

RAIL CANVAZ

A TrainTrackers' Initiative

January 2022



Meter-gauge Treasure Troves

Part - II

For me, as a railway enthusiast, *Howrah Junction* has everything – managing one of world's busiest railway stations, the train and passengers, a derailment, a riot, fraudulent staff, ticketless travellers, and the homeless children who frequent the platforms. All the stories are told with an authenticity only a railwayman like Sanjoy Mookerjee could provide.

Sir Mark Tully, Author, Broadcaster & former BBC Delhi Correspondent

In 2002, Rajdhani Express derailed, near Raiganj. This is the first instance where an accident provides the background for a novel involving railways. (The others are films.)

Written by a former insider, Sanjoy Mookerjee's first novel provides a fascinating account of how systems in *Howrah Junction* react to a fictionalized version of the 2002 accident.

Dr. Bibek Debroy, Economist, Author & Railway Enthusiast

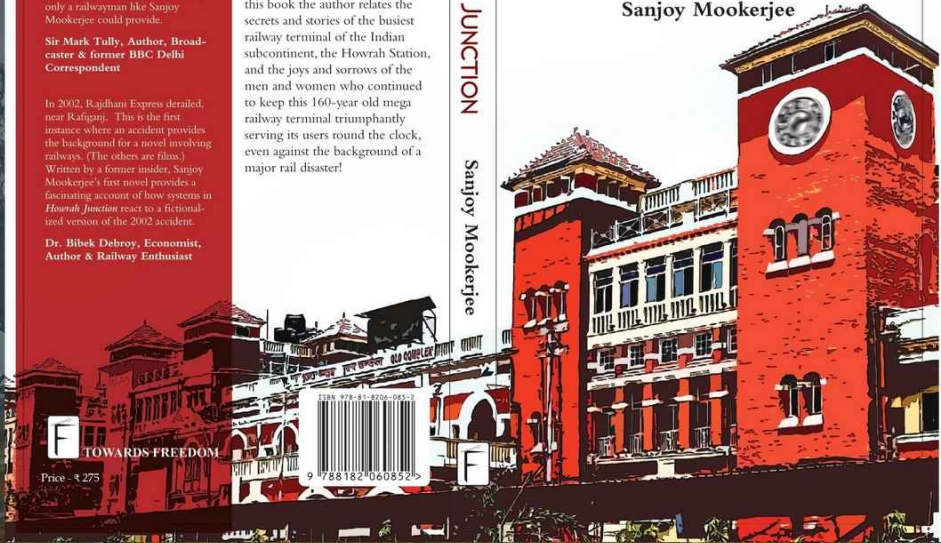
Riding on a railway train is a commonplace experience. Yet very few rail travellers ever pause to think how the silent sentinels of the Indian Railways, the station terminals where we begin and end our journeys, really function. In this book the author relates the secrets and stories of the busiest railway terminal of the Indian subcontinent, the Howrah Station, and the joys and sorrows of the men and women who continued to keep this 160-year old mega railway terminal triumphantly serving its users round the clock, even against the background of a major rail disaster!

HOWRAH JUNCTION

Sanjoy Mookerjee

HOWRAH JUNCTION

Sanjoy Mookerjee



Stories about the railways in India have been told and retold by many authors for over a century. Most have chronicled its technological and architectural history with tales woven around the railway eco-system. However, there are very few tales written from railwayman's perspective. Sanjoy Mookerjee, who opted for a career in the stellar organization due to his love of trains, celebrates his passion in this unputdownable fiction related to secrets and stories of Howrah Station – the 160 years old mega railway terminal, penned down as an insider.

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“A journey of a thousand miles begins with a single step” – Lao Tzu.

That's what resonates with us as we continue our travel to the different parts of the nation tracing our MG network that once joined many important towns. As promised, the saga of our meter gauge (MG) sojourn charts into the New Year with its second chapter crisscrossing the east-west, the north-south and the heart of the country voyaging across contrasting time periods. The cascade of treasure of MG is set in motion with **Dr. Debasish Bhattacharyya's** *A Commoner's Meter Gauge Sojourns* which portrays various MG scenes in different corners of this great nation. The author takes you to those days when the MG network had several important routes under its belt. Dr. Bhattacharyya's account sets the tone as nearly none of the MG routes escaped his ambit thereby unveiling the avid traveller in him. We are further made to time travel back to the Pre-Independence days by **Santulan Mahanta** whose *Moving in a Timeless Land* tells stories about the formative years of railways in Assam and the life-threatening challenges which were surmounted to lay the foundations for a smoother communication. The anecdotes presented in the article manifests a perfect blend of the author's penchant for diesel locomotives underlined with life stories – a perfect recipe for an intriguing and fascinating read. From Assam, we travel to Jhanjharpur of Bihar to witness MG in its deathbed through *The Death of Meter Gauge in Bihar* as the smaller gauge was in the twilight of its career over there. Next, we move to the contiguous Uttar Pradesh to present the third chapter of our journey *Through the Heartlands of Uttar Pradesh* on the Palia Kalan-Bahraich stretch through the Dudhwa National Park. After spending some time in UP, we head to Madhya Pradesh where **JL Singh** writes home about *The Patalpani Hike* undertaken by certain members of the Rail Enthusiast Society (RES). The write-up also focuses on the recommendations made by RES for the preservation of the meter gauge line from Mhow. It's time to move west now as **Rudranil Roy Chowdhury** takes us to the western most fringe of the nation – Gujarat. His MG travelogue *Iron Horses in Lion's Kingdom* stretches from Jetalsar to Veraval via Dhasa, Amreli, Visavadar and Talala. A day-long journey through the remote countryside will surely win readers' hearts. The last leg of our journey on MG culminates with a ride through the Golden History of the Great Grand VIP of Southern Railway, aka *The Pandian Express*, by **Arun Pandian M** whose conscientious efforts tells many tales seldom heard before. The MG journey of our country couldn't have been possible had it not been carried on the broad shoulders of the YDM4 locomotive. Fittingly, we have YDM4 in our Technical Insight section elucidated by **Sourav Dutta** who leaves no stones unturned to make us understand all the technical aspects of the YDM4 – *The Heart of Indian Metre Gauge Railway*.

Up next, we have Railway through Sketches section portrayed with wonderful sketches from **Dr.Sudakshina Kundu Mookerjee** and **Sambit Chatterjee**.

Looking beyond the meter gauge stories, this issue carries the gem of an article 'Dehri Rohtas Light Railway – a lost & forgotten line' by **Mick Pope**, the British based railway photographer from his visits to India while the dossier on the third part of *Early Days : 1846 of EIR* by **PK Mishra**, the Additional General Manager, South Western Railway depicting the slices of history that defined railways in our nation sure to make the readers nostalgic.



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The first underground Metro system of our country recently did away with its Non-AC rakes as Kolkata Metro finally joined the club of 'All AC Fleet' like other Metros. TrainTrackers and Metro Rail Blog, along with the participation of some railfans and enthusiasts, bid a final farewell to those long serving Non-AC rakes. Read about the fascinating story and the bitter-sweet experiences from one of the protagonists, **Anamitra Bose** in *A Final Ode to the Non-AC Metro of Kolkata*.

This issue also carries a report by **Rudranil Roy Chowdhury** on the *Heritage Walk* organised by the South Eastern Railway presided over by Mr. Atulya Sinha – the Additional General Manager in collaboration with the RES and INTACH on 27th November 2021 at BNR.

Furthermore, we have a Book Review of Sanjoy Mookerjee's novel – Howrah Junction along with the coverage of its launch programme with some other books on 17th December 2021 at the Eastern Railway Officers' Club, Sealdah.

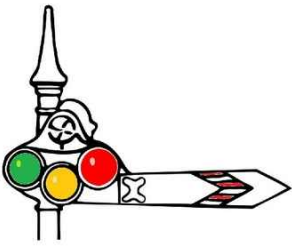
We wrap things up with customary regular sections of Photo Junction illustrating remarkable photos from ferroequinologists across the nation and the News Station narrating the recent happenings in Indian Railways

As the meter gauge services of our country chugs into the sunset, we have strived to keep them alive through the passionate tales of the authors which unravelled the varying socio-politico-economic aspects of the lives of citizens. As we step into this new year, we move another step away from the once celebrated, now erstwhile, meter gauge network of our nation. Meter Gauge had certainly not outlived its legacy but it deserved to be still out there. In our quest for adopting newer technology to augment speed and ride comfort, often for the sake of doing it, we have jumped into the bandwagon of Uni-gauge and Electrification tending to forget about the wise words of Toni Sorenson, the author of many bestsellers – "Hey friend, don't you dare forget, as you're creating a new you, that there's a whole lot about the old you that is worth keeping". The lost lines may not get redeemed but the remaining ones must not be subjected to the path of exile. May our new year resolutions follow the path of wisdom that may free us from the clasp of the whimsical arbitrariness of autocracy that has often rocked Indian Railways.

Wishing all our readers and followers A Very Happy, Prosperous and Peaceful **New Year 2022**.

Samsubhra Das
Subhadhyuti Bose





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January 2022

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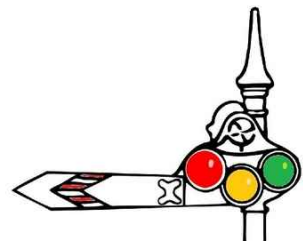
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Another account on another journey across another National Park – the Gir, this time by **Rudranil Roy Chowdhury** whose daylong MG ride in the western most part of the nation leaves us asking for more.

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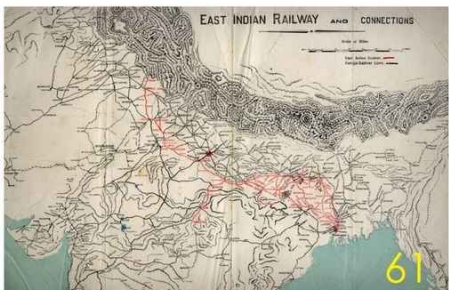
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YDM4 and meter gauge are synonymous to each other in India. Sourav Dutta dissects the locomotive and its mechanical dynamics with an array of photographs manifesting intricate details.

Restoration of Iconic Tram Route No. 36



The members of Calcutta Tram User's Association (CTUA) organized a peaceful but effective demonstration on 26th December 2021 at the Kidderpore Tram depot demanding immediate restoration of tram service along Fort Willium – Victoria Memorial – Race Course – Karl Marx Sarani stretch (Route No 36). The fact remains – service along this picturesque track was severely affected during the cyclone 'Amphan' about two years back. Many trees were uprooted causing extensive damage to the overhead traction wires and poles. After removal of the debris, new poles were erected and brackets were fixed at intermittent places raising a hope of restoration

of tram service in due course. However, in reality, the restoration work was stopped for unknown reasons causing hardship to the residents of Kidderpore area including workers of Kolkata port while connecting with the city centre Esplanade for their daily needs.

Members of CTUA on several occasions met the Managing Director, West Bengal Transport Corporation, who operates the city tram service but failed to sensitize the authority regarding restoration of Route 36. Thus, the members compelled to stage a silent protest holding posters, festoons and



paintings against the indifferent attitude of the authority. Leaflets describing the demands of CTUA were distributed among local residents and depot employees. The protest was superior to earlier events as different environmental agencies like Clean Air, Switch-On Foundation, LIFE etc along with organizations advocating sustainable mobility like Cycle Samaj extended their supports through physical presence. Even local residents



spontaneously joined the protest without formal invitations. A press conference was arranged at the same spot where CTUA addressed different aspects of throttling of Calcutta Tramways. Many representatives of print media and television and individuals attended the event and the report was widely publicized. Afterwards, innumerable citizens congratulated CTUA in social media for organizing such a useful protest. Unfortunately, so far no positive indication is visible towards restoration of the said tram service.





A Commoner's Meter Gauge Sojourns

Dr. Debasish Bhattacharyya

Calcutta – the City of Joy is where I have grown up, its illuminated streets are where I have walked about, has given me all; be it for the eco-friendly trams or nation's first metro. But something that my city couldn't ever offer was easy access to meter gauge (MG) trains in its vicinity – though that never failed to dampen my insatiable thirst for taking ride in MG trains which in turn took me to places. Surfing through the chapters of bygone days of my life, I am striving to put down an account on the MG journeys I undertook while striking a balance between my studies, work and my penchant for meter gauge train journeys....

The Maiden Ride

So far I recall childhood, my first ride on meter gauge train was between Samastipur and Laheria Sarai (off Darbhanga in North Bihar) to attend a family ceremony at the age of 5 or 6 (around 1962-63). At that time, Samastipur was a broad-gauge rail head connected to Howrah and my opportunity for an MG ride arrived only after Samastipur. We travelled in a first-class meter gauge compartment consisting of four longitudinal seats. It was crowded and except us, nobody had proper tickets. When the TTE appeared, he issued paper

slips as tickets. What makes me more nostalgic was that my first MG train ride was helmed by a steam locomotive. I clearly remember coal soot getting into my eyes as the train got going. This is all I remember about my maiden 'choto train' (small train) ride.

Twenty Years After

About 20 years later, in 1982, when I was a research scholar of Bose Institute, I attended a conference at Loyola College of Madras city. The green college campus often got reverberated with whistles from passing by trains. While trying to locate the railway track, I reached an over bridge from where a railway station was visible. What surprised me was the frequent movement of beautiful EMU coaches having similar livery as that of Eastern Railway but without buffers at the end coaches and the destination boxes with big capital letters like B, T or C. I can also recollect spotting a fairly long express train in brick-red livery brisking by a through line. Apart from these, I smelled more unusual structural features of the rolling stocks from a distance. Being unable to control my inquisitiveness, I bunked the conference with my partner to take ride on those EMU coaches. I discovered



Photo courtesy to original owner

that those EMU coaches were miniature versions of the BG EMUs of ER. Distinct features were 2 X 2 seats and the height of the compartment door was comparable to that of a fairly tall person. Among our Tamil co-passengers, one person began conversing fluently in Bengali and joined our conversation. We were a bit awestruck but soon the suspense was over as the person revealed that he had spent many years in Calcutta. The Good Samaritan then introduced us to the meter gauge trains over there.

In the same conference tour, we travelled overnight by a meter gauge service from Madurai to Rameswaram with seating accommodation in a second-class compartment. It was an agonizing experience to travel on those wooden planks for so long but the sight and thrill of crossing the Pamban Bridge turned out to be a panacea for all our pain. The absence of any adjacent roadway bridge gave us a real feeling of being at the middle of the sea with water everywhere! We crossed the bridge thrice to calm our excitement.

My LTCs with MG journeys

Southbound again – After another 10 years, in 1992, when I was recruited as a scientist in CSIR-IICB, the LTC block year 1990-94 was in force. I couldn't wait but to utilize the opportunity and planned to visit Trivandrum by Coromandel

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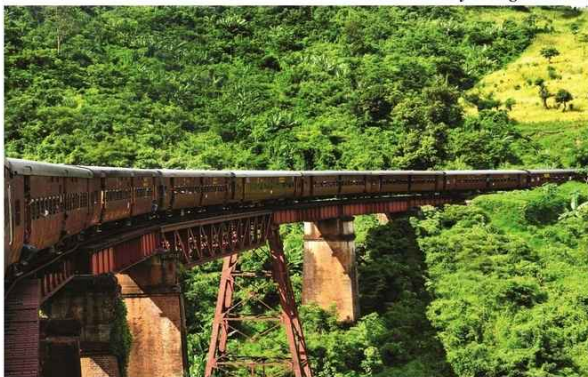


Express followed by Trivandrum Mail (BG) from Madras Central. At that time, these trains offered Non-AC First Class accommodations. When we were passing near Quilon, I found a track of smaller gauge accompanying us in parallel. It ended at Quilon. I had no option to investigate the MG further at Quilon station as the smaller gauge platforms were at a distance. The mystery was solved at Trivandrum platform when I purchased a Southern Railway time table. In addition, a copy of 'Trains at a Glance' where a map of Indian railways showing variable gauges in different colours elegantly explained what I saw over the years.

Awesome Assam & their MG – Meanwhile, I came across an article in the Sunday supplement of the Bengali daily 'Bartaman' where the author described an unforgettably beautiful meter gauge train ride from Lumding to Badarpur in the NF Railway. So, I planned the next LTC visit to Silchar with an aim to undertake a journey from Silchar to Haflong by a daytime MG train. As we had no reservation of the MG train, we choose a hotel close to Silchar station so that we may occupy seats well ahead of departure. Unfortunately, even arriving at the station an hour ahead of schedule departure, I found that all unreserved compartments were filled to the brim. Such was my desperation that I entered the office of the ticket collector and explained the purpose of my visit at Silchar. By God's grace, the man understood the circumstances and was kind enough to issue 4 seating reservation tickets. I breathed in peace. Undoubtedly, it was my first journey in an MG train where I enjoyed heavenly pleasure.

Initially, the journey was through green, unpolluted agricultural lands of Assam till we reached Badarpur. Since then, the train entered hilly terrain and everything around became suddenly picturesque. We had long tunnels, bridges and viaducts along the dense forests. We deboarded at Haflong, where the station was unusually deserted and none was around. So, I asked for help from the station master only to discover that the town is in fact served by Lower Haflong station – the next station ahead. Thankfully, one auto-rickshaw was there in the stand that took us to a hotel in the town.

Photo courtesy to original owner



Incidents of insurgency by the militants were high at that time. Returning to hotel before sunset was mandatory. The town was divided into two parts, Lower and Upper Haflong. Next day, my first job was to discover the Lower Haflong station. An auto-rickshaw driver dropped us at a market place where I could not trace any railway station. After persuasion, I noticed a small typical yellow/black railway notice board stating that the railway station was downstairs. One has to negotiate some 200 uneven stone steps down to reach the station and this becomes a tougher proportion for passengers alighting here with luggage for getting into the town or convenes. Either side of the stair was covered by small vendor stalls selling varieties of ware. The ambience was pretty similar to any temple precinct in the sub-Himalayan region. However, once I reached the station, it was pretty vast on a flat terrain having 4-5 tracks with all facilities. Even, loading and unloading were being done from wagons. Location of a railway station at sky level or deep below the ground may be usual in hill railways but for a man from the plains, it was surprising enough.

We also visited Jatinga, a village where birds come to any light source by themselves and do not fly any further. Bird deaths in this village has attracted global attention and famed naturalist E. P. Gee, ace ornithologist Salim Ali and Assam's most prominent ornithologist Anwaruddin Choudhury had mentioned about this naturally unnatural phenomenon. From a hill top at the village, I noticed the railway track passing through deep forests and tunnels some 1000 ft below. There were some remarkable incidents on that tour. As there was no proper schedule of trains for returning to Silchar, we opted for bus. In the midway, in a remote village, I saw a person covered with blanket carrying a gun whom I believe to a terrorist keeping a vigil of that area. I did not disclose that to my family members then. Secondly, we had pineapple from the local vendors on the platform of Jatinga station during our onward journey. I never found such a good variety of the fruit for the rest of my life. Thirdly, at Haflong, there were many varieties of security forces wearing different uniforms patrolling the streets all day long. Once in the midday, in a market place my younger daughter of less than 2 years was found to be missing. Shortly, I found that she was talking in an obscure language with a heavily armed policeman conversing in Hindi. I did not disturb the unequal and immaculate friendship! Throughout the tour, I saw cautious distrust in the eyes of many – be it for the airlines people both at Calcutta and Silchar airports for us being four passengers without check in luggage and visiting Silchar – a place mired by terrorists or the Hotel Managers who doubted our very purpose of visit. But somehow, people believed in my submission to MG trains and cooperated.

The Royal Rajasthan MG – Probably the most extensive MG train journeys were in another LTC block year when we toured Rajasthan. Our journeys included travelling overnight onboard the Chetak Express from Delhi Sarai Rohilla to



Photo courtesy to original owner

Udaipur in AC 2-Tier coupe, then from Jaipur to Bikaner again in overnight AC 2-Tier coupe and from Bikaner to Sarai Rohilla – a daytime Non-AC First Class coupe. MG AC 2-Tier coupes were unique in having doors to be locked from inside, similar to the AC First Class coupes of BG coaches. Though MG First ACs existed, I wonder what additional facility they could offer except for wider leg space ! The first journey was extremely thrilling as my daughters were told that the sizes of the pillows, blankets and bed sheets and also the size and amount of food to be served in the breakfast would be proportionately smaller compared to its BG counterpart. A Sikh person in uniform at Sarai Rohilla told me that the MG trains would survive for another 5-6 years more which sounded a death knell for me and a case of planned murder of this beautiful system.

On Gujarat MG trail: Once I got hold of the map of Indian Railways, I looked for any of our relatives residing along the routes of MG trains. One of my in-law relations was settled at Ahmedabad which was connected to New Delhi by MG trains in those days. Being our office head quarter, I frequently visited New Delhi. Once I extended my tour from Delhi (Sarai Rohilla) to Ahmedabad using a MG Second Class sleeper ticket. An upper berth was allotted where I was

Photo courtesy to original owner





Photo courtesy to original owner

literally stuck for its diminutive height. In the morning, when the train reached Abu Road, the compartment was near empty. My co-passenger was an RPF constable. He assured me that nobody would enter my open coupe as he spread over his stick and cap on the wooden seats. So, unhesitatingly, I roamed in the platform where for the first time, I found vendors shouting 'a..a..a rabri loo..o..o'. I wished to taste that delicacy of the rabri, but could not gather enough courage, given the uncertainty over hygiene factor. Overall, it was a much rewarding journey with the sights and sounds of the route. In the stretch between Sarai Rohilla – Delhi Cantonment, I noticed a good 4 to 5 BG tracks while one lone track served the MG service. Here also, the aggression of the BG system was quite evident questioning the future of the MG trains!

The return journey was even more memorable as I had an accommodation in a First-Class MG coach. Two distinct features of this journey were – augmentation and removal of several compartments either towards the locomotive's end or guard's end resulting in significant variation in the location of my compartment as per the rake. It happened mostly in Rajasthan. Secondly, some passengers were travelling on the roof but none entered the reserved compartments. The journey through the arid topography of Rajasthan and gliding over dual track alignment near Ahmedabad was really

Photo courtesy to original owner



Photo courtesy to original owner

absorbing scenes. My relations were more than happy as they never expected me to visit Ahmedabad though the actual reason of my visit shall always remain a secret and I hope that they will not read this article.

Revisiting the Southern Flavour

My bonding with the MG trains got more intimate in the mid-career of my service. Indian Spectro-Physics Association (ISPA) is a national body housed in Madras who arrange seminars/conferences centered in that city. They offered me an enormous opportunity to explore the MG network of Southern Railway. Their generosity was extended up to the limit of rescheduling my presentations, so that I could explore the MG routes therein. Madras Egmore – Quilon Express/both ways, Tambaram – Rameswaram Express/both ways (due to gauge conversion, then the MG trains terminated at Tambaram) and numerous journeys between Chengalpattu and Madras Beach in MG EMU coaches went to my credit. It might sound insane, but it's a fact that I had travelled at least 8 times between Ramanathapuram and Rameswaram in the last seat of the last compartment of the MG passenger trains – just to marvel at the sight of the Pamban Bridge. Even the Quilon journey was a memorable one as after suffering from the extreme heat of Tamil Nadu, we were greeted with cool breeze from Kerala within half an hour of our train entering God's own country. A South Indian

Photo courtesy to original owner





Photo courtesy to original owner

lunch at Sengottai platform, which people normally consider as of inferior quality, turned out to be a superb one for me.

I was twice invited by CFTRI, Mysore for academic reasons. Being an opportunist, I explored the then truncated MG section between Mysore and Chamarajanagar in the early morning and late evening using passenger trains without affecting office duties. Thankfully, the CFTRI campus used to be within walking distance from the station which had helped my cause to a great effect. Off Mysore, I had observed a few kilometers of dual gauge that ended at a BG railway workshop. At Mysore station, I visited the MG diesel loco-shed and went through all the rolling stocks at my will. The coaches including the toilets were sparklingly clean. The water tanks, lighting systems and window shutter worked perfectly. Sadly, in my second visit, the section was converted to BG as a result of which I lost interest in revisiting Chamarajanagar. The MG loco-shed wore a relinquished look. Some MG coaches including a red colored crane with its accessories stood aside the BG tracks indicating the end of the MG era in those parts of the nation.

NFR – once the heaven of MG

I have deliberately excluded mentioning my journeys of Mettupalayam – Udagamandalam MG Nilgiri Mountain Railways in this article as except for the locomotives, the carriages do not resemble traditional MG coaches. However,

Photo courtesy to original owner



Photo courtesy to original owner

my narration will remain incomplete unless I mention the MG trains of Agartala, Tripura. I visited Tripura University since its inception around 1992 on innumerable occasions. Before independence, Dharmanagar of Tripura was connected to Guwahati via Lumding by MG line. The MG line had been extended up to Kumarghat (Tripura) while Lumding – Guwahati stretch was converted to BG earlier. NF Railways designed an interesting project to serve Tripura at the behest of the Unigauge Project. The extension of railway track between Kumarghat – Agartala (mostly in the plains with some hillocks) was done using sleepers and clips of BG track. In addition, MG tracks were also installed on the same sleepers. As a result, MG trains first arrived at Agartala amidst much fanfare. They served the capital for 7 years. In the meantime, new alignments of BG tracks not exactly overlapping with MG were created in the hill section (Badarpur – Lumding stretch). The railway station of Agartala was worth visiting. It was an unbelievable experience to find an MG train standing on a platform at Agartala. All trains were crowded and the timings were not suitable for a round trip pleasure ride. In spite of all, a forensic laboratory officer arranged a window seat for me with the help of RPF

Photo courtesy to original owner





Photo courtesy to original owner

personnel for a journey up to Dharmanagar. Though the initial hours of the journey were flawless, but we could not proceed beyond Ambassa (an intermediate station) because of land slide. Little did I realize that journey would be my last on the 1000 mm gauge in the north-east as later railway service to Agartala was suspended for 2 and half years for gauge conversion. When I travelled multiple times by the BG trains in Agartala – Lumding section, I noticed truncated and fragmented portions of abandoned MG tracks residing much below the BG track level. Again, during my journey towards Dibrugarh by Kamrup Express, I noticed parallel running of MG tracks in the district of North Dinajpur and also in the stretches of North Bengal and Assam.

Living with the Memoirs and Memorabilia

Now with the already disappeared MG network barring a few pockets in our country, I am living on with the sweet memories I have had from the years of travelling in MG trains. The most attractive cluster of MGs in our country probably was the Egmore section where all kinds of MG train sets and locomotives were available. Though I have not seen any MG steam locomotive in working condition, barring my maiden ride in MG and those at Nilgiri Mountain railways. MG electric locomotives and EMU coaches were also very attractive. Once, I did continuous to and fro journeys between Madras Beach and Tambaram or Chengalpattu for 8 – 10 hours without food and water. I did that after hiding my whereabouts from the rest of the world to avoid providing

Photo courtesy to Somsubhra Das



justification of such apparently nonsense travels. It was a paradise of real miniature scale railways. When I changed over from the platforms of Madras Central (BG) to Madras Park (MG), just across the street, I felt like 'Alice in wonderland' where the girl changed her size within seconds. Unigauge project has been approved by my brain for commercial reasons but my heart still beats for the slow-moving majestic MG trains. Before I began cherishing the MG trains in 1990s, the threat of their discontinuation prevailed all over India. That's why, though I had heavenly pleasures in MG trains, I was always saddened for an inevitable separation in near future. At present, the MG network is represented in one or two stretches in India where they are either counting their last days or have been preserved for tourism purpose. But I doubt about their essence and success because of their remote location and poor connectivity. It is a matter of great debate that many countries are still successfully using meter gauge in their railway network but for our nation who has shunned nearly all the smaller gauges in the quest of Unigauge without any appreciable change in broad gauge operations even after conversion. From Kamalasar, Tripura, I had seen frequent movement of Bangladesh Railways MG trains having passengers on the roof of the compartments. Further east, at the Singapore Railway station, I witnessed a DLW, Varanasi made MG locomotive hauling an express train from Malaysia to Singapore. What a travesty of justice !

Some virtual relations with MG trains keep my memories alive. I can see and touch a MG steam locomotive and a passenger coach at the Regional Rail Museum, Howrah. One MG electric locomotive, YAM1 and two compartments of an MG EMU coach have been preserved at the Regional Rail Museum at Perambur. It would have been an appreciable effort, if one entire MG EMU rake and some wagons were also preserved. The National Railway Museum at Chanakyapuri, New Delhi also has several interesting MG rolling stocks. Beautiful enlarged pictures of MG trains are available from their souvenir shop.

A good number of railway books where Indian MG trains have been portrayed prominently both in text and figures keeps me fresh from the present boredom of broad gauge trains. Also my collection of some 100 HO-scale model trains keeps me busy in my world of MG ! Though the blue print of these toys were from western world's standard gauge (1435 mm), the appearance of the locomotives, passenger coaches, goods wagons and coupling system resemble closer to MG trains (1000 mm) rather than BG trains (1656 mm). I wish to donate them to the exhibition wing of the South Eastern Railways in eternal memory of MG trains of India. Maybe that's how I shall be able to contribute to the almost forgotten gauge of the Indian Railways that once dominated the various nooks and corners of the nation and was an essential mode of daily commute for people whose lifeline were these 'chhoti rails'....



Moving in a Timeless Land

Santulan Mahanta

The entry of Assam in the map of British India and in the railway map during the British Raj was quite late. If rest of India got some time to retrospect and speculate the moves of the East India trading Company before the 1857 Mutiny, Assam hardly had had three decades of British Raj before the Mutiny. Nevertheless, she jumped into the bandwagon of the Mutiny. Result was that along with the rest of India it too went under the Queen's command. So the building of one India got almost complete. But like today, one India that time too didn't function in uniformity. So she had to wait another two decades for the railways. It is not the fact that the Brits didn't feel the need of a railway system; they in fact had come up with several ambitious plans and surveys. But the arrival of the railway was delayed by several factors – a convenient water navigation system (albeit slow upstream journeys), dense forests which even local rulers found problematic to pass through in earlier centuries, impassable and unfathomable marshland infested with malaria, and above all the topography from which the name of the land arises – an uneven topography with hills popping up every thirty miles made it even a worse scenario for laying the tracks. Had it been plains like the Ganges, it would have been much easier. Had it been like the Western Ghats, the problem would only be of making a track bed. But here the tracks would jump from a hill to a marshland and again to a hill. Above all, the hills were piled up of soils rather than hard rock, making it all the more difficult to cut tunnels through. Clearing of the forests and while doing so facing the

king cobras and tigers was another menace. Yet the railways germinated in a tiny system of Dibru Sadiya Railway under Assam Railway and Trading Company. There were the Sahibs and there were the Indian workforce comforting 'No problem Sahib'. There were gauges of two different kinds, and there were disasters. The disasters, however, may sound comic today, though they might have been panicking for those who lived through.

Laying the tracks through the hills in North Cachar (present Dima Hasao district of Assam) was one of the toughest challenges faced by the British in India. Natural forces claimed so many lives that it is said that there lies the corpse of a man under every sleeper of the erstwhile meter gauge tracks. But Sahib must act like a Sahib – at any cost the work should be accomplished to keep the British glory aglow. For the record, this section also happens to be one of the longest duration projects under Project Unigauge. The plan of gauge conversion was already there when Agartala was seeing its first meter gauge train with tracks laid on dual gauge sleepers. But it took another twenty years to convert the entire length down south from Lumding to broad gauge. Militant resilience, abduction of railway engineers and contractors, shooting at railway personnel all these made the conversion not an easier task. Modern technology just helped to cut new tunnels and laying the tracks away from the existing meter gauge – just that much. But the cost of the project rose manifolds and lives lost in the process. Several

off the book and off the record negotiations had to be made with the militants – a Nation must act like a Nation to bring in integrity and unity. Before the internet boom, only the news of extremism used to air in the media, and very few railway enthusiasts would venture this hill section. Today internet provides us hourly updates and therefore just before the closure of the meter gauge here, railway enthusiasts thronged upon to relish the last days of the system that had experienced a lot more than any other railways in India.

I might have digressed from what I intended to say. But then again, I took this liberty so that you, the reader, not just read the plain words in plain Indian English, but also can visualize what I am stating here. Some things must be left for visualization rather than uploading in YouTube. There's a charm, the charm of you imagining the seashore holiday in your childhood when television had no cable connection, and the striking contrast and sense of unfulfillment when you get the first experience of it – I am probably sounding too much romantic here. Anyway, no more digression, I'd try not to.

Before going to the very much past stories, let me start with a story from the recent past. It will lay the foundations for the past-past stories. So here is the story of a journey, not much of a detailed trip report though, and yet, the story is a bit longer one. A journey is usually taken with a destination. But sometimes they aren't. Sometimes you travel to the past; it may be a mnemonic journey. Whether it is a never ending one or one that ends at somewhere, all these journeys of present and past do have a starting point. Sometimes, you just take a diversion midway – perhaps making another journey through a path less travelled by?

Back in 2014, I was to attend an international seminar in the Assam University in Silchar. I was a research scholar in Lucknow, at that time working on the last part phase of the thesis writing, and I had that last opportunity to travel by meter gauge in Assam. The opportunity in the form of that seminar was the perfect excuse, perfect escape or whatever you call it – it was that thing. That was the month of March; meter gauge was working in perfect order in the network south of Lumding. My initial plan was to travel by the Barak Valley Express in the morning from Lumding. Unless you pass through the hill section in broad daylight, you miss all the charms in the world – something that is still true to that section. Somehow a retinue of tragedies followed and eventually overtook me and I missed the train. I found no other way but to travel by the Cachar Express at night, and that too was a situation I faced just after arriving at Lumding, a couple of hours later, after my Barak Valley's departure. Cachar is a heavyweight train if it comes to reservation. Thankfully it clicked my mind that Lower Haflong must have some reservation quota left, and when checked it was not some but one seat left. Booked that immediately, and waited the whole day for the train at night.

Ticket is booked; now let's see what were the tragedies with me till that time in that journey. When I planned the journey

to Silchar, it was planned in three legs. I had that flair for the blank paper tickets, so neatly chose the connections. First leg from Kanpur Central to Guwahati by Purvottar Sampark Kranti (12502 that time), second leg from Guwahati to Lumding by Dimapur Express (15669 that time), and then I have already told you about the train for the last leg.

Purvottar Sampark Kranti – if you ask me how is this train, I'd say it's like your cheating girlfriend. You know she will definitely cheat upon you and yet you'll end up going around her every time. There's something still in her which attracts you. Ever since the introduction of this train, the sectional controllers invariably misplace the schedule for this train every year. Still I took the risk and at the time of its scheduled arrival at Guwahati, I found myself staring at a souvenir shop at NJP. I'll have at least three- or four-hours gap to catch the connecting train, or so I presumed. And yes, I was more than joyous because of this much delay which I eagerly expected with a lean prospect of spotting a smoking DHR B Class at SGUJ and the definitive amazing ride through the Dooars (soon the route was altered) in broad daylight. But things were to go a bit slow that day. Instead of us passing any stationary train, it was us becoming invariably stationary in order to pass other trains en route. By the time we arrived at New Bongaigaon, it was 6 in the evening. I had started looking at my watch and kilometer posts right when we passed Samuktala Road. I started becoming tensed. Will I be able to catch the next train? At New Bongaigaon we were detained overtime. This excelled my uneasiness further. In this single line section, I have a thumb rule that no matter how fast the train is on the run, practical average speed should be taken as 30kmph – unfortunately I have been proven right in that. If I were to miss the next train from Guwahati, I'll have no next train but to avail a horrible taxi ride to Silchar via Shillong. When the train was traversing through the Deepor Beel, I was ready at the door to deboard if the train was to stop at Kamakhya. I calculated that my next train departs Kamakhya in 10 minutes. And when Sampark Kranti was slowing down at the platform in Kamakhya, and seemed stopping for a few seconds, I just got down, and the train gathered momentum again. Lucky bastard, which was me. At the adjacent platform my Dimapur Express was standing. I had no time to eat anything but to find my coach and occupy my seat. I sincerely hoped that the TTE doesn't come up there itself and I need not to explain the circumstances. It was a four hour journey till Lumding and so I decided to stay awake. I put my phone to charging and sat back. The train started smoothly from Kamakhya and I discovered it moving again from Lumding! I fell asleep! I fell asleep right when the train had left Kamakhya, and wasn't aware of all the business at Guwahati which was just 7 kilometers from Kamakhya. You'd understand how fatigued I was. But that was not all. I woke up when the train left Lumding. And just then I realized that my mobile phone was gone already. I arrived at Dimapur and returned by the same train (this time as 15666

BG Express) to Lumding. At Lumding I had to file an FIR with the GIP Lumding about my phone, and got the copy of the same so that I could apply for a duplicate SIM. Thankfully I was carrying a Nokia 3G enabled phone as a back-up. About missing the train and booking in Cachar Express, I have told you earlier.

Now let's return to Lumding again. I won't lie to you; I was an avid diesel lover then, would not hesitate to run miles to spot a diesel link. Therefore it'd be a lie if I say I didn't have any intention to visit the loco shed. In order to visit that I need to put my luggage in the cloak room, this was in fact a corner of the parcel office. The trouble there was they refused to keep it without a photocopy of my identity proof. Merely producing the reservation documents would not suffice there. It may sound ridiculous to many of us, but it is a necessary extra security measure. Luckily I had a photocopy of my university ID card with me, which they hesitantly accepted. From the incident already happened with me, I chose not to take the camera with me and left it inside the duffle bag. Now when I got rid of all these burdens, I returned to my normal senses, went to the waiting room and got refreshed, made a call to my home and told them that the other phone is not working as the real story would make them panic. Then I stood at a platform stall to take *puri-sabji*. While taking the breakfast I started chitchatting with the seller about the progress in gauge conversion in hill section. These vendors are floodgates of information; all you need is to release the switch. What that fellow told me was a shock to me. According to him though not much work is left, yet no one can say when it would be complete, due to the extremist tension in the hill section. The previous month saw an off the book settlement between the Black Widow (Dimasa extremist group) and NFR for fifty crore rupees. I leave it to the judgments of the readers. But yes this gauge conversion was also not an easy task either. It too saw abductions, killings, shooting at the train crews, random ransom demands and what not. It was not for nothing that the YDM4 locomotives of Lumding shed were modified with bulletproof cabs. Now you perhaps understand the requirement of the identity proof at the cloak room.

It is irrelevant here what I discovered in the diesel loco shed during the day's loitering, people over there were doing a perfect job of keeping the fleet fit for the hill line. The shed is at one end of a huge network which sometimes gets isolated in the events of landslide in the hill section. So, they have to maintain way above the normal maintenance expectations. They knew that anytime now they might have to close the shop, but the dedication and the pride with which they were working, that was worth noticing. 'People in your family would also die someday, but would you stop caring for them?' That was the logic. People say the railway workers are lazy, but you need to give time for your love. It's not like shaking hands with random people just for the sake of courtesy; it's holding the hands of the beloved and checking for any scratch in them – that's what I understood.

After the brief visit to the shed I returned for lunch. And I must tell you that Lumding has one of the worst catering services of Indian Railways network. Here you order for a plate with egg curry and pay for the whole plate, you'll find just one egg swimming in the yellowish watery substance served to you. Well, it happens to be the same refreshment room where my father had the first taste of chicken in his life. But about the tea, I forgot to tell you earlier, it is interesting. At and the railway network south to Lumding, all the vendors serve you tea made with condensed milk – a tradition of at least fifty years if not shorter than that.

The evening had another twist. I found the loco pilot of my train an old acquaintance of mine. Incidentally I found my future wife boarding the train as well, along with one of my college and university juniors; both heading to the same seminar. No, we were yet far away from the romantic involvement, but that was enough to entrust them with my luggage and proceed to the footplating. As I was hurrying towards the loco, someone fell from a coach while trying to board and just fell on me, the chain reaction was that I in turn fell over a sack of potatoes lying at the platform and my face hit the platform. My spectacles broke and my face got injured. But there was no time to lose. The loco pilots welcomed me and since it was the cab of an YDM4, they asked me what happened to my face and I narrated the incident. They gave me a bottle of water to wash my injuries and gave some antiseptics to apply on that. Inside the cab I had no place to sit but to stand behind the loco pilot. The train started moving; headlights were on to tear the darkness of a winter night in this part of the country. The things up ahead were not much clear, but these guys were experienced. The light of the headlamps fell on the thick layer of fog and expanded like a drop of ink on a blotting paper. I just couldn't help asking that don't they feel inconvenience in such blindness when the headlight illuminates nothing. What they said is new information; the headlight is more of a warning to people up ahead rather than a visual aid to the crew. The line up till Lower Haflong is not quite steep, yet the use of dynamic braking was necessary at times. We started chatting and I asked how they ended up working in the hill section, because earlier I had met them at Jorhat Town working on the Janshatabdi on several occasions. One replied, "He got punishment transfer." The other one said with a chuckle, "Same thing for him." Surprise again, eh? From working the highest order trains, Rajdhani and Janshatabdi – now they are put to trains with maximum speed of 60kmph in slight bit of leveled tracks in the hill section. Anyway, the proper use of dynamic braking was something of an almost firsthand experience for me. The route knowledge of the crew members was astonishing. Even in that blinding darkness, they would communicate with each other about which hectometer post they have just crossed. They would also draw my attention to wayside things invisible to my day-vision eyes. Of course, they could identify each and every point from the locations of the

hectometer posts.

We were not quite far from Hatikhali station, the acting ALP that day drew my attention into the thick dark blanket of fogs to the right and told me that there are two graves of two British Sahibs. It was really dark enough to see anything even in an apparently hotter summer night if one had been travelling. Those hills never get rid of the fog and mists in any season – if not fog, it is rain or at higher altitudes it would be a cloud nimbus. Also remember that fall that I took at the platform, it sent me a bit dizzy with all the day's fatigue. Usually, I had a notebook for train travels, my travel log book. But there I had nothing except a tired brain which was perhaps run on adrenalin that time to keep the weary eyes awake and send visual recordings into the memory. All I registered in my brain was that the location was a few kilometers (that was the guess I made in the run through darkness) ahead of Hatikhali. The thought of those two graves kept lingering in my mind.

Now the rest of the journey was not so important. After the conference was over, in the return trip I took the Barak Valley, and by the time we reached Lumding it was almost midnight. When the Intercity combo of 15604+15606 arrived on time, I found it a bit relieving and stretched my legs on my berth. When I woke up, it was almost fifty kilometers to Guwahati, and still the train was standing at an unscheduled halt at a station called Kamrup Khetri. This Intercity combo is just the second most punctual service after the Manas Rhino Passenger in Assam. So what might have happened? Again, I had to catch the North east at 9:45 from Guwahati. I just got down and went to the station master to enquire. I was informed about an agitation up ahead on the railway tracks – some people demanding political autonomy. I returned to my berth to collect my luggage and deboarded the train again to take the village road leading to the National Highway one and a half kilometers away. A few others asked and followed me. On reaching at the highway I found myself lucky that a bus just stopped near me to drop someone, and I jumped in to fill in the vacancy. I reached Guwahati in time to catch North east Express to Kanpur and then caught Pushpak for the last leg of 72 kilometers from Kanpur to Lucknow. Then rested for a couple of days and all the while the thought about the graves kept lingering in my mind. The grave is a grave matter indeed, but it brought some kind of exuberance in me instead. Where to find details about them? Then I recalled a cornucopia I already had in the form of 'Indian railways; The Final frontier' by a former teacher of our college, Mr. Arup Kr. Dutta. I looked up the book. And the story was there in page number 160! A certain Mr. Wilde and Mr. Peddie were lying six feet beneath the earth there. There were many other such graves in different locations, but these were just by the meter gauge tracks which they were laying in the initial days. Mr. Wilde was killed by a Pathan contractor over a conflict while the cause of the death of Mr. Peddie is still unknown. Mr. Wilde had a gun with which he shot down a tiger once, and after thirty years of his death the

Kuki people there dug up his grave once in search for his rifle. It was a rule of the Assam Bengal Railway that each grave, and there were many, as it is said that there lies a body of a human under every sleeper of the hill section, should be visited by an Officer once a year. A grave tribute from the Assam Bengal Railway to the grave works carried out by those who are in graves thousands of miles away from their homes. Now if you ask me whether those graves are preserved and being looked after by our Independent national system of railways, I am afraid that I don't have any idea about that. They have been resting in peace just by the site of the work they were trying to accomplish, thousand such deaths making it possible for millions of living to move past ungratefully, probably spitting through the window.

Now, that section south to Lumding has always been fascinating to me. My first journey through that section was back in 1987, nothing of which I could remember of after growing up except a vivid picture of me looking down from the verandah of the retiring room at Silchar and a steam engine smoking down on the tracks in front of me – the fireman quickly shoving some coal to the firebox. If you ask me, except that image deeply imprinted in my mind I can't give you any other details. Even that image is, which was pretty clear earlier, fading away in last six seven years. Whether that image has been overwritten by so many other experiences or work burden – I ain't no shrink to tell ya. For the next visit I had to wait another 26 years, in 2013, again for a conference in the same University. That visit was one way flying and returning by train. The next year, I planned in detail, but the circumstances I have already narrated. What did I do in all these 26 years? Went to school, then college, then went out of the state – and yet the Hill Section or the *Pahar Line* stayed as an all-time-favourite adventure story for me. The bow-shaped Dhanuk Bridge which I saw on the back cover of a time table would beckon me all the time, the Dayang Viaduct would evoke a spirit of adventure, and what not. Looking at those photographs, I wished if I were the photographer – a regret that I'll carry to the grave.

Forget the photographic experiencing of the route. The anecdotes are not less interesting. Not all interesting stories are visual, some should be visualized. And sometimes you might need to virtually arrive at a scene and assume the role of a spectator to experience those incidents which were impossible to document in any form except some individuals had the acute sense of humour to note them down immediately, or like Wordsworth recollected in tranquility. Some collected tit-bits are reproduced below:

Story 1:

Hill section was tough not only because of the terrain, but also because of the geological formation. That same problem has been obstructing the East-West Corridor of the four-lane project initiated by former Prime Minister Vajpayee. The arrogant road builders refuse to learn from the railways in this matter, and after a century since the railways arrived,

the road builders are facing the situation or rather re-living the hardship faced by early railway engineers. Anyway, when the work in the hill section was going on in initial days, the foremost task was to clear the jungle and prepare a leveled stretch. Sometimes these stretches used to be a really long one to match all the calculations of gradient and alignments. At one point after much arduous work such long stretches of the formation was ready, but rails had not been laid, and bridges were not yet built. Let a young lady arrive there on a visit. Now the Brits were pretty much courteous in such events and one of the engineers escorted her for a ride around the site of work. That fellow definitely expected a few words of appreciation of his work. After returning from the visit around the site she said, "Isn't the Company lucky to find such a long stretch of level ground on which to lay the railway!"

Story 2:

Earlier tunnel no. 7 passed through the Jatinga saddle 87 feet below the ridge which was 845 feet long. This one was particularly a difficult one to cut through. Work of this tunnel was started from both the ends. But when the boring was almost complete and timbering was going on, the entire structure came tumbling down, killing quite a few workers. The ground was excessively hostile for the work and not more than 7 feet could be taken out without immediately shoring up with timber. Once a tunnel is completed, it had to be lengthened due to slips in the approaches.

This almost had been the story of all the tunnels. Being one of the heaviest rainfall regions, rain did not only impacted directly, it used to bring some other sidekicks as well. Wild animals during the rain would often take shelter in incomplete tunnels. Tunnel no. 2 from Lumding involves a tragic story – a tiger taking shelter in it. A British engineer was not aware of the tiger inside the tunnel and was attacked and killed by the tiger. The popular story is that, his wife hearing the cries came out with a rifle and shot the tiger dead. To commemorate that incident and her courage, cemented faces of a tiger used to adorn both sides of the tunnel.

Story 3:

I have maintained this view that the Assam Bengal Railway constructions in Assam were more of a matter of pride considering the cost of wealth and human lives. The return was negligible. Once they started, they couldn't leave it half way. Sahib must act like Sahib – that was the spirit behind the work – as told earlier. About 1902, the then Viceroy Lord Curzon paid a visit to Assam. Viceregal train was brought up on barges for the journey to Lumding. While travelling from Chaparmukh on to Lanka through miles of thatch grass, he turned to the railway agent and said, "Now, Mr. Woods, that you have built this line, what traffic do you expect to carry?"

"Nothing, Sir."

"Then why build the line?"

"I do not know" was the reply. "The Government of India ordered it to be built."

During the World War II, the transportation system leading from Calcutta into Assam, called the Assam Line of Communications (LOC), was described by an Army logistician in the War Department as "The most fascinating and complex problem we have in the world." It consisted of rail, water, rail-water, water-rail, and to a limited extent, rail-highway routes. The LOC was ill-prepared to take on wartime traffic. Part of the broad-gauge line and most of the meter-gauge line were single tracked. The latter was a bottleneck; there were no bridges across the Brahmaputra; the steep gradient at the eastern end of the line made travel slow and hazardous; and monsoons annually disrupted service by washing out tracks and damaging rail bridges across smaller rivers. Playing a vital part in the LOC's development was the transfer to U.S. control of the meter-gauge line from Katihar to Ledo, a portion of the LOC long considered to be a major obstacle to rapid movement of supplies to Assam. A few stories are reproduced below.

Story 1 – What should the station master do?

In Assam, the road was generally thought of as running from Upper Assam westward and southward because its main traffic was in that direction – the hauling of tea to market. The war threw this railroad into reverse with the movement of the goods of war to China and Burma from Calcutta's port. The meter-gauge line from Parbatipur was in the main single track, fitted chiefly with rolling stock of the four-wheel type and powered by an assortment of locomotives made in Germany, England, Belgium, France and Czechoslovakia. The Indian method of operation was friendly and informal – though often protracted. There were schedules, of course, but they were observed in the manner of a timeless land. Although a train might arrive at a station hours late, if the schedule called for a 15-minute stop, the full stop was observed, even though loading and unloading might take only two minutes. Operations froze while crises were referred to higher authority. American personnel going up the road in the early days, before the Army took over, used to gain priority and sudden departure by treating station masters to cartons of cigarettes. The classic story of railway operations quotes a message sent by a station master to his superior –

Image provided by the author

Photo courtesy to its original owner

At Pandu, lack of a railway bridge across the Brahmaputra made necessary the ferrying of railroad cars to the opposite bank where the cars are unloaded.



"Tiger on platform. What shall I do?" was his query. Later, when U.S. soldiers heard of a tiger in the neighborhood, they booby-trapped it by tying a hand grenade to the carcass of a goat.

Story 2 – The War can wait

But King Cobra and Shan the Tiger were not always so easily defeated, as Staff Sgt. Edgar Laytha of Roundup found out in a ride up the entire length of the rails. He told of a GI stationmaster who could not hold a tiger. Instead a train was held up. It happened at midnight. Because of the tiger, the train could not go onto a siding to let another train pass. The controller from battalion headquarters telephoned to the jungle station, asking what the delay was about. Sgt. G. A. Blake, from New Hampshire, lamented from the other end about a tiger that was eating a cow right on the rails. The midnight repast of Shan lasted 32 minutes, as the sergeant decided a pistol was not enough fire power with which to offer battle. Traffic had to be suspended and the war had to wait better than half an hour until the tiger had filled his belly.

Story 3 – Rolling Pilgrim

Laytha, who traveled up the rails from Calcutta to Ledo, said that despite American magic the trains still rode slowly at times. Low priority trains had to wait on sidings until the fast trains rolled by. Laytha rode the engine of a low-priority train from the Brahmaputra to a jungle yard - and the 100-mile stretch took 16 hours. The 65-car long train was in charge of two GI's, assisted by two Indian firemen. The engineer, Cpl. G.P. Moffett, 21, from North Carolina, took orders from Pvt. Orville C. Vick, 23, of Connecticut, the conductor. Vick was responsible for the safety of all the cars; had to see that all the markers were up, give the signal for departures, write delay reports, and seal the train.

The locomotive on this typical trip chugged through a world lush and green. Unexplainably thin cattle grazed on rich pastures. Water buffaloes swam in sleepy, stagnant ponds, looking gaunt and starved. The GI stationmasters at the lonely places, where the train had to wait for the fast ones, served hot coffee and spoke of their solitary lives. Some traded beer to the natives for one egg-laying hen per bottle. They told Laytha stories of tigers and wild, jungle-roaming, basha-piercing, native-chasing elephants.

No. 859 passing through a jungle stretch near Pandu, India, enroute to Ledo. White cars are refrigerators, carrying frozen beef. Image courtesy to original owner.



On a sunny siding, Laytha ran into The Pilgrim, Chaplain Ervin H. Hartman's rolling church, office and home. The Pilgrim was switched on and off trains at places where it was most desired. At intermediate stations, services were held in the car for as few as three men. A white cross on blue background was painted on both sides of the former salon car and it was equipped with an altar and Army field organ and a kitchen where Cpl. Thomas G. House, the chaplain's assistant, cooked his and the Chaplain's meals. House, who studied for the ministry while he was a yard switchman in Missouri, had an Army job that suited him.

Story 4 – Speeding train and Death from Natural Cause

The Railway Service took over the railroad yards at Parbatipur, where the freight came in on the broad-gauge trains from Calcutta. The railroaders put in new electric cranes, put down new tracks, and turned-on flood lights for 24-hour operation. The GI yard men cleared the yards and kept the freight flowing from the wide track to the meter gauge rails.

The GI railroaders made the Bengal & Assam click. The Indians hauled 250 net tons in a train. In nine or 10 months, the GIs were dragging more than 500. They increased the length of trains from 40 cars to an average of 80. Shop men reduced locomotive overhauls from three weeks to five days. The Americans stepped up the Indian maximum speed of 25 miles an hour to a highball of 45. One GI locomotive engineer was ahead of his time. He was court-martialed for going too fast. This increase in speed was hard on sacred cows. Fortunately for the railroad wallahs, the Indians considered departed cattle on the right of way as "death from natural causes."

Story 5 – An Elephant can be Locomotive

Though the Bengal and Assam railway had quite a number of locomotives in sheds located in frequent intervals, yet in some jungle sidings they were not available for marshalling works. Yet the War demanded marshalling at odd stations. Therefore an elephant would be used as shunting locomotive in such places. Often those living locomotives were borrowed from nearby tea gardens which owned them. Here's what Sgt Laytha had witnessed:

The train rolled into the GI terminal of Tinsukia, less than 50 miles from Ledo. Here Laytha found the most fascinating beast

On a jungle section of the Bengal & Assam railroad, an elephant is used to shunt three box cars onto a siding. The beast is owned by a tea plantation and does the "switching" for its owners' cars, eliminating the necessity for the railroad to operate a locomotive at the siding. Image courtesy to original owner.

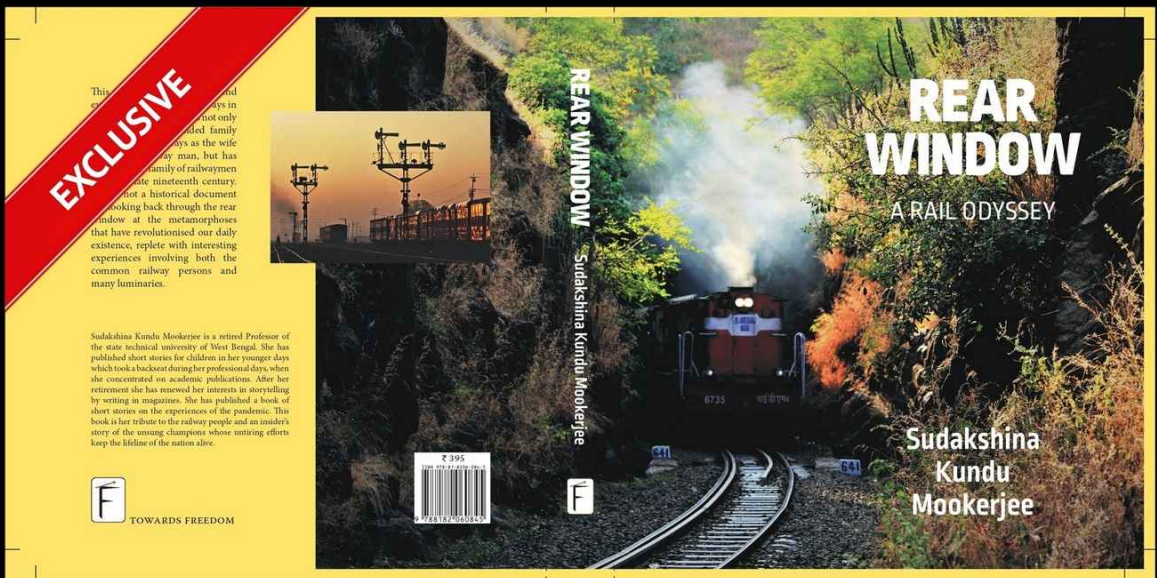


of the journey's collection: the free lance elephant that lives independently and usually undisturbed in the jungle, subject only to occasional calls for duty. The railroaders used them as living switch engines, for they were capable of pushing five to eight cars onto a siding. Most people do not believe it until they have seen the performance. Laytha described how an Indian boy who worked for the railroaders called his elephant by giving the Moslem version of the Tarzan yell and shouted the elephant's name, "Bilbo!"

Railway operations in this part of the country used to be a lazy activity. No one could think of moving on time in this timeless land. These lazy operations of the early decades left

such an impression among the mass that even today people think of railway less seriously than the other parts of the country. Even during a visit of the Mahatma, while travelling from Jorhat to Mariani over the Jorhat Provincial railway 2 feet gauge railway, his car got decoupled in the dead mid of the night. The driver of the train realized it just before reaching Mariani, and Mahatma was left stranded!

Cover photograph courtesy - Historical Railway Images



This book describes the evolving character of rail travel over the past century and also from the late 1960s till date. Having witnessed Indian Railways from close quarters, **Sudakshina Kundu Mookerjee** has portrayed the changing lifestyle of railway families during the past four decades, as the ethos of the railway eco-system underwent a gradual shift during this period.

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the Death of Meter Gauge in Bihar

Somsubhra Das

Bihar, an east Indian state, was once served by a myriad of meter gauge (MG) network that connected the far east than 100 years, in 1983, the Samastipur-Darbhanga span was converted into broad gauge (BG). Thus, the Sakri-Jhanjharpur MG stretch became one of the oldest surviving meter gauge sections of the nation and it's no wonder why it was primarily in my bucket list.

My several previous plans to capture the Bihar MG had fallen flat due to multifarious engagements and when I finally made it to Bihar to get hold of their MG system with my fellow ferroequinologist, Subhadyouti Bose, we knew we were already staring down the barrel as Bihar was then left with the solo active stretch of MG from Sakri to Laukaha Bazar. Going through the timeline, it would be easy to identify that though the Sakri-Jhanjharpur MG line dated back to 1883, the Jhanjharpur-Laukaha Bazar MG section came to be only in 1976. Accessing Sakri from Kolkata was not difficult as they are set apart by about 500 Km only. As earlier, our paucity of time had to be blamed for not being able to undertake a full-fledged MG tour in Bihar, and here again, our commitments towards work didn't allow us to traverse

the entire operational MG route of Bihar. Our cramped schedule and a very late plan to explore the remains of MG there were driven by the twin adages – 'Better late than never' and 'Something is better than nothing'.

This happened to be our shortest-ever meter gauge ride of only 19.4 Km (one-way). It was quite tempting to go all the way to Laukaha Bazar but the absence of any return service stopped us from venturing out any further and we were also out of time to spend another day away from work. We had planned our journey from home in the Howrah-Darbhanga weekly Express upto Darbhanga. After spending the night there in Retiring Room, we proceeded for Sakri in the Ganga Sagar Express. Travelling in General class was no issue in the pre-Covid era. A two hours' schedule for a mere 57 Km distance reminded us about stories of travelling in bullock carts from the pre-independence era.

Finally, we made it to Sakri at around 7 in the morning – a station set amidst the countryside with minimum to no infrastructure. Dry taps, worn-out fans, broken platform shades and shattered seats manifested the 'available facilities'. The meter gauge platform wore a splintered look –



Sakri Junction MG Platform

a breakaway from its elder counterpart with bricks jutting out from the broken ridges but with mini shades all through its length. In the absence of trains, the platform gets transformed into a recreation ground for mortals of all ages.

Sakri Junction may not be the greatest and busiest of junctions, but three lines fork out from here – one heading north towards the border town of Jaynagar, another down south towards Harnagar and the meter gauge leading to Jhanjharpur town and on towards the frontier town of Laukaha Bazar. Of these, the MG line is the primordial one dating back to 1883 while the Jaynagar connection happened on 14th January 1905. The Sakri-Biraul-Harnagar route didn't exist during that time and is a more recent development with the opening of the Sakri-Biraul section in 2008 with the Harnagar extension eventuating a decade later. Sakri looked more of a conventional settlement town where autos and rickshaws stood queued beside the tracks, huts and shanties encroached upon railway spaces along with a couple of pucca structures. A high dose of visual pollution is what one gets to witness here with littering all around. Sakri presented itself as a small town still under transition and without the best of both worlds – rural or urban. Technology seemed to be briskly invading among the

Typically Sakri



The morning service

populace, but uninterrupted supply of electricity was still a day-dream. It's about a balance that never got right.

With not many things to exactly explore, we waited for the MG train to arrive. Soon, the honk from an incoming train was sounded as we watched the caterpillar approaching us over wobbly MG tracks with people hanging from the doors, some sticking their heads out while some standing on the door plates. The train seemed to murmur, "Good morning. Welcome to the Bihar meter gauge....". With the advent of the train, the platform became an exchange point for milk vendors, vegetable sellers and other peddlars. In the midst of all the transactions, the YDM4 had quietly detached itself to get to the other side for its designated job.

Bihar was the host of Narkatiaganj (NKE) MG locos whose livery resembled with that of Izzatnagar MG horses. The side stenciling, though, had reminiscence with the stenciling style of Lumding YDM4s with road number in bold markings. Our power, #6465, painstakingly moved from one end to the other to commandeer our rake. Our excitement and exhilaration caught the attention of the inquisitive eyes of the shuntman as not many come this far to photograph meter gauge trains in this rural and rustic setup. Now, we are all set to go.

We started as the YDM4 fired on all cylinders and glided over an apparent MG-BG diamond crossing as the tracks towards

The Diamond Crossing





Manual Control of Semaphores

Harnagar crossed us. Meanwhile, the Jaynagar connection had already veered away to our left. We meandered past lush green fields and grasslands as lower quadrants continued to guide us. Strangely, some of the semaphores were manually handled as well. After halting at Manigachi, Mandan Mishra Halt and Lohna Road, we reached Jhanjharpur – our destination. Some flat-bed MG carriages and a rake along with some wheel sets were found stabled at Manigachi. Surprisingly, Mandan Mishra Halt, with a ground-level platform made with a strip of bricks, had a greater exchange of passengers than at Lohna Road and Manigachi.

Jhanjharpur appeared to be a considerably bigger town that houses a railway yard. The station earns the status of being a junction as the lines leading to the border town of Laukaha Bazar and the Nirmali-Saraigarh route diverge from here. As the train departed for Laukaha Bazar, another 40 kilometers from there with a few more stations (Jhanjharpur Bazar, Mahrail, Chandeshwarsthan, Vachaspati Nagar, Barhara, Sardar Ballab Bhai Patel Halt and Khutauna) on the way, we were introduced to scenes that defined the death of meter gauge in Bihar. We had heard and read of scrapping and decommissioning of locos and rolling stock earlier but didn't

Lohna Road enroute



Shocking Scenes at Jhanjharpur

have the faintest of ideas that Jhanjharpur will offer those scenes live. Meter gauge coaches cut into halves with their innards strewn around like mutilated body parts welcomed us. The yard looked more like a scrap yard with a chain of YDM4s also lined up to meet the same fate. The ambience was similar to that of a battlefield where lifeless bodies of soldiers remain all over the place in utter neglect after being brutally slayed. Once the carriers of countless commuters offering seats, lights and fans for comfort during their



Into the gallows...

journeys, have now been annihilated into mounds of scrap metal. This is perhaps the circle of life.

Being disgruntled and crestfallen with what we saw around us, we tried to comfort ourselves with the fact that we could at least see some live MG action in these parts, never mind a truncated route! We entered the yard and saw that work was going on in full swing for dismantling the bogies into junk. We proceeded further to take a walk along the yard to



The Deathbed....



It's Different....

photograph the fallen heroes – the decommissioned YDMs. We saw a darker shade of the already described 'NKE' livery as well which looked much more elegant than the standard livery. The chain of out-of-service locos reminded of similar chains that we had earlier witnessed at Pilibhit and Mailani in Uttar Pradesh. We strongly felt that one of such warriors should have been plinthed for telling their stories of rendering unconditional service to the people of the nation. But as things turned out, that was not to be!

The scenes at Jhanjharpur left us a bit devastated, though it was some relief to find a couple of YDM4s being maintained and taken care of to keep the small fleet of locos alive in order to serve what was left of the network – perhaps a lease of life amongst the dead. A good one hour or so had elapsed by then. The train which would take us back to Sakri was about to arrive as we had some snacks and tea to partially satisfy our hunger cravings. Our short stay at Jhanjharpur thus ended as our train led by another NKE YDM4 #6703 hooted hard and departed. It was our last 90 minutes ride on the Bihar MG which would not be repeated in our lifetime....

No trip report of Jhanjharpur is complete without the mention of the historic Kamla Balan Bridge, a century old structure built by the British in the early 1900s spanning 220 ft. The bridge was actually a dust bowl presenting a frail-looking structure, waiting for a calamity. Kamla Balan Bridge

Service from Laukaha Bazar



Kamla Balan Bridge

was the solo link to Bihar's northernmost sectors and had already outlived its life long ago. It was never constructed to serve as a rail-cum-road-bridge until 1972 when thick wooden slabs were laid on the bridge to pave way for road transport along with rail. Six of the 11 pillars of the bridge had been clogged by copious silt brought down by the erratic Kamla Balan river, which has locally earned the epithet of being the 'Sorrow of Bihar' for it being seasonally flooded that threatens life in the region. This pivotal connection not only connected the district headquarters of Madhubani but also held the key to Indo-Nepal trade in those regions. But it's difficult to fathom the continued ignorance towards the health of the bridge bearing such paramount economical and historical importance. One also fails to make sense of the 'Photography Prohibited' signages on either side of the bridge. Crossing the bridge was one hell of a task. We observed the mayhem once our train approached the bridge marked with a PSR of 20 kmph. The chaos continued as trucks, cars, autos, rickshaws and two-wheelers battled for space as our train moved sounding alarm all through. This phenomenon seemed to be a daily routine until the upcoming bridge alongside gets completed and is thrown open for use. Once that happens, the Bihar MG would perish forever.

Kamla Balan Bridge





Amidst the thickets...

As we crawled into Sakri, the Bihar MG had already begun its journey towards sunset. Bihar MG's only surviving section didn't survive for too long. Travelling in these parts of the country reveals how a rural residuum still struggles to make both ends meet, how a part of the population continues to survive under the breadline with a sordid and squalid quality of life, how the light of development has failed to illuminate the lives of the marginalized people who are almost isolated from modern facilities. A testimony to this fact lies in the point that not an iota of difference has been made with the elementary and rudimentary lives of individuals here till then. Such indifferent and apathetic approach also got reflected in the infrastructural aspect as no endeavour had been initiated for reconnecting and restoring a mere 22 Km stretch between Saraigarh and Nirmali by rail after the fall of the rail-cum-road bridge over the river Kosi during the dreadful 1936 floods, thereby speaking volumes about the laggardly pace of development! Thus, to us, the Bihar MG was more than just travelling in the meter gauge trains over an age-old crumbling bridge; it was more about the journey of its people and their lives who used those trains to cater to their daily needs to sustain their livelihood.

Bidding a final goodbye to the Bihar MG, we boarded the Jaynagar Kolkata Express upto Samastipur from where he had travel authorities in the Maithili Express for home. We came back with a sore heart, not just because Bihar MG was on life-support, but also for the dismal conditions of hygiene and sanitation standards that the local people there were subjected to, let alone the savage scenes of Jhanjharpur. But



Bidding final goodbye to Bihar Meter Gauge @ Sakri

as they say, there is always light at the end of the tunnel, we chose to remain positive about the impending arrival of BG and the anticipated prosperity that it would bring to this rather neglected region of the country. The Laukaha Bazar-Sakri MG section was closed for gauge conversion within a couple of weeks of our visit. For a change, I didn't feel that bad for a couple of reasons – a broader gauge might save the ordeal of the locals travelling at snail's pace and the news about the restoration of the 1886-87 built Jhanjharpur-Ghoghardiha-Nirmali line connecting Saraigarh which finally would open up a wide range of connectivity joining Darbhanga with Saharsa, Forbesganj and Purnea after over eight decades. The broad gauge might not be able to free people from the clutches of under development and privation immediately, but a better connectivity is always the first step towards achieving it. With the gradual roll of the wheel of progress, the fall of MG had become imminent and was a matter of time. Bihar's MG services are now a thing of the past as they have now been taken over by the broad-gauge carriers with lesser travel time and wider reach to places. Bihar MG would continue to live in the memories of people for whom it had long been more than just a lifeline.

Acknowledgement:

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All photographs used in the article were taken by author unless mentioned otherwise.





through the

Heartlands of Uttar Pradesh

Part-III : Palia Kalan - Bahraich

Subhadyouti Bose

In the third instalment of the Uttar Pradesh Meter Gauge series, we continue our sojourn eastwards, through the virgin forests of the Dudhwa National Park, to the eastern terminus of the curtailed Meter Gauge (MG) network at Bahraich. In this part, we share our experiences of a ride through the forest and open grasslands, small hamlets and nondescript roadside villages, most of which pass us by at the blink of an eye upto the redrawn frontier of the once vast MG route.

We spent a very uncomfortable night at a hotel in Palia Kalan which was found with much difficulty after disembarking at the railway station that serves the outpost of a town. We woke up by 4 in the morning and after a quick bath, we left for the station to catch the early morning service to Bahraich via Dudhwa and Nanpara. It was still pitch dark and the affairs got more compounded since the station premises had no

power to light up the platform and the station master's office – no appreciable change in scenes from what we had observed last evening. We approached the booking counter to purchase tickets for the next leg of our journey upto Dudhwa, a distance of 13 km. However, we found out that due to the power outage, tickets were not being issued. Upon enquiring, whether tickets would be checked at the next station, we were told by the aging Station Master that this should not be a problem since it was a regular issue in those parts and none were really bothered to check tickets in the wee hours of the day when most of the populace was usually fast asleep.

Although a bit taken aback initially due to what we had witnessed in the first leg of our journey (published in the May 2021 issue), we realized that the Station Master could not do much in that situation and hence had to resort to this arrangement or the lack of it. The darkness that the station was engulfed in created an ambience that teleported us back

*Pitch dark action....**Photo by author*

us back to the days when electricity had not made its foray into the countryside and at a time when most of the work used to be done in candle light or a kerosene lamp. The sky was still dark even as birds had begun to chirp, heralding the approach of dawn soon. As we sauntered down the platform enjoying the otherworldly atmosphere, we could see bright lights in the horizon approaching us from the Mailani side. It did not take us much time to realize that our train was making its way. By now, it was around 04:50 AM as the train pulled into the platform that had a sizeable number of people waiting for the train. The train that originated from Mailani junction an hour ago, however, had much fewer passengers onboard. We boarded an empty, unreserved general class compartment and were once again transported to a time when these trains were much more sought after and ran a lot more frequently and faster than they do today. An amber glow coming from the incandescent lamps that are usually fitted to MG coaches complemented the nostalgic experience even more. Since it was before sunrise and few people were travelling along with us, we decided to sit next to a group of people who seemed to have boarded from Mailani junction. To our utter horror, we were told that a robbery had just taken place, precisely before the train reached Palia Kalan. Our co-passengers were citizens of Nepal and had possibly come to India on a business trip to buy and sell goods in the markets of Pilibhit and surrounding areas. On being asked by us about what was taken from them, we were told that they had snatched some cash and a few items rather hurriedly since they could not risk getting detected by the Railway Protection Force (RPF) constables who boarded the train at Palia Kalan. Trust me, we were neither prepared for this kind of incident nor expecting it to happen near a reasonably big town like Palia Kalan. However, this is a regular affair in a rather lawless state where thieves and gangsters have a free run at the expense of the common man while the administration and law-enforcement agencies turn a blind eye to this kind of activity. We felt a little reassured, however, upon finding a few armed RPF constables pace up and down the coach after departure from Palia Kalan. Some constables came and enquired the Nepali family and asked them to fill out a form so that investigations can commence and the culprits can be brought to book.

After the eventful departure from Palia Kalan, we became

*Mistic presence @ Dudhwa**Photo courtesy : Somsuhra Das*

mindful of our belongings and prayed that sunrise would happen soon that would relieve us from the darkness that had surrounded us from all sides. The 13 km ride, however, was rather uneventful as we reached Dudhwa (junction) twenty minutes after departing from Palia. Dawn was still minutes away as we descended on the ground-level platform at Dudhwa and were probably the only passengers from the entire train to do so, apart from the two loco pilots up front. The train was standing on the main line, waiting for the Mailani-bound passenger service from the Bahraich side that was due to arrive here around ninety minutes later. This gave us an opportunity to capture an incoming train at Dudhwa as well as the outbound train that brought us here from Palia. Our plan was to spend a few hours at the beautiful yet rustic station of Dudhwa and catch the next train towards Bahraich at 09:07 AM. The station was set in the middle of the jungle and was enveloped in a thin layer of mist when we arrived. As I mentioned earlier, we were the only passengers waiting for a train in the middle of the forest at an unearthly hour in the morning. This did not faze us as we checked our surroundings. It seemed as if the forest had swallowed the tracks curving right towards Bahraich and the line towards Palia seemed no different. Dudhwa was referred to as a junction when a line used to branch out into the forest from here towards the border with Nepal. Before inclusion of this route into the Lucknow division of North Eastern Railway (NER), it used to be a part of the Oudh-Tirhut Railway system, which itself was setup back on 1st January 1943 by merging the Bengal and North Western Railway (BNW), the Tirhut Railway (operated by BNW), the Mashrak-Thawe Extension Railway (also operated by BNW), the Rohilkund and Kumaon Railway (R&K) and the Lucknow-Bareilly Railway (also operated by R&K). In many ways, the Oudh and Tirhut Railway was the predecessor of the modern-day North Eastern Railway which was created by the merger of Oudh Tirhut Railway and the Assam Railway on 14th April 1952, making it one of the oldest railway zones in the country. However, the Bengal and North Western Railway was dissolved in the year 1946 before it was merged with the

Oudh and Tirhut Railway. The MG tracks were first laid westwards from Gonda in the following order –

- i) The Gonda-Bahraich section (60 km) opening on 2nd April 1884
- ii) The Bahraich-Naipalganj (Nepalganj) (54 km) commencing operations from 15th December 1886
- iii) The Katarnian Ghat branch of Nanpara-Mihinpurwa section (24 km) starting a decade later
- iv) The Mihinpurwa-Katarnian Ghat section (43 km) introduced on 25th March 1898.

Back in those days, three separate routes used to diverge from Dudhwa, westwards to the border-post of Gauriphanta and two lines eastwards to the section of Chandan Chauki and the present-day route towards Kauriyala Ghat, a station on the west bank of the mighty Ghaghra river. At present, the route to Kauriyala Ghat remains in use only while the tracks towards Gauriphanta and Chandan Chauki have been abandoned.

The Gauriphanta section was around 23 km long after it branched out from Dudhwa. Four stations served this route, namely, Phulwaria Phanta, Paulaha, Dingania before terminating at Gauriphanta. This branch line passed through a similar forested stretch like the main line to Bahraich. The spur towards Chandan Chauki, another border outpost, was a 12 kilometer long one. It is not clear why the railways decided to close these two spurs. Since these branch lines connected border crossings to Nepal, they must have been used extensively to transfer goods across the border and were thus avenues for trade and commerce which would have added to the prosperity of the region.

For breakfast, we munched on some locally made snacks and savouries like *samosas* and *muri* from the only shop that was present in the station premises. There was no habitation outside the station complex by virtue of the station itself being situated within a forest! So, there were no chances of finding anything else outside the station. The period of time when there was no train that passed through, Dudhwa was accentuated with the sounds of the forest. Meanwhile, my

Quaint Dudhwa station

Photo by author



Point Locking Key

Photo by author

partner of several MG exploration tours, Somsubhra Das, struck up a conversation with the staff who was carrying a large key meant for mechanical locking of point which lay just ahead of the station. He shared his experiences about spotting wild cats twice on the semaphore post just next to the point. We were not sure about the authenticity of that 'story' but it did sound a bit scary in a desolate setup. We chose to sit down on a bench and have the *samosas* that we bought from the shop on the platform and entertained ourselves with various anecdotes. Our friend, Somjit, regaled us with interesting stories about how humans mistreat animals, dogs in particular, and what we should do about it. Since we could not sleep well the previous night despite our fatigue induced by the journey from Shahjahanpur via Pilibhit, we dozed off on the bench for a while which allowed us to recharge our batteries for the remaining journey upto Bahraich. At around 09:15 AM, another Mailani-bound train arrived at the platform, hauled by a locomotive from the Izzatnagar loco shed bearing road number 6686. The train, mostly empty, departed after a halt of around five minutes. For those brief five minutes, the station came back to life, people got down to buy snacks and fill their water bottles for

Mailani bound service with # 6686

Photo by author





Into the thickets...

Photo courtesy : Somsubhra Das

remaining part of their journey. Our connecting train to Bahraich arrived 50 minutes following the departure of Mailani-bound train. We departed another five minutes later and as soon as we left the station, we entered a thick forest. The tracks that passed through the forest were hemmed in by dense vegetation on both sides. It was a unique experience to ride through an actual jungle after spending a considerable chunk of our time in concrete jungles. The ride through the forest lasted around thirty minutes and was nearly 10 km long. A permanent speed restriction of 30 kmph was imposed in this forested segment for the area being a wildlife corridor. The ride, although enjoyable, felt a bit monotonous after a while since we were passing through vegetation so dense that very little sunlight could penetrate through the canopy and reach the forest floor. This dampened my mood after a while, and I was kind of hoping for the jungle trail to end! 7 km after Dudhwa lies another abandoned station of Sonaripur. Yet our train stopped here and surprisingly some people disembarked although none boarded from here. We continued on our way after a brief 2-minute halt here. A few minutes later, the forest gave way to vast, open grassland that stretched for miles on both sides. This lasted for some ten minutes before we reached the station of Belrayan where we halted for around three minutes. This allowed a break from monotony, which was much welcome.

We were running parallel to the international border with

Belrayan station

Photo courtesy : Somsubhra Das



Tikunia station

Photo courtesy : Somsubhra Das

Nepal and were approaching the then newly constructed Girija barrage over the mighty Ghaghara river. But we had to stop at three more stations before that. First of the lot was Tikunia, located another 6 km from Belrayan. Tikunia used to be an important station before the barrage across the Ghaghara River was constructed in the late 90s. In fact, before the barrage, trains could not cross the width of the Ghaghara which was a vast and wild to resemble a boundless sea bordering the tracks. Earlier, Kauriyala Ghat was the western terminus before crossing the river by ferry, which used to take copious time (seven to eight hours, as per some records) owing to the great flow and the amazing width of the river. Upon reaching the other side passengers used to board the train again at Katerniya Ghat station, on the east bank of the river. All this was made obsolete once the construction of the barrage was over allowing both rail and road transport to cross the colossal river. On one occasion, seasonal floods had swept away the station building on the west bank just leaving a few traces of the station ever being there.

Beyond Tikunia, therefore, is a new alignment that was built after the new barrage was made. Hence, two more stations were added to the tally - Kharatiya Bandh Road and Manjhra Purab. Both stations are located adjacent to the reservoir created by the construction of the barrage. Kharatiya Bandh Road was more of a one-horse-town type of station, where the station board was almost covered with vegetation, rendering it almost impossible to view if one is not careful.

Almost covered...

Photo courtesy : Somsubhra Das





Girija Barrage

Photo courtesy : Somsubhra Das

Manjhra Purab was the larger of the two, where a reasonable number of people boarded and deboarded the train. Located just before the dam, our train halted here for a little more than usual, perhaps waiting for another train to clear the line for ours. But, unfortunately, that did not happen, and we were given the go-ahead after waiting for around 10 minutes. After departure, the train proceeded cautiously to cross the barrage at a rather sedate speed of around 20 kmph. This allowed me to get a good view of the reservoir which looked like a vast body of water covering everything upto the horizon. It must have been a frightful experience for the passengers to cross the river in full spate, I wondered. It must also be noted that the dam site is the location of the confluence of two rivers, Kauriala and Girwa, (distributary of the Karnali river in Nepal) which flow later as the Ghaghara beyond the barrage.

Leaving the Girija Barrage behind, we move towards the next station of Bichia, located 14 km from Manjhra Purab. The village of Bichia lies within the boundaries of the Katarniaghat Wildlife Sanctuary, a haven for denizens of the forest, encompassing an area of ~400 km². Established in 1975, it is also a part of the larger Dudhwa National Park and together with the Kishanpur Wildlife Sanctuary forms the Dudhwa Tiger Reserve. The ride after Bichia becomes more interesting since the tracks pass through the core area of the Katarniaghat Wildlife Sanctuary and if one is fortunate, animal sightings can also take place. 10 km after

Full patronage @ Bichia

Photo courtesy : Somsubhra Das



The Jungle safari

Photo courtesy : Somsubhra Das

Bichia is the village of Nishangara, deep inside the forest. Travelling on the train after Bichia seemed as if we were on a jungle safari, with tall trees lining both sides of the track and the thick foliage enveloping us. Another 8.5 km from Nishangara was Murthiha. An interesting fact about these stations was the presence of passengers in good numbers despite being located well inside a protected wildlife sanctuary. Once the train stopped, these stations witnessed a mad scramble to board first, without letting the ones who were supposed to deboard there to get down first, as is the convention. However, the train did not feel crowded, at least not our compartment, despite the presence of many passengers who had boarded from these stations. Along side the passengers, we fortunately found some vendors onboard selling *masala muri* and nuts which looked just enough to put pay to our appetite. To our surprise, we discovered Nepalese currency also doing rounds amongst vendors and mortals implying the prevalent exchange of currencies, not in the most organised of ways though, across the borders which lay in close proximity. I was able to recall an important point. These people are so reliant on this line for their needs that if the Railways decides to close this route on a whim (which it has, on many occasions previously), thousands of lives would be adversely impacted.

The rest of the journey was considerably uneventful and took us through farmlands after exiting the Katarniaghat Wildlife Sanctuary while crossing Kakraha Rest House and

Crossing @ Mihinpurwa

Photo by author





Signage towards the sanctuary

Photo courtesy : Somsubhra Das

Mihinpurwa stations. On the way, one can also spot conspicuous signages for guiding tourists to the Katarniaghat Wildlife Sanctuary. We were quickly approaching one of the most important stations enroute Bahraich – Nanpara Junction. Not only was this station constructed much before the rest of the main line (it being a part of the Nanpara – Nepalganj Road route) but also was a major railway town whose importance had reduced to a great extent mostly due to degradation of MG services over the years. A kilometer



Another crossing en-route

Photo courtesy : Somsubhra Das

before Nanpara Junction, we saw the spur to Nepalganj Road branch off to our left, taking a huge eastward curve. By the time we arrived at Nanpara, we were famished and looked for something to eat. The main platform at Nanpara has a large Banyan tree that provides shade from the sweltering heat of the summers. We found a couple of local vendors selling some hot *poori sabji*, which we gulped down in a haste. A few

The Nepal connection...

Photo courtesy : Somsubhra Das



Nanpara Junction

Photo by author

fruit-sellers were doing brisk business due to the temporary influx of a large number of passengers at that point of time. Our scheduled halt here was only for 10 minutes, but we saw that the train staff were also having their lunch and we understood that this halt would be a little longer with Bahraich another 35 km away from here. After another minute or two, we saw the Guard wave the green flag which meant we were ready to leave. The next halt was Matera, 9 km from here. The crew after having their lunch were perhaps eager to reach Bahraich and after clearing the points immediately went for full throttle. The locomotive defying its age covered the next 9 km in less than 10 minutes, which although wasn't a big deal once upon a time when trains regularly used to hit 80 kmph on these very tracks before they were deliberately slowed down and phased off, never to burn the tracks again. It felt as if the locomotive as well as the Loco Pilot were trying to please us one last time before we were scheduled to get off at Bahraich with its acceleration capabilities and speed. The halt at Matera was a brief one and we resumed our journey again. The penultimate station before Bahraich was Risia, 12 km from Matera. This time too, the crew stepped on the gas and notched the locomotive to a good speed. That part of the route was rather bland - large open grasslands with a few farms in between. That was what we got in terms of scenery after Nanpara. The train had become a lot less crowded by then and almost all passengers were able to find a seat for themselves after the train left

Matera station

Photo courtesy : Somsubhra Das





Banner type Repeater Signal

Photo courtesy : Somsubhra Das



End of roads @ Bahraich

Photo courtesy : Somsubhra Das

Nanpara. If the service had not been curtailed to Bahraich, I'm sure not many seats would have been left empty. We reached Risia soon after. A large number of people deboarded here and only a handful of passengers were now left to cover the 14 km to Bahraich, along with us. As the train left Risia, we realised that we were nearing the end of a long and arduous journey onboard a MG network that has been decimated now. What used to stretch for thousands of km across the vast plains of UP, Bihar, West Bengal and parts of Assam, not to mention Rajasthan, Madhya Pradesh and some southern states like Tamil Nadu and Karnataka, has now been reduced to only a few hundred route km. Moreover, thousands of marginalized people were dependent on these small but sturdy trains which provided connectivity to markets in the towns and cities, linked small villages and hamlets in far-flung areas to these places. Sudden closure of those routes citing gauge conversion hugely inconvenienced the people, most of who live below the poverty line and thus were not be able to afford the higher fares of road transportation ultimately affecting their livelihood.

The semaphore quadrants

Photo courtesy : Somsubhra Das



With our heads clouded with myriad thoughts, we did not realise that we were about to reach Bahraich in less than two minutes. We were able to see pucca structures and hints of urbanization as we inched closer to Bahraich. We gathered our belongings and waited for the train to come to a stop before we could get down. Bahraich did not look like the important station that it used to be considering the fact that there were no signs of gauge conversion back then. It broke our hearts to imagine that if we return here a year later, we might already see a Broad Gauge train waiting to ferry passengers towards Gonda and beyond. Whatever happens, I promised myself to return to these parts sooner than later to travel on these tracks once again and experience the joy of travelling in MG, which is soon to be extinct, possibly forever! Having completed the longest MG travel on a single tour, it was time for a temporary interregnum on the travel through the heartlands of Uttar Pradesh. We boarded rickshaws from the station to get to the bus terminal through a vibrant marketplace – alive with vendors and buyers. The trio parted from here as Somjit went to Lucknow on his way to Kathgodam before returning home while the two of us went to Gonda to spend the night there, from where we went to our domicile of origin – Kolkata, not before a short railfanning session at Varanasi. This epic journey not only gave us an insight of the MG operations in our country but also made us richer with the experiences we gathered. Somehow MG had got into our blood and we were eager for more trips of MG before they disappear from the railway atlas of our nation. The left-out part of the route, i.e., Nanpara-Nepalganj segment remained in our wish list and it took nearly three long years for Somsubhra Das to get back here and fulfil our unfulfilled dream of completing the circuit. Stay tuned for the last chapter of this series by Somsubhra Das in our forthcoming issue.

Cover photograph courtesy : Somsubhra Das



The Patalpani Hike

Visiting Patalpani-Kalakund

J L Singh

Vikas Chander, perfectionist rail modeller and rail enthusiast, visited the Patalpani-Kalakund section in 2015. His words, reproduced below, are perhaps the most apt introduction to any write-up on this section:

The waterfalls at Patalpani (literally "Water of Hell" in the Hindi language) have fascinated and intrigued many over the years. Be that as it may, that is not what took us there but the fact that running right past and within touching distance of the falls is one of the few remaining though fast disappearing Meter Gauge (MG) lines of India. Patalpani falls on the Mhow-Akola rail line in Central India, once part of an extensive MG network but today looking ahead to an early demise in the not-too-distant future.

In 1870, His Highness the Maharaja of Indore, Sawai Tukoji Rao Holkar the Second, offered a loan of £ 10 million sterling for the construction of a railway line to his capital city of Indore. A quick survey was made and Khandwa on the Great Indian Peninsula Railway main line was chosen as the junction point. The alignment was to pass through Sanawad and Kheree Ghat on the Narbada and then by way of the Choral Valley up the slopes of the Vindhya to Indore.

This visit by Vikas Chander and his group was the catalyst that the Rail Enthusiasts' Society (RES) needed to plan a trip

of its own to this line. On the 27th of October 2017, 8 die-hard members trekked from Patalpani to Kalakund. Going past high viaducts and old bridges, four tunnels and a number of cuttings, the pleasure of the hike was only matched by the enthusiasm of the participants. It was at the end of this trip that the Society took up the issue with the Ministry of Railways of this section being retained as MG only. The result is that although the entire section from Khandwa to Ajmer is now converted to Broad Gauge (BG), the BG alignment for this part of the line is different so that the MG section is now retained as a heritage line. It is gratifying that the Western Railway in whose jurisdiction the section lies is now running a heritage train from Mhow (renamed Dr. Ambedkar Nagar) to Kalakund and back. Although it was proposed to run this train with a steam locomotive, it is diesel loco hauled.

Coming to the RES hike, besides myself, eight staunch rail enthusiasts namely Mr. and Mrs. Sanjoy Mookerjee, Mr. and Mrs. Arvind Chandra, Vikas Singh, Mani Shaunik among others assembled at Indore on the 27th of October 2017. Coming from Bhopal, Delhi NCR, Kolkata and Indore itself, the group included two ladies as well. While the city of



Train no.52693 crossing the Advance Starter signal of Patalpani. Image courtesy: Archives of RES

Indore slept, the eight got into two Innovas and sped through the deserted streets of the city, directly towards the Patalpani waterfalls that are a short distance from the station towards Kalakund. The idea was to start early at the falls itself so that they could photograph Train No. 52963 as it chugged out of Patalpani station. This section was Meter Gauge (MG)

Members of Rail Enthusiasts' Society

Image courtesy: Archives of RES



all the way from Ajmer to Khandwa in the not too distant past and provided the crucial link between the MG networks of Northern and Southern India. As a result of the Unigauge programme of the Indian Railways, Ajmer-Mhow was already Broad Gauge (BG) except for this short section from Mhow to Kalakund.

There was a nip in the air when the group arrived at Patalpani. This was no deterrent and members made their way to the rail track to seek vantage points from where photographs could be taken. One disappointment was that with the monsoons over some time back, the Patalpani waterfalls were virtually dry and only a few trickles of water were any indication that the falls must have been a deluge a month or so back.

The average gradient on the section is 1 in 40. Although a fairly stiff grade for a train, it is quite gradual for the hiker and trekking down is virtually like walking on flat ground. In any case, being on a downgrade for the entire route, it was a pleasant walk all the way. It was possible to walk on a narrow path on the side of the track most of the time, but at many points this path disappeared and you had to walk directly on the track. For any other person undertaking a similar hike, it is recommended that you wear hard-soled shoes so that the ballast does not trouble you.

Highlights of the hike were Ravine Viaducts Nos. 1 and 2. Of these, Viaduct No. 2 has been rebuilt in 1974 on a new alignment with 50-meter high steel trestles. The original old masonry piers can still be seen. Viaduct No. 1 is on its old masonry piers. Fixed ladders on each of the 4 trestles of Viaduct No. 2 go all the way to the viaduct floor. This affords detailed and easy inspection of the structures.

The line goes along the Choral river, crossing it at two points. There are thus two bridges over the river. Like the viaducts, one is on steel trestles while the other is on masonry piers. The section also has 4 tunnels of which tunnel No. 2, at 111.2 meters, is the longest. All the tunnels have a stone at the entrance that gives details of the tunnel, such as tunnel number, date of construction, location kilometre, age and length. Along with the construction of the line, the tunnels

Ravine Viaduct No. 2

Image courtesy: Archives of RES





Ravine Viaduct No. 1

Image courtesy: Archives of RES

were built between 1874 and 1878 as were the viaducts and bridges.

The line is well-maintained with a good ballast cushion, neat and clean and well-spaced sleepers. Most of the sleepers were steal-trough and one of them had "1957 H W ENDEL" embossed on it. At some places, concrete as well as wooden sleepers were seen. These were mostly on culverts and at points and crossings. Good to note that the staffs are continuing to do a good job of maintenance and upkeep.

It was noted during this hike that since the next train from

Tunnel No. 4

Image courtesy: Archives of RES



Iron Sleeper - 1957 H W Endel

Image courtesy: Archives of RES

Kalakund, No. 52976, for the return journey to Mhow was leaving only at 15.22 hrs., the trek was leisurely and gave ample opportunities for photography and relaxation. One good opportunity was Train No. 52964 which was shot coming out of tunnel No. 3. The group reached Kalakund only after midday.

Kalakund is a sleepy little station in the middle of nowhere, but it has a station building and railway staff quarters. It is important as all trains going up the incline to Patalpani have to pick up their banker from here. But with the decrease in traffic, the vendors are facing difficulties as their clientele is reducing. Two items that are the staple at the station are custard apples and kalakand, an Indian sweet made primarily of milk and sugar. The latter is perhaps a common item among the vendors owing to its resemblance to the station's name and the locals taking advantage of that. The station staff members were very hospitable and treated the group to ample quantities of both, custard apples and kalakand.

Train No. 52976 arrived a few minutes late and left at 15.30, about 8 minutes late. The train was hauled by Loco No. 6726 and had Loco No. 6735 as its banker. Both were YDM4 diesels. Before Project Unigauge of the Indian Railways led

Kalakund Station

Image courtesy: Archives of RES





Station masters office - Kalakund

Image Courtesy: Archives of RES

to the slow but sure demise of the MG, the YDM4 was the mainstay of all train operations, both passenger and freight, on MG. At its peak, there were about 550 of these locomotives in service.

The train itself had only 2nd class general coaches and all six of these coaches were full; it was difficult to find sitting place. All the same, the return was uneventful and we reached Mhow only 13 minutes late at 16.43 hrs.

Three members of the group made a beeline for the diesel shed to look for the 3 derelict steam locos that Vikas Chander had found on his visit. To their horror, they could not find them and feared that they had been cut up and sold as scrap. It was, therefore, very satisfying to learn that one loco each had been sent to Dahod, Ratlam and Varanasi for display outside the stations of these cities. While there is nothing like a locomotive in steam, preserving it on a plinth is a better option that disposal as scrap.

In 2017, this shed had 8 working YDM4 locomotives. There were 7 other condemned YDM4s in the yard. RES has made



Vacuum powered Turn-table @ Mhow

Image Courtesy: Somsubhra Das

a plea to the Ministry of Railways that in the next 5-10 years, not only these YDM4s, but all ALCO diesel locomotives will go the way of steam. We should not make the same mistake as we did with steam and preserve at least 2-4 Alco locos of each type that ran on the railway. The YDM4 being the most numerous on MG needs special attention.

Another interesting heritage item at Mhow is an old Meter Gauge turntable. Cowan-Sheldon built and installed in 1950, age is not what makes this turntable unique – its special feature that it is vacuum operated. Using the vacuum of the loco itself, its turning action is vacuum actuated. RES has also brought this to the notice of the Ministry of Railways and it is hoped that the turntable is preserved at some place like the Rewari. The present status of this turntable is not known though.

It is strongly recommended that not only rail enthusiasts but any person fond of travelling, travels on this section on the heritage train. An even better option is hiking as we had done in 2017.

Cover photo from Archives of RES

Image courtesy: Archives of RES





જિર - SASANGIR

Iron Horses in Lions' Kingdom

Rudranil Roy Chowdhury

Exploring Gujarat's famed Meter Gauge network was in the bucket list of Roy, a protagonist from Team TrainTrackers, for quite a sometime as it had a lot to offer, both in terms of history and landscapes. While going through the archival documents, the various facts and facets about this once extensive network fascinated him to pen back-to-back articles on the Gujarat meter gauge (MG). If the article published in the last issue (*Emergence of Gujarat Meter gauge*) was a metaphor of collated data carrying a gamut of information with intricate details from the 1850s, this article is rather the principal driving force and precursor to the previous one, encompassing a conglomeration of those moments of joy exuberated during the day long venture on a beautiful MG ride from Jetalsar to Veraval. Till 2016, parallel departures of broad-gauge and meter gauge trains were a very common sight at Ahmedabad station. But the nationwide Unigauge madness have had its toll on the MG routes originating from Ahmedabad as well. By the time Roy visited, one had to travel a good 324 Km from Ahmedabad to Jetalsar to catch a glimpse of MG Iron Horses.

Likewise, after reaching the city of Baroda, now Vadodara, once the state capital of the Gaekwads in the pre-

independence era, on a November morning, it was a long day ahead for the two patrons from Team TrainTrackers – of whom one was Mr Somsubhra Das (Sam) while the other being the storyteller himself. Multiple plans had been chalked out to make the trip a fruitful one with planned ride on almost all the gauges of Indian Railways (IR) – the Broad gauge (BG), the Meter Gauge and the Narrow Gauge. From catching hold of the narrow gauge (NG) trains at Miyagam Karjan and Vishvamitri to visiting Pratapnagar NG DLS and obvious framing of broad-gauge actions featured in their itinerary. But the cornerstone of the tour was exploring the Gujarat MG. Thus, Roy keeps the NG journeys and Pratapnagar DLS visit in abeyance for later. After spending some hours at Miyagam, it was time to catch the evening intercity to Ahmedabad. They reached Ahmedabad without much hassle and checked in at the Retiring Room at Ahmedabad for taking well-deserved few hours break before catching the night service. The action-packed day had gone according to the plan. Now, the Somnath Express was about to take them closer to their dreams of catching alive the Gujarat MG actions and leaving them with a spectrum of memories to cherish forever. As per plan, Sam was to catch a

morning MG service from Junagarh whereas Roy got down ahead of his partner at Jetalsar to take the MG passenger from thereof. Both of them will meet again at Veraval in the evening after their respective MG rides behind those little Iron Horses passing through the Lions' Kingdom.

It was around 3.30 AM and the night mail was roaring the tracks of Kathiawar Peninsula when a sudden push from Sam, who had not slept much, helped Roy to wake up for deboarding at his destination. Bidding adieu to his partner, Roy got down on a dark and misty Jetalsar station and it seemed he was the only passenger to disembark in those odd hours. Weather was just about cold which compelled him to move to the waiting hall inside the beautiful British built structure. It was still much time left for the morning passenger and with no vendors around and all tea stalls shut, he decided to doze off for some more time. Meanwhile, several calls from Sam had been silently buried under deep slumber. Around 5.30, Roy woke up to discover that calls from his wife had also fallen on deaf ears! However, after a chat with the callers, he freshened up and got ready for the day. A cup of tea with some snack set the tone, following which, he visited the adjoining MG platform where the rake of the Jetalsar-Dhasa service, wet with morning dew, was waiting for its passengers to board though its power was still missing. Roy decided to take a closer look at the century old Jetalsar station building built in traditional design and possessing signature style of the erstwhile BB&CI station buildings which was magnificent to say the least. Jetalsar is a village in Rajkot district with settlements of railway personnel who has always outnumbered locals over the years. It is presently the headquarters of Bhavnagar division of Western Railway and an important junction since the advent of Princely State Railways dating back to the 1880s. Jetalsar belonged to the Gondal state where Maharaja Natwarsinhji, a Gondal state royal, had built a palace.

Classic customary architecture of the station from the Raj era with low lying platform and a meter gauge train engulfed

Jetalsar Station Building



The meter-gauge platform @ Jetalsar

in dense fog summed up the early morning scene – a treat indeed for old school railfans like Roy. A cup of hot tea completed the nostalgia. While sipping in, he glanced at the considerably large misty MG yard adjacent to the station, full with decommissioned rolling stocks waiting to get scrapped. He was thinking about the sad end of the famed Kathiawar Union railway which once ruled the region, now ripped apart to make way for the future. This line was among the first of its kind for the erstwhile Gondal state, when a 119 km stretch was constructed from Dhoraji to Dhasa and commissioned in the 1881, where it met with the then Bhavnagar State Railway network. He was indeed excited to travel on this historic line. While immersed in these thoughts, a shrill toot from a distance shattered the tranquillity of the dawn all of a sudden as the owner of that honk slowly emerged from the fog – an YDM4 #6720 from Sabarmati DLS – the power of Roy's train for the day. Although, it was about seven in the morning, still it was haze all around with no sign of the sun – as it happens around this time of the year in these western fringes of the country. The famous *bhajiya* stall – a speciality of Jetalsar, was still

Power for the day...



under shutters and looked like Roy would not be having a chance to taste that this time round. In the meantime, the loco got attached. After taking a few clicks of the loco, Roy boarded the train. He carefully chose to travel in the last coach to get a complete view of the train while on the curves. As the pointsman shifted the levers, the semaphore quadrant put its nose down at 7.30 sharp. Then a dense cloud of holy smoke erupted from the YDM4 with its Short hood in front as the much-awaited journey began with a customary hoot.

The train with fair patronage slowly gathered momentum amidst foggy conditions accompanied by arid and uneven landscape with not much of vegetation on display. Fresh, cold air permeated the train compartments as Roy took a deep breath to gear up for door-plating. He was ecstatic as it was indeed a dream come true for him. For locals and many others, it may not make much of difference to travel on an MG train as a part of their daily routine but for Roy it reminded him of his childhood days when he had travelled on an overnight train to Jodhpur from Delhi on a MG First Class Coupe way back in 1994. Memories of his ride through the Pamban bridge on a MG passenger in 1990 also got refreshed. Those were memories to savour. Rumbling on, the first halt at Jetpur suddenly appeared out of the fog with its charming cute 'station building'. Jetpur was also known as Navagadh, a town with decent population located on the western bank of Bhadar river. When the railway first reached Jetpur in the year 1881, the census showed a headcount of 18000 at that time. Jetpur was gifted to the Kathis of Vala tribe by the Nawab of Junagadh. This little township is famous worldwide for the Badhni clothes. Leaving Jetpur behind, the train chugged through the winter haze with the overall topography remaining same except for the vegetation seemingly increasing a bit. As the train passed Vavdi & Vadia Devli, Roy saw miles of cotton fields running parallel with the railway track. By this time, fog had almost got cleared and sun was preparing to start its show as the train crawled into Khakharia where the first crossing for the day occurred with the passenger service from Dhasa. This was the only crossing

The first stop @ Jetpur



Crossing with Up train at Khakharia

on the 104 Km journey from Jetalsar to Dhasa Jn. Soon a YDM4 in Sabarmati colours showed up with a fully patronised passenger service. And like the most common practice of IR in single line operations, it was first come last go. After the token exchange train continued its journey forward.

A striking feature of this line was its dead-straight alignment. Major part of tracks between Dhasa and Jetalsar seemed laid on a straight line. Next station Kunkavav featured a beautiful fabricated iron made structure built as a shed for passengers along with a century old overhead tank built on a stone masonry structure. This station served as a junction for a short span when a 20 km branch line upto Bagasara was constructed by Gondal State Railway in the year 1936. As the train moved further, Roy noticed the signs of the inevitable – the Gauge Conversion (GC) as huge heaps of stone ballasts meant for BG tracks lay adjacent to the tracks implying the imminent. A local resident and a daily passenger, Md. Ashraf Aslam lamented about the probable closure of the route for GC as road transport costs would burden people like him. It seemed to be hard days ahead for

Kunkavav station





The dead straight alignment

these people living in impoverished villages until the railways return after GC. Aslam also stressed upon the fact that MG network was lifeline for entire region which was left to die a slow death in the name of development while the actual fact was something else – it was all about forcing the people to take to the dearer road transport. In between this conversation, their train passed Lunidhar. Cotton fields had vanished long back. Thorny bushes and shrubs had taken over the landscape as the train approached another beautiful and important station Chital – once a prosperous township and one of the most important seats of the Vala Kathis who made the first overtures to the British Government in 1803. During the introduction of Dhasa-Dhoraji line of Gondal State railway in 1881 Chital had a population of mere 4000.

Meanwhile it's already over two hours of journey for Roy and he began to feel the hunger pangs. Surprisingly, not a single vendor was spotted in the entire journey upto Dhasa except those on the stations – a rare scene indeed in IR. Soon after Chital, the train crossed a dried up Thebi river with rocks jutting out from the bed along with sprouts of thorny bushes. Soon the train reached Khijadiya Jn. which is more of a satellite settlement as the main village is located at a distance from the station. Khijadiya rose to importance in

Beautiful Chital station



Khijadiya Junction

1911 when Gondal State started construction of a key 60 Km branch line between Khijadiya and Dhari via Amreli. By 1913, the section upto Amreli was completed and opened to public. Later, by 1916, the line ultimately reached Dhari. After a precise halt, his train continued journey towards Lathi which used to be an erstwhile princely state. Lathi served as an important seat of the Gohils or Gahlot dynasty which was ranked as fourth class state in the Kathiawar Union. Lathi is also the home of Sursinhji Takhtasinhji Gohil, popularly known by his pen name, Kalapi who was a great poet and the 23rd Thakor of the Gohils. There is a small museum named Kalpati Tirth at Lathi where the works of the royal poet can be seen. Lathi is now a municipal township in Amreli district.

From Lathi it was another 15 minute ride to Dhasa where the train will end its journey. Dhasa evolved in the railway map as early as in 1881 when the Bhavnagar State railway decided to construct a 24 Km branch line between Dhola and Dhasa with one intermediate station Mandava. This line later met with Gondal State Railway extension as mentioned earlier. Dhasa became prominent railhead by 1912 when a strategically important 54 Km long branch line to Kundla was commissioned by the Bhavnagar State. And by 1921-22,

Lathi station





MG and BG platform @ Dhasa

the line from Kundla was further extended to the coastal town Mahuva making it even more busy and important route. On reaching Dhasa, the first chapter of Roy's MG journey had come to an end.

The more interesting part of MG travel awaited Roy who was upbeat about it. The same loco would now reverse and take the train to Veraval. Scheduled departure of the train after an hour not only ensured that Roy finally broke his fasting spell with some refreshments from Dhasa but also presented ample scope of photography and exploring the station premises. The Dhasa-Dhola and Dhasa-Mahuva section was already converted to broad-gauge which resulted in limited MG actions ex Dhasa. Wiser with the previous experience, Roy couldn't afford to delay his lunch anymore. So, he indulged in an early lunch and now he was all set for the onward journey to Veraval. The train was to follow the same route until Khijadiya from where it would diverge from Gondal State railway to move towards Amreli. Meanwhile, only one BG train passed by Dhasa which showed very limited traffic movement in the section with just a lone passenger service which appeared from Dhola side. Freight seemed hard to come by as well. One remarkable thing

Majestic Dhasa Jn station building



The Semaphore Quadrants

which happened was majority of the passengers who got down from the BG train were on transit as they flocked together to get inside the waiting 'choti line ki gari' making it almost full.

It was time for the MG train to depart and the last leg of Roy's MG journey started sharp at 11.55 AM as # 6720 growled once again with a change of crew. The journey to Veraval had started and this time with Long hood in front. After Lathi while entering Khijadiya, Roy noticed a series of beautiful semaphore quadrants, all in working conditions which made his day even better. It was a wonderful sight to savour and his regret of not photographing it during the onward journey is now fulfilled. From Khijadiya Jn, the train entered the Amreli side following the Thebi river towards south. This time around, Roy did find some on-board vendors selling snacks and other products as well. The dynamics of economics is one good reason which can change lifelong practices whenever and wherever applicable. Jetalsar-Dhasa section having low patronage with diminishing number of traffic over the years had discouraged the vendors as they could hardly find any takers. But in contrast, the Amreli-Veraval section still attracts a good

The Railway settlement @ Amreli





Amreli Para Halt station with more passengers than Amreli

patronage coupled with higher number of services implied that vendors were in the game.

The train reached Amreli – a major railhead of the bygone era. A spectacular and notable station building welcomed Roy. Amreli aka *Amarvalli* or *Amarpalli* is an important township with an airfield, boasting of a rich history dating back to 1780s as it shot into prominence when the Marathas established their reign here. Later the Gaekwads of Baroda made Amreli their headquarters for 'Kathiawar Pranth'. Amreli primarily is now a commercial centre known for the manufacture of *khadi clothes*. Roy noticed a well maintained cute looking inspection trolley resting at the end of platform. Within a short distance from Amreli, came a halt station named Amreli Para with minimal infrastructure but with amazing patronage implying that this station might be serving as the main station for the Amreli city. Soon after Amreli Para, train crossed Thebi river once again. This time, traces of water can be seen. Within a short span, the train crossed another river, Shetrunji, which had also run dry. The train chugged on as a quaint Chalala station was quickly passed by. Chalala may have been insignificant but a gradual change in topography was noteworthy. Low and arid black rocky hills on both sides of the tracks had suddenly made their presence felt. It was indeed a welcome break from the routine rural scenes.

Rocky terrains of The Ginnar Hills



Crossing @ Dhari

Next in line was Dhari where the erstwhile Bhavnagar State railway network terminated. Strikingly enough, the station was devoid of the customary station building. The first crossing of the route happened here with a Dhasa bound service. A train headed by a Sabarmati YDM4 # 6304 appeared from south. Soon after the token exchange, both trains embarked on their respective journeys. Till then, Roy hadn't come across any signs of GC in that section with station areas and lines were under regular maintenance. The topography still remained rough and jaggy but greenery was slowly gaining ground though the rivers remained dry and arid. The train next halted at Bhader – another lonely station but loaded with greenery resembling an oasis in the middle of a desert. As the train moved further south, post Jetalvad, the surroundings keep getting greener indicating that Roy had truly stepped inside the Lion's Kingdom.

Within a while, the train arrived at Visavadar Junction – still a prominent MG junction though lacking a station building. It was in 1911, when the Junagadh State Railway had decided to expand its network and a 42 Km branch line between Junagadh and Visavadar was sanctioned and by 1912, with the completion of the work, Visavadar got featured in the railway map. Later in 1929, another 47 km

Visavadar Junction





Entering the Gir forest...

branch line between Talala in the south and Visavadar was sanctioned and work commenced. But the line reached Visavadar not before October 1937. Work had got delayed due to the dense forested section in between. The construction of another 32 Km missing link between Visavadar and Dhari was also sanctioned in 1929 and work was completed by 1932. Hence Visavadar got transformed into an important junction of the then Junagadh State railway.

Visavadar station was more like a popup station set amidst the greens. Roy's expectations of a crossing here vanished in thin air just like water on the thirsty river beds. It was time to march forward. Scattered hills had already begun to frequent the sight and the ambience had changed for good. There was a noticeable incline after Satadhar station until Sasan Gir with Kansiya Nes sandwiched in between. Kansiya Nes was the station located at the highest point in between, where second crossing of the journey occurred amidst dense forest. # 6258 with the Dhasa bound service from Veraval was waiting patiently to give safe passage to Roy's train. Coming back to Sasan Gir, the station seemed to be set right in the middle of the woods with the Girnar Hills keeping company. A large band of tourists boarded the train from here for Veraval. As per the locals, animal sightings were no big deal on this stretch as deer, monkeys and the famous Gir

Crossing at Kansiya Nes



Amidst the Gir Forest

Lions often frequent the tracks. In 1936, first section of the 47 km branch line from Talala to Visavadar was completed upto Sasan Gir – a distance of 18 Km. Construction of the remaining 29 Km was completed in 1937, as mentioned earlier. The journey through the forest surely had an element of adventure in it and Roy enjoyed every bit of it. The lower quadrant nodded down indicating it's time to proceed. Sasan Gir had a striking resemblance with the aura of the Dudhwa station in Uttar Pradesh!



Sasan Gir Station

The train then crossed Chitradvad which looked more like a deserted station in the middle of nowhere with desolated structures but with a good number of passengers boarding-deboarding. Although the clock struck five, the sun was still in no mood to wind up the show for the day. Roy exactly wanted the sun to be in the horizon, at least, until Talala –

The 'Jungle Safari'..





Talala - a busy meter gauge junction

the place for a triple crossing of MG trains. Soon Roy's train made it to the most happening MG junction of Gujarat. The moment of pure ecstasy had arrived! A Junagadh bound service from Veraval with # 6299 YDM4 in the lead was already waiting at Talala which was later joined by another service from Veraval to Delvada with # 6326 as its power. Roy looked to be on cloud nine. A 'mission accomplished' feeling had smitten Roy which looked surreal in the world of fast shrinking MG network. He got so much engrossed in photographing the precious moment that he nearly ended up missing his train for completion of the journey upto Veraval.

Now it's just a matter of mere 25 Km to reach Veraval with one more station in Savni to go. But the train took nearly an hour. Veraval - once a part of Junagadh kingdom experienced its first railway action way back in 1889 when the line from Jetalsar to Junagadh was extended further south to this coastal town by the Junagadh State railway completing the 108 Km connection between Jetalsar and Veraval. This line was later converted to broad-gauge. This port and fishing town has a lot to offer its visitors apart from the famous Somnath Temple, about 6 km apart. The sun had begun to lose powers by then as the 52930 Dn passenger from Dhasa finally arrived Veraval. A curious Sam was eagerly waiting to meet his pal after a long day.



A service from Delvada reached Veraval

Although the MG terminated at Veraval, the BG line continued upto Somnath. In spite of all available modern facilities, Veraval station still had an old age charm about it. The MG trains were still serving Delvada, Kodinar, Dhasa and Junagadh back then. But the Unigauge onslaught would hasten the downfall of those routes in no time perturbing the socio-economic balance of the people residing over there. Sometimes, it's nothing one can help but to accept what comes their way. Meanwhile, Sam had already arranged Retiring Room to cool the heels after a hectic day. After a bounty full of *Gujarati Thali*, both boarded the Somnath Express for Ahmedabad with a vow to come back again to witness the mini marvels in action again. Truly, it was a journey one of a kind!

All photographs taken by author only unless mentioned otherwise.



MADURAI

12638

12637

CHENNAI
EGMORE

PANDIAN

SUPER FAST
EXPRESS

The Golden History of the Great Grand VIP of Southern Railway

Arun Pandian M

At the cusp of the initial development of railway infrastructure after attaining independence, when towns and cities were developing at a frenetic pace, the requirement of connecting major towns and cities to the state capital increased as well. Madurai was one of the faster developing towns in Tamil Nadu and by 1965, the demand for an overnight fast connection between Madurai and Chennai (then Madras) was gaining momentum, as back in those days, very few overnight trains were plying between Madurai and Madras. Most of the trains that were running between the two cities got filled up at Madurai itself and there were tales that passengers had to wait for hours and even days on end to obtain reserved berths on trains between Madras and Madurai. In order to fix the passengers' inconvenience, Southern Railway (SR) decided to operate a dedicated overnight express train between Madurai and Madras. And in 1969, the Railway Board approved Madurai division's proposal. Amidst insurmountable challenges, SR finally announced a new train which would act as the brand ambassador of Southern Railway's Madurai division. Based on the demand of passengers from various levels, SR came up with a plan to operate a train with 16 coaches which,

back then, was unprecedented in the history of Meter Gauge. The Integral Coach Factory (ICF), Perambur, manufactured brand new rakes with bottle green livery along with two vermilion stripes, one on the top of the coach windows and another beneath them. This rake had larger fans with shutter windows, which were newly introduced features at that time. Since the number of coaches was more than the usual, SR planned to operate this train with dual steam locomotives (YPs from the Madurai steam loco shed). So, the train used to run with twin YPs between MDU (Madurai) - VM (Villupuram) while a single electric locomotive, YAM1, used to take charge for the remainder of its journey to Chennai. It is said that in those days, this train was allotted a dedicated pair of locos which were nicknamed as *Raja* and *Rani*, meaning King and Queen, respectively. The departure was scheduled to be at 19:35 from Madurai with a 06:45 arrival at Madras while on the return leg, a 19:05 departure from Chennai allowed Pandian to arrive Madurai at 06:15. SR numbered this train as 117/18 and named it as Pandian Express (in honour of an erstwhile dynasty that ruled the Madurai region). On 1st October 1969, at 19:35, with a loud whistle and a loud column of smoke, the great Pandian Express started puffing



Photo courtesy to original owner

its way towards Chennai for the very first time behind two majestic YP steam locomotives. Pandian Express covered the distance of 495 km in 11 hours and 10 minutes with a Maximum Permissible Speed (MPS) of 75 kmph which made it the fastest train running on Meter Gauge tracks in SR. During its initial days, Pandian express had two First Class coaches, eight Sleeper coaches, one Mail/Parcel van coach, and five unreserved coaches. At the time of its introduction, Pandian had only six stops en route, namely, Madurai, Kodaikanal, Dindigul Junction, Tiruchchirappalli Junction, Vriddhachalam Junction, Villupuram Junction and Madras Egmore.

Pandian was nicknamed as the 'Honeymoon express' since most couples preferred Pandian Express to travel to Kodaikanal from Chennai and the First Class coupes were termed as the 'Honeymoon coaches'. Passengers of Pandian had a regal feel while travelling on it due to the comfortable coaches and also due to its different livery which was in green (compared to the normal liveries of the ordinary trains) and also due to less number stops and faster travelling time between the source and destination. Pandian's name and fame reached every corner of the country as it was the very first train to be named after a kingdom. Even after so many years of operation, SR still assures the on time running of Pandian Express. The strict schedule that Pandian maintained was at such a level that the people of Madurai used to blindly set the time in their watches based on the departure or arrival of Pandian. Most passengers preferred Pandian due to its time, speed, comfort and cleanliness. The coaching depot (CDO) of Madurai gave extra attention to the rakes of Pandian Express and they always made sure that these rakes are always neat and clean.

In 1975, this train became one of the first trains in SR's MG network to get diesel traction - a single YDM4A of GTL (Guntakal) or GOC (Ponmalai, Golden Rock) shed used to haul this train from 1975 till MG was converted into BG by the late 90s. Pandian is also said to be a VIP train since a lot of high profile passengers in South India used to prefer this train due to its timings in either direction. VVIPs were



Photo courtesy to original owner

regular travelers of this train.

In 1985, SR added more glory to Pandian Express by attaching two AC coaches, one first AC and a second AC coach with each rake. After this addition, Pandian became the first MG train to run with all the existing classes of accommodation under Indian railways in MG - a treat indeed for ardent MG lovers. Pandian was among the first trains in Indian Railways to have all the classes in its rake namely, 1A, 2A, 3A, SL, and UR, but the most popular class was the non-AC First Class (FC) which attracted most of the passengers. The First Class of Pandian Express was later decommissioned due to its age on 27th February 2014. I was fortunate enough to travel in it in March 2013, although I never knew that it would be for the last time that I could travel in my most favourite class onboard my most favorite train!

On 1st October 1994, SR celebrated the Silver Jubilee anniversary of Pandian Express at Madurai. On that occasion, the locomotive in-charge for that day was a YDM4A #6283 from GOC, which was decorated by the station staff. Along with the locomotive, the coaches were also decorated with colour papers and for me as a 7-year-old kid, it was an amazing journey! It felt awesome to read about this event in the newspapers the next day! A railway magazine also carried the news about the celebration of Pandian Express' 25th anniversary by SR.

Pandian Express' Meter Gauge days came to an end by March 1998 and it was during the months of May and June of 1998 that the new Broad Gauge era began between Chennai Egmore and Madurai with the same timings but was re-numbered as 6717/18. After 1st October 2002, Pandian was converted to Superfast category from Mail/Express and got re-numbered as 2637/38 by reducing its total running time from 11 hours to 9 hours. The departure time from Chennai Egmore was pushed back to 21:30 and arrival at Madurai was 06:30 and in return direction, Pandian's departure was deferred by an hour to 20:35 and arrival in Chennai was advanced to 05:45. After this upgrade, Pandian started to rule over the entire Chennai Egmore -

Madurai section and due to an increase in demand, SR began adding more coaches to the existing rake. Due to this, since 2004, Pandian's rake length increased to a maximum of 24 ICF coaches, including 8 AC coaches in addition to a First Class, 10 Sleeper coaches and 4 Unreserved coaches along with 2 guard vans at either ends. SR upgraded this train's rakes by providing LHB rakes on 15th August 2016. This was the first train to get LHB rakes in southern Tamil Nadu and on that day it felt as if a Rajdhani Express had entered Madurai Junction since that was the very first time that I saw an LHB rake parked at a platform in Madurai with both EOGs (power cars, End On Generator) turned on.

Often, the most talked-about point regarding Pandian is the locomotives that have been used to power it since its inception. Pandian is one of those trains that have been hauled by almost all the powerful locomotives of India. Given below is a chart that shows all the locomotives that have hauled Pandian from 1969 till date.

Train number	Section	Year	Locomotive	Shed
117/118	MS-VM	1969-1975	YAM 1	TBM
117/118	VM-MDU	1969-1975	Twin YP's /MAWD's	MDU
6717/6718	MS-VM	1975-1998	YAM 1	TBM
6717/6718	VM-MDU	1975-1998	YDM4A	GOC/GTL
6717/6718	MS-MDU	1998-1999	WDM2	GOC/ED
6717/6718	MS-MDU	1999-2002	WDP2/WDP3A	GOC
2637/2638	MS-VM	2002-2006	WAP4	ED/AJJ
2637/2638	VM-MDU	2002-2006	Twin WDM2's	ED/GOC
2637/2638	MS-MDU	2006-2009	WDP4	KJM(SWR)
2638	MDU-MS	2009-2011	WDP4/WDP4B	KJM/GOC
2637	MS-TPJ	2009-2011	WAP4	ED
12638	TPJ-MS	2011-2014	WAP4	ED
12638	MDU-TPJ	2011-2014	WDP4B	GOC
12637	MS-DG	2011-2014	WAP4	ED
12637	DG-MDU	2011-2014	WDP4B	GOC
12638/12637	MS-MDU	2014-2016	WAP4	ED
12637/12636	MS-MDU	2016-till date	WAP7	RPM

SR has taken several steps for the general upkeep as well as for the operational improvement of Pandian Express at regular intervals. It was a difficult task for SR to manage more trains than a particular section can handle due to most of the route being a single line. Up until 2016, the Madurai to Chengalpattu section was a single line. Nevertheless, SR maintained the prime priority it provided to Pandian Express and ran it on time, every time! In order to do this, SR always gave preference to Pandian above all other trains on the

route and never sidelined it on any loop line at any station en route. In fact, the 2205/06 Madurai Duronto Express (which held the tag of one of the fastest trains of India) used to get looped at Dindigul home signal in order to give way for Pandian and for this reason, Pandian has been nicknamed as the 'undisputed king of SR'.

The journey time was reduced at regular intervals after the completion of track doubling between Madurai to Chengalpattu and currently Pandian Express takes 7 hours and 50 minutes to cover the distance of 497 kms at an MPS of 110 kmph between Egmore and Dindigul, 100 kmph between Dindigul and Kodaikanal Road and 90 kmph between Kodaikanal Road and Madurai. During its initial days, the total running time was 11 hours and 30 minutes. SR has tried its best to reduce Pandian's running time by more than three and half hours since the date of introduction. At present, 12637 Pandian Express departs Egmore at 21:40 and reaches Madurai at 05:30 while in the return leg, 12638 departs Madurai at 20:35 arriving Egmore at 04:55.

Pandian is not only the flagship train of SR, but also acts as the torchbearer of the technical and infrastructural developments within Indian Railways. No other train in the history of IR went through such improvements as Pandian! In the last 50 years of its existence, one of the many achievements includes the fact that there are no recorded delays for Pandian Express, while the only negative point among all these years in my personal experience is that no day has passed when Pandian has entered Madurai without waiting at the home signal for around 15 minutes! The average waiting time for Pandian at Madurai home signal (before the Vaigai bridge) is ~10 to 20 minutes. I sincerely hope that Madurai division would work on the platform handling at Madurai and reduce 15 more minutes from the running time of Pandian, and may also consider increasing the MPS to 110 kmph between Dindigul - Madurai since this would save more than 20 minutes and thus in the near future, Madurai division can run Pandian and its sister, Vaigai, in under 7 hours.

Long live the Pandian Express - the undisputed king of SR!

All photographs used in the article were collected from Internet. Courtesy to the original owners.





YDM4

The Heart of Indian Meter Gauge

Sourav Dutta

Indian Railways, the Lifeline of the Nation is the largest rail network of Asia & the fourth largest in the world. The entire network is spread over 126,366 kms of track length & 67,956 kms of route length. At present, the dominant broad gauge spans 63,950 kms i.e., 94.10% of the total route length, meter gauge covers less than 2,400 kms i.e., 3.5% & narrow gauge covers around 1,600 kms i.e., the remaining 2.34%.

Travelling back in time to 1990, the ratio between broad gauge & meter gauge was almost at par than present. The broad gauge covered 56%, the meter gauge covered 37.5% & the narrow gauge was spread over 6.5 % of the entire rail network. The stats changed to 74% for broad gauge, 21% for meter gauge & 5% for narrow gauge in the beginning of the 21st century. Having stated the above facts, it's quite evident & well known that there was a time when meter gauge fairly dominated the country's rail network. The states of Gujarat, Rajasthan along with most of southern and north-eastern India were meter gauge hubs. Important routes like Ahmedabad-Delhi, Delhi-Lucknow-Varanasi, Katihar-Tezpur-Dibrugarh, Tambaram-Rameswaram, Akola-Chittaurgarh-Udaipur, Bangalore-Solapur etc. were served by iconic meter

gauge trains like the Pink City Express, Chetak Express, Ajanta Express, Meenakshi Express, Pandian Express, Vaigai Express, Quilon Mail, Gokul Express, Vaishali Express, Ashram Express, Aravalli Express Barak Valley Express etc. connecting major cities of the nation.

Whenever, meter gauge is mentioned in context of Indian Railways the thought of YDM 4 crossing one's mind is inevitable. Breaking down the acronym '**YDM 4**', it's **Y** for *Meter Gauge*, **D** for *Diesel Traction*, **M** for *Mixed Traffic (Passenger cum Goods)* and **4** depicting *the Fourth Generation*. This loco class can be addressed as the heart of Indian meter gauge rail network after its steam predecessors & a very successful diesel predecessor YDM 1. There were other locomotive classes in the diesel cadre like YDM 2, YDM 3 & YDM 5 which have served Indian meter gauge network parallel to the YDM 4 for a good timespan but they were all phased out before the beginning of the 21st century. Since, the early 21st century YDM 4 has been the sole workhorse of India's MG network till date.

HISTORY & EVOLUTION

In the middle of 1950, Indian Railways decided to introduce

diesel locomotives to their meter gauge network. They commenced with YDM-1 manufactured by North British Locomotive Company headquartered at Glasgow, Scotland in 1954. Within a span of next ten years, Indian Railways (IR) decided to replace its meter gauge steam workhorses & also realized the need of a locomotive more powerful than YDM-1. IR approached American Locomotive Company (ALCO) as well as General Motors Electro Motive Division (GM-EMD). GM-EMD submitted designs of YDM-3 (GA12) & YDM-5 (12-567C) while ALCO submitted designs for YDM-4 (DL-535, DL-535A, RSD-30). Initially, GM-EMD supplied 30 units of YDM-3, 25 units of YDM-5 & ALCO supplied 55 units of YDM-4 bearing road numbers 6020-6049, 6105-6112 & 6113-6129 respectively. After a detailed comparative study & evaluation of all three batches of locomotives Indian Railways selected the design from ALCO i.e., YDM 4 mainly due to its heavier axle load & technology transfer agreement from its makers.

The above technology transfer agreement led to the establishment of Diesel Locomotive Works factory (present day Banaras Locomotive Works, BLW) at Varanasi so that the YDM-4 units can be produced in India. The initial batch of 55 locomotives supplied by ALCO arrived India between 1961-1964. These units were homed by diesel loco shed Siliguri, Sabarmati & Golden Rock which were considered to be amongst the elite diesel loco sheds then. The first YDM-4 #6020 was homed by diesel loco shed New Guwahati, which used to be a satellite extension of DLS Siliguri back in 1962 before becoming a full-fledged DLS in 1979. YDM-4 units from 6130 to 6198 were built by Montreal Locomotive Works (MLW), Canada in 1964 under the license of ALCO. This entire batch of 69 locomotives were classified as YDM-4A. In a span of next four years, DLW was all set to roll out YDM-4 units. The first ever YDM 4 from DLW #6199 christened as "Hubli" was produced in the year 1968. The locomotive was dedicated to the nation by the then Deputy Prime Minister of

India, Morarji Desai. DLW continued with the production of YDM-4 units till road number 6258 in the initial phase. In 1969, Montreal Locomotive Works (MLW) rolled out another batch of 30 YDM-4 locomotives having road numbers 6259-6288 which were again classified as YDM-4A. Thereafter, DLW produced a total of 481 YDM 4 units till 1993. These units had road numbers from 6289 to 6769. The last YDM 4 #6769 was allotted to diesel loco shed Rangapara North which happened to be yet another satellite shed of DLS Siliguri. The locomotive was later transferred to Myanmar Railways. The list of YDM 4 holdings illustrates the existence of a wide spread meter gauge network in the country.

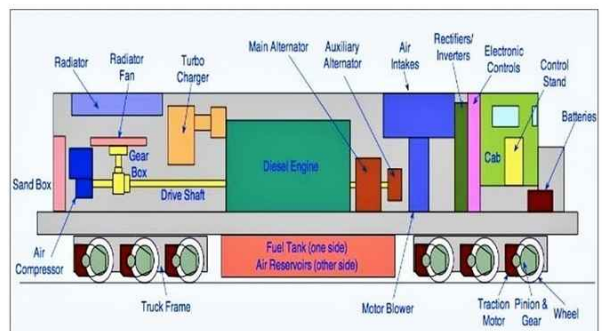
TECHNICAL SPECIFICATIONS

The Components: The principal components of a YDM-4 locomotive can be listed down as below:



- **Nose:** It consists of the headlamps, sand box, dynamic resistance grid (for dynamic braking), grid blower motor & panel mounted brake system.
- **Driver's Cab :** The driver's cab mainly comprises of the control stand which hosts the pressure gauges for different factors like lube oil, fuel oil & booster air pressure, electrical speedometer, air brake control valves etc.
- **Main Generator Compartment :** The traction motors, excitation generator, auxiliary generator & traction motor blower make up this compartment.
- **Engine Room :** It houses the diesel engine, after cooler, turbocharger, governor, fuel injection pump, fuel oil filters, lube oil triplex filter, lube oil pump, water pump, extension

	Name of DLS	Code	Zone	Y D M 4 H O L D I N G S
1	Mhow (Now Dr. Ambedkar Nagar)	MHOW	WR	
2	Sabarmati	SBI	WR	
3	Gandhidham	GIM	WR	
4	Phulera	FL	NWR	
5	Abu Road	ABR	NWR	
6	Jodhpur (Now Bhagat Ki Kothi)	BGKT	NWR	
7	Golden Rock (aka Ponmalai)	GOC	SR	
8	Guntakal	GTL	SCR	
9	Maula Ali	MLY	SCR	
10	Mysore	MYS	SWR	
11	Izzatnagar	IZN	NER	
12	Gonda	GD	NER	
13	Chhapra Kacheri	CI	ECR	
14	Narkatiaganj	NKE	ECR	
15	New Guwahati	NGC	NFR	
16	Lumding	LMG	NFR	
17	Rangapara North	RPAN	NFR	
18	Siliguri	SGUJ	NFR	



shaft & compressor spline coupling.

• **Compressor Compartment** : This compartment produces vacuum compressed air used for braking & comprises of pump cum motor for hydraulic governor fuel booster pump.

• **Radiator** : This section is mainly made up of radiator fan, two radiator panels (left & right) also known as radiator element, lube oil cooler, right angle gear which drives the radiator fan, & eddy current clutch which connects right angle gear box to the diesel engine's extension shaft.

The generator room end of the engine block is called power take off end & the compressor room end of the engine block is called free end.

Bogies and Wheel Arrangements: The YDM 4 features 15.60 m long, 2.73 m wide & 3.635 m high ALCO asymmetric cast frame trimount bogies on a Co-Co wheel/axle arrangement i.e., six set of wheels for each bogie with each axle being powered by a dedicated axle hung nose suspended traction motor. Both trucks are loaded through center plate & two loading plates are applied. The tri-mount bogie is made up of a single piece cast steel frame. The cross member between the leading and middle axles carries the conventional bogie pivot (swivel bearing) whereas the cross member of the frame between the middle and trailing axles carries the other two load bearers. The weight of the locomotive is distributed between the conventional pivot and the other two load bearers to form a three-point support. The conventional pivot carries approximately 60% of the vertical load. It also receives and transmits traction and braking forces. The other two load bearers share the remaining 40% of the vertical load. The latter load bearers are not designed to transmit any traction or braking forces. Snubbers are also present to control the spring action. The trimount bogie features the following safety fittings:

- Dust Guard for pivot pin
- Side Load Bearer
- Buffer
- Cattle Guard
- Rail Guard
- Safety bracket for Main Reservoir

Co-Co wheel arrangement of a YDM-4



- U bracket for CBC
- Buffer lamp box
- Hand Brake Chain
- Tie Rod Safety Chain
- Equalizer beam safety bracket
- Brake Pull Rod "J" clamps
- Gear case "L" clamp for Gear case M/Bolt
- Gear case "C" clamp
- Safety clamp for Air pipe
- Bolster Pin (Safety Pin)
- Safety U bracket (connected with chassis & bogie cross beam)
- Seal of wick pad carrier plate bolt/screw
- Sealing of Traction motor caps dummy

The diameter of each wheel equals to 0.965 m while the axle load is 12 tons. The total weight of the entire locomotive is 72 tons for those manufactured by ALCO & DLW whereas the units from MLW weigh 67 tons.

Miscellaneous Fluid and Sand Capacity: The YDM-4 locomotive is equipped with one fuel tank of 3000 litres while the lubricant capacity & water capacity are 530 litres & 28 litres respectively. There are four sandboxes with a total capacity of 0.28 cubic meter. Air reservoirs are also located next to the fuel tank under the floor of the locomotive. They contain compressed air at high pressure used for braking purpose.

Engine, Traction Motor and Other Key Components:

• **Traction Motor** : The YDM-4 is equipped with diesel to electric transmission which is carried out by a DC shunt wound main generator & 6 series wound DC traction motors, *axle hung & nose suspended*. Before elaborating on the term axle hung & nose suspended, let's have a look at the technical aspect this terminology classifies. For any locomotive class worldwide, the type of mounting arrangement & rotational speed of traction motors plays a

Traction Motor of a YDM-4



very vital role. The mechanical design of every traction motor is unique & each type of mounting arrangement has significant differences which affects power transmission. It's a well-known concept about electrical machines that RPM (revolutions per minute) of a motor is inversely proportional to the machine's weight. The formula D^2LN is constant for any given rating where D =Diameter, L =Length & N =RPM but in context of traction application, there exists a definite correlation between a motor's mounting arrangement & rotational speed.

The entire process of power transmission from traction motors (output torque of the traction motors) to the locomotive axle through a set of pinions is known as drive management & the traction motor is denoted as the driver.

In order to ensure a smooth & efficient transmission, it's necessary to maintain the correct geometric arrangement between the rotor shaft & the wheel axle under all circumstances of operation. There are two types of traction motor mounting arrangement mechanisms which are generally followed worldwide:

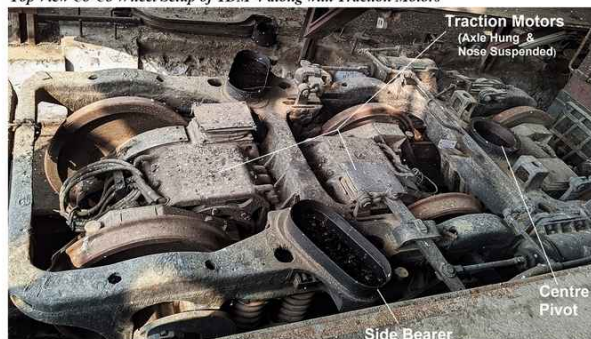
- a) Axle hung nose suspended traction motor
- b) Nose suspended drive

Other less popular practices are *underframe mounted traction motor & gearless drive*. In this article, we will briefly focus on the concept of axle hung nose suspended arrangement:

Axle hung nose suspended traction motor or simply nose suspended traction motor arrangement is the commonly used method of mounting traction motor in a bogie. The traction motor (TM) is mounted in the bogie frame with its armature shaft parallel to the wheel axle. One side of the TM frame is supported by a pair of suspension bearings encapsulated in motor suspension unit in which the axle rotates while the other side is provided with a "nose" which rests on a bracket fixed to the transom of the bogie. The advantages of an axle hung nose suspended arrangement are –

- i. This kind of arrangement allows sufficient relative movement of motor frame with respect to bogie frame.
- ii. Since TM axis is always parallel to the axle, it facilitates

Top View Co-Co Wheel Setup of YDM-4 along with Traction Motors



use of simplest & most robust form of transmission i.e., single reduction spur gear. Spur gears are most commonly used & easily manufactured gear reducer or speed changing gear having straight tooth traces & teeth parallel to the axis. They are mainly used for increasing speed. The other variants with parallel axis are helical gears & herringbone gears, a type of helical gear which are mainly used for power transmission. However, there are different sets of gear reducers with orthogonal axis, perpendicular non-intersecting axis & coaxial axis respectively.

iii. Simple & robust form of transmission is not only economical but also it facilitates the most minimal gear-centre distance (distance between axle & motor shaft). This optimizes space utilization i.e., accommodation of the traction motor in least possible space.

iv. Drive system geometry is independent of bogie primary suspension arrangement.

Besides the above advantages, axle hung nose suspended arrangement also has certain disadvantages –

- i. Limited degree of resilience in traction motor support exposes the motors to high level of shocks generated at wheel treads (the surface which comes in contact with the rails) due to track irregularities.
- ii. High unsprung mass of the traction motors causes the wheel sets to generate shock loads on the track which makes track maintenance expensive.
- iii. Overhung pinion leads to armature shaft deflection which further results in misalignment of driver end bearing. This makes the design of inner race (bearing) for drive end pinion complicated.

In case of *Nose suspended drive* or *Fully suspended traction motor* arrangement, the complete weight of the traction motor is supported by the body frame which in turn is supported by the primary suspension of the bogie. This reduces shock loads on the track. But the major disadvantage of axle hung nose suspended arrangement is caused by a high unsprung mass of traction motors. Fully suspended arrangement is meant for high-speed application as well as take advantage of high motor speed. This arrangement can be seen in the WAP-5 class locomotive & 3-phase EMUs (including Train-18).

For *Underframe mounted traction motor* arrangement, the traction motor is mounted in the loco/vehicle underframe driving one or more axles through a flexible drive whereas *Gearless Drive Arrangement* uses axle of the wheel set as shaft of the rotor with the stator rigidly mounted on the body frame.

The traction motors of YDM-4 are of four pole DC series type. Each traction motor has a continuous rating of 225 KW arranged in either 2S 3P configuration or 6P configuration (to adjust speed/power as required) with principle transition at



Generator Compartment of a YDM-4

Traction Motor Cooling Blower

20.5 mph. These are cooled by two centrifugal blowers 54 HP each. One blower supplies air to 3 traction motors on the front truck while the other supplies air to 3 traction motors on the rear truck. A pinion is shrunk fit on motor armature shaft. It meshes with a bull gear mounted on wheel axles. The gear ratio in terms of pinion and bull gear teeth is 92:19. The DC traction motor from GE, '5GE761A3' has a continuous voltage of 420 V, continuous current of 590 A, maximum speed of 3100 RPM & weighs 1760 Kg whereas 'AE1 253 AZ' from BHEL has a continuous voltage of 217 V, continuous current of 600 A, maximum speed of 2800 RPM & weighs 1786 Kg.

• **Traction Generator:** The traction generator is a shut wound separately excited DC generator. The main field magnet coil consists of 10 or 12 field magnets & are excited by the excited generator. The armature is coupled with the diesel engine crank shaft. A cooling fan is attached to the armature for cooling the commutator and field coil. The generator has 10-12 brush arms & each brush arm has 6 carbon brushes respectively. The DC generator supplied by GE, '5GT581' has a maximum speed of 1100 RPM, maximum voltage of 920 V, maximum current of 2250 A & weighs 5300 Kg while 'AE1 10919 AZ' supplied by BHEL has equal maximum speed of 1100 RPM, maximum voltage of 552 V, maximum current of 4240 A & weighs 5100 Kg. The maximum tractive effort is 18.935 T while the continuous tractive effort is 16.050 T.

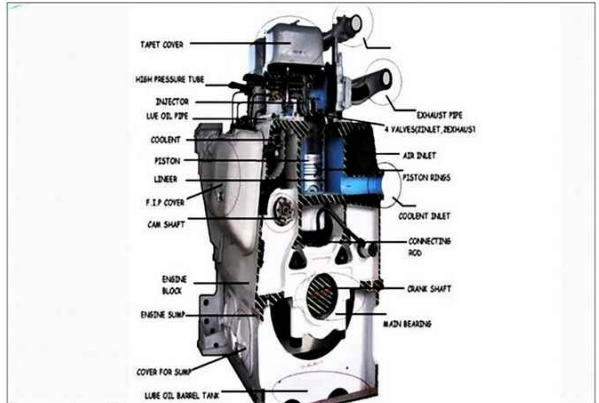
The DC generator & traction motors have been supplied by General Electrics for those units manufactured by ALCO & MLW while the DLW manufactured locomotives are equipped with generators & traction motors from BHEL.

• **Auxiliary Generator:** The auxiliary generator is mounted on the traction generator. It is a gear driven self-excited shunt wound, 17 HP, DC machine. The GE made auxiliary converter '5GMG167CR' weighing 560 Kg has a rating of 12 KW 75 V at 2300 RPM whereas the one manufactured by BHEL 'AG2513AZ' weighing 278 Kg has the same rating at 2400 RPM. The auxiliary generator supplies current to the following circuits –

- 1) Battery charging circuits.
- 2) Fuel Pump Monitor (FPM), Crank Case Exhaust Motor (CEEM), Rotary Frequency Converters (RFC) circuits.
- 3) Lighting circuits.
- 4) Control circuits (relay, contactors, panels, magnetic valves, switches, breakers, etc.)
- 5) Exciter field coil circuits. (To enable to produce output in the Exciter.)

• **Exciter:** The exciter is mounted on the traction generator. It is a gear driven separately excited shunt wound. It supplies current to the separately excited shunt field of traction alternator. The output of a traction alternator is controlled by the output of an exciter. The shunt field of an exciter is excited from the output of an auxiliary generator through a network of resistors & exciter field transistor (EFT1). If the exciter fails to produce its output, the load meter will not respond & the loco will not move. The exciter mainly in use for YDM 4 is an 8 HP 'AG 2210 AZ or AG 32' made by BHEL rated 120 V, 50 A at 2400 RPM & weighs 240 Kg.

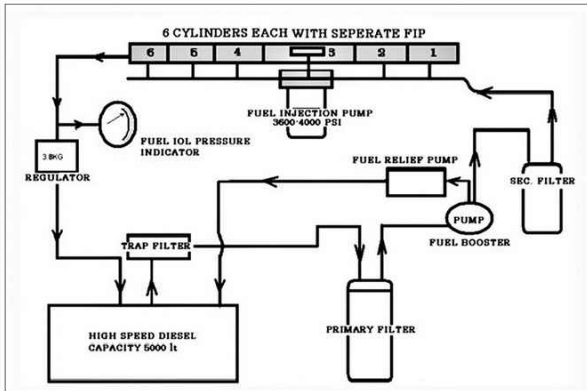
• **Engine:** The engine powering the YDM 4 is a turbocharged L6 or inline six four stroