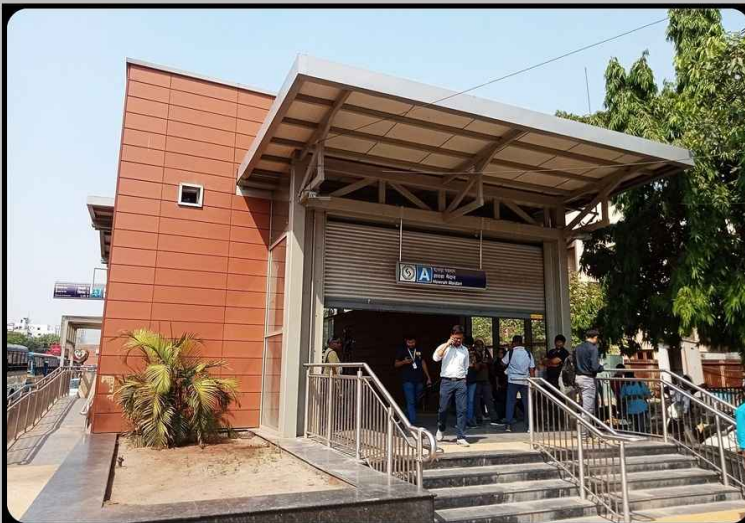


The Underwater Journey

Rudranil Roy Chowdhury

Team TrainTrackers witnessed the much-awaited journey of the East-West metro corridor under the holy Ganges River on Thursday, the 20th April 2023. India's first ever underwater metro which is the Green Line of the Kolkata metro completed its trial run with a fair number of media persons and enthusiasts as the BEML rake number 12 successfully treaded the path from Howrah Maidan to Esplanade and back. The train started from Howrah Maidan metro station and after crossing the two intermediate stations viz. Howrah Metro (corresponds to the Howrah Railway station) and Mahakaran, it reached Esplanade where it meets the under-construction Joka-Esplanade (Purple Line) alignment with the North-South (Blue Line) route.

The achievement of connecting the twin cities of Howrah and Kolkata which are separated by the river Ganges by the Green Line metro is no mean feat as the route between Howrah Metro and Mahakaran station passes 13 metres beneath the river bed through the tunnels running 32 metres below the sea level. The 520-metre-long tunnels, the Indian version of Eurostar's London-Paris corridor, have been constructed with an internal diameter of 5.55 meters and external diameters of 6.1 meters. The construction of the tunnel was completed with the help of a Tunnel-Boring Machine (TBM). The German-made TBMs named Prerna and Rachna finished the task in a record 66 days. The inner walls of the tunnel were made with high quality M50 grade, reinforced concrete



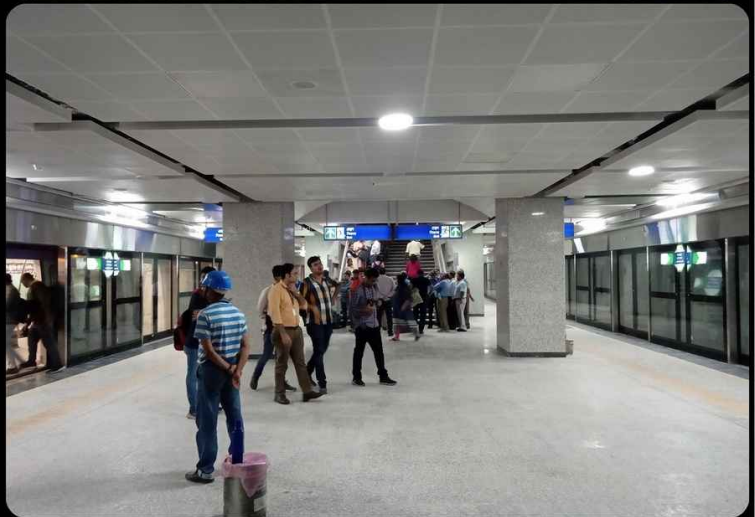
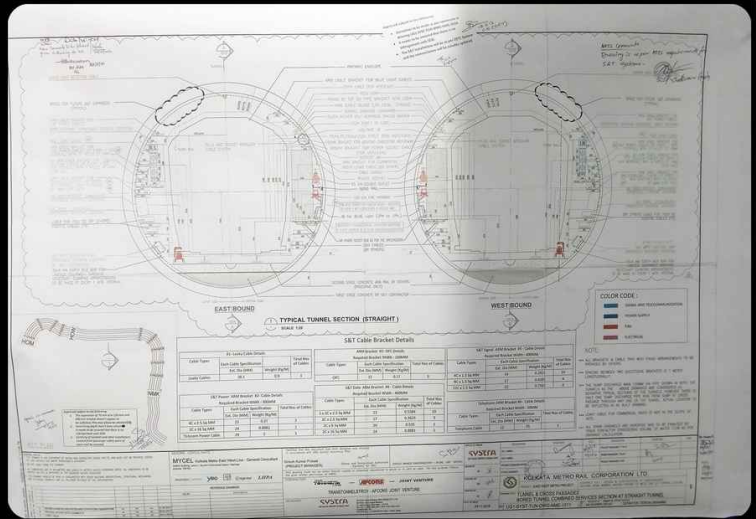
segments with a thickness of 275mm each. Six of these segments completes a circular lining of the tunnel's diameter. The segments are being pre-cast in specialised moulds imported from Korea. Several protective measures have been taken to prevent water inflow and leakages in the tunnel. Concrete mixes composed of fly ash and micro silica have been used for the segments to minimise water permeability. The segments have been sealed using a complex grouting process that fills the space between the segments and the shield of the TBMs. A two-component grout mix, including a slurry made of water, cement and bentonite and sodium silicate, has been used to fill the gaps. The liner segments are fitted with German-made neoprene and hydrophilic auxiliary gaskets, which expand when in contact with water to prevent inflow through segmental joints. Emergency evacuation shafts up to 760 metre in length have been provided inside the tunnel in accordance with the National Fire Protection Association (NFPA) guidelines. The evacuation shafts have been provided in Howrah Station in the west and Strand Road in the east for passenger safety. The construction of the tunnel from Howrah Maidan to Esplanade had to face several challenges as it passes through very congested areas along the Brabourne Road in the Burrabazar area which has several century-old buildings whose inmates had to be shifted to hotels during the period of underground work there.

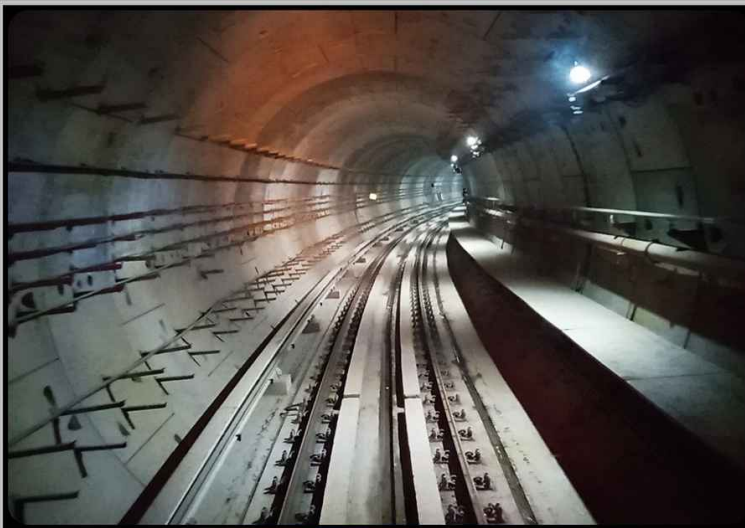
The metro connectivity between Howrah and Sealdah stations cuts down the travel time to 40 minutes as against 1.5 hours by road. As commercial services on this

truncated corridor having four stations in Esplanade, Mahakaran, Howrah Metro and Howrah Maidan is expected to begin later this year, congestion at both ends and in between these two high-end terminals is set to ease bigtime.

It was a historic occasion to say the least when we descended to the concourse area of the newly built Howrah Maidan station which encompasses a vast area for dispersal of passengers. With still a lot of last-minute constructions going on, we proceeded towards our carrier – the MR-612 train which was waiting for us at the east-bound platform below, behind the PSDs. We were guided by the GM (Administration) of KMRCL Mr. A.K. Nandy & AGM Mr. Suman Maitra who were constantly providing information on the facts & facets regarding the construction of this engineering marvel of the nation.

As we waited eagerly to entrain with the PSD doors yet to open, we took a quick round of the station area. Howrah Maidan has a single discharge platform with 5 exit points – two sets of escalators, two staircases & lifts to the concourse area. MR-613 can be seen on the west-bound platform. These two rakes were brought in the 2nd week of April this year under the watchful eyes of the authorities through a single tunnel between Esplanade & Sealdah as the second tunnel is still under construction at Bowbazar. The two rakes, one at a time, were used to pushed from rear at a speed of 5 kmph by the Battery-operated shunters as there was no third rail connectivity due to security issues. The rakes were first stationed at Esplanade and on 13th April crossed the river for the first time and reached Howrah Maidan.





Meanwhile, back in the action area, impatience was getting the better of the occasion as media and waiting guests began to get edgy until Mr. Nandy requested us to move towards the first coach of the train where only one PSD door would be opened and we had to enter the train from there only. The mood was instantly lifted as the rush and the excitement reached their peak. As we entered the train everyone tried to sprint towards the drivers cabin to get the best possible view of their first Underwater Journey. Mr. Nandy was at it again as he solicited for patience and guided us to do that one at a time in an orderly manner so that everyone can get a glimpse of this thrilling journey.

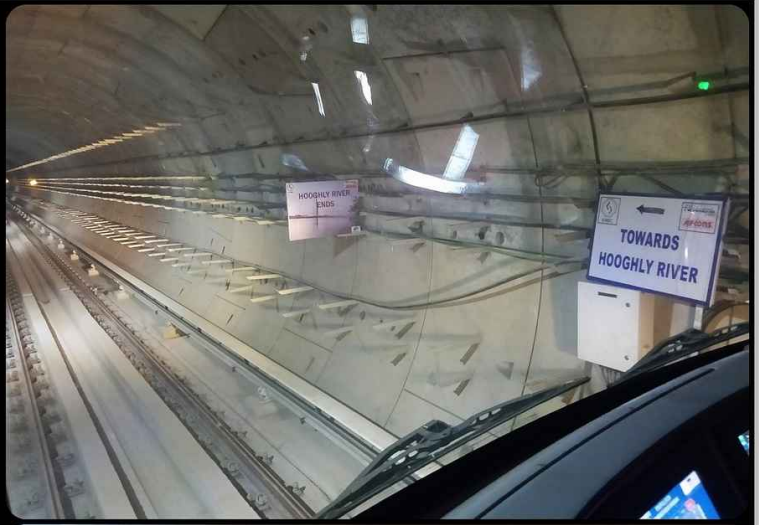
At about ten minutes, the doors were closed and the train started moving and thus our historic journey began at 12.11 pm. As Mr. Nandy kept on narrating the places we are crossing and the distance we covered, it was that moment of anxiousness which gripped our minds where we can feel the line going further downwards – 32 meters below sea level, astonishing!!! We crossed Bankim Setu, Howrah Metro station (Howrah Station premises) which happens to be the deepest underground station in the country as well, the DRM building and the train halted just before entering the underwater tunnels so that everyone can get a photo of the path ahead. After a short interlude, the train started moving again. Our 'Sarathi' of the tour Mr. Sathish, was one of the Loco Pilots who made us to plunge deep under the Ganges, was specially assigned by the rolling stock maker BEML for these series of trial runs before the final handover to the Metro authorities. He felt proud to get this

opportunity and was overwhelmed to watch the enthusiasm all around.

The train moved further and crossed the 'Hooghly River Starts' signage which marked the beginning of the 520-meter tunnel. Thus, our 'Underwater journey' finally began. Mr. Nandy announced that we were the first batch of the citizens who were crossing nation's first underwater metro tunnel. Everybody clapped and burst into cheers. It took six minutes to cross the tunnel which will actually take 45 seconds only after the metro goes into commercial services. The delay was because of the never-ending demand of stopping the train by the photographers & bloggers to which Mr. Nandy merrily obliged. Finally, we crossed the river, as the 'Hooghly River Ends' signage becomes visible. The train gained speed and crossed Mahakaran station and reached Esplanade at 12.30 pm.

We halted there for ten minutes as crew changed sides. A few people who missed the train from Howrah Maidan got a chance to board it here. Soon, our return journey began. Yet again, after crossing Mahakaran, each and everyone of us were thrilled & were eager to catch a glimpse of the underwater tunnels through windows or cabs. As and when the train entered & got out of that 520-meter stretch, numerous photos and videos were captured and requests kept pouring in to the train staffs to halt the train here.

By 1.30 pm we were back at Esplanade. Some refreshments were arranged by the KMRCL authorities as there was sweltering heatwaves over ground and station ACs were yet to get





operational. We thanked every official and staff who took the pain to give us this opportunity for a journey of a lifetime. As still there was no infrastructure for mobile connectivity underground, mobile phones started catching towers as we started getting out from the concourse. Our WhatsApp was poured in with messages from the ones who knew about our venture. The reply was short – “We are now a part of history!!!”

All photographs were taken by the author and are copyrighted by TrainTrackers.

Silver Jubilee of Hubballi Loco Shed

Sourav Dutta



Paintjob ongoing for the mega event



'Facial' make-over for this majestic giant...



All set for the D-day....



Sourav Dutta presented a memento on behalf of Team TrainTrackers to mark this auspicious occasion...



A Token of Thanks for the entire UBL Work-force

Silver Jubilee of Hubballi Loco Shed



Adorned with beautiful decoration...



The main event...



An excellent treat to watch...



Mens who works behind the scene...



The Hubballi Loco Shed Team

Celebrating Glorious



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उत्तरबंग एक्सप्रेस
উত্তরবঙ্গ এক্সপ্রেস
UTTARBANGA EXPRESS



Celebrating Glorious



(1998-2023)

उत्तरबंग एक्सप्रेस
উত্তরবঙ্গ এক্সপ্রেস
UTTARBANGA EXPRESS





Saurabh Kumar Yadav



Bittu Maity



K Gautham Karthik



K Gautham Karthik



Munna Bellamkonda



Bittu Maity



Protkarsh Kumar



Protkarsh Kumar



K Gautham Karthik



Trayambak Ojha



Aditya Bhatnagar



Aditya Bhatnagar



Saurabh Kumar Yadav



Bittu Maity

NEWS STATION

MMTS services extended upto Medchal and Umdanagar

The Multi Modal Transport System or MMTS operating in and around Hyderabad and Secunderabad got a major boost to its network and services on 8th April when the MMTS network got extended to Medchal and Umdanagar. The MMTS network now consists of 90 km. of suburban services from the existing 48 km. 20 new services have been introduced between Secunderabad to Medchal via Dayanand Nagar, Ammaguda, Cavalry Barracks, Alwal Bolarum and others. Also, another 20 services have been extended from Faluknuma to Umdanagar. This extension in MMTS services made the commute faster, safer and cheaper between the twin cities specially in the eastern parts and with Umdanagar being the nearest railway head to Rajiv Gandhi International Airport, access to the airport is thus made easier.

Transmashholding wins Vande Bharat tender, BHEL-TWL emerges as second lowest

The consortium between Russian firm Transmashholding and Indian Railways PSU RVNL emerged as the lowest bidder in the tender to supply 200 Vande Bharat trainsets to Indian Railways. \$6.5 billion deal will be signed to supply and maintain 120 rakes for 35 years by the consortium. All of these coaches will be manufactured at the Marathadwa Coach Factory, Latur. The second lowest bidder was the consortium between Kolkata based Titagarh Firemma and Nava Ratna company BHEL. These consortia will supply 80 sleeper Vande Bharat trainsets to Indian Railways under the same scheme of manufacture and maintain for 35 years.

New Town Metro Depot Construction Started For Kolkata's Orange Line

A new Metro maintenance depot or Carshed is coming up at New Town Action Area 3 to serve the Line 6 (Kavi Subhas - Airport) in future. The Orange Line or Line 6 will start operations upto City Centre 2 by end of 2025 or from the beginning of 2026. To facilitate huge footfall due to IT hubs and SEZs, this line will see metro services at 2 mins frequency at least during peak hours. Railway Vikas Nigam Limited – the agency entrusted to construct the whole project has recently started the foundation work at New Town depot. After Noapara and Joka, New Town will be third metro depot of Kolkata.

GPS-based Locks Being Used in Parcel Trains

Eastern Railway started the usage of GPS-based locks in its parcel trains. In its recent ambitious scheme of Gati-Shakti, India Post and Indian Railways joined hands to operate faster and secured parcel trains. The GPS based locks will secure parcel coaches which have been configured to be unlocked only when the train reaches its destination followed by an OTP authentication which will be required to unlock the parcel coach. This 2-step authentication process promises the stakeholders a secured transportation of their consignment.

The axe of Gauge Conversion Falls on Dhaulpur Narrow Gauge and Mathura Metre-Gauge Sections

On 31st March, 2023 the sole narrow gauge section of Rajasthan closed its train operations. In 1908, the 72.6 km. line from Dhaulpur to Sirmutta and Tantpur was opened for transporting red sandstone of the region which was officially closed and is proposed to be converted to Broad Gauge and later extended to Gangapur City. On the other hand, the metre gauge section from Mathura to Vrindavan was also closed this year. The 11 km. line saw a railbus service being operated in the holy lands of Sri Krishna. The line was built in 1889 by Bombay Baroda and Central India Railway.

Tracks Dismantled From the Pamban Bridge

With regular train services having already stopped between Mandapam to Rameswaram on the old Pamban bridge last year owing to excessive vibrations as detected by a device installed by IIT Madras which recorded abnormal vibrations and oscillations thereby raising safety concerns that led to permanent closure of the route until the new bridge comes up by its side, now the tracks from Mandapam as well as on the bridge are being uprooted and dismantled. The Pamban bridge was thrown open for public on 1914 linking Mandapam with Rameswaram in Gulf of Mannar. The bridge withstood many calamities and witnessed various historical moments. Recently, some Heritage Enthusiasts and local people suggested to leave the bridge in the present condition as a memorial of technological wonder of the bygone era.



Sanjoy Mookerjee, the author, is a retired railwayman, who is passionate about travel and heritage conservation. His books of short stories entitled 'The Needle Points North' and 'Train to Darjeeling and other Railway Tales', and railway-based novel, 'Howrah Junction' have received wide acclaim. He has also co-authored and edited several books on railway history and development in India.

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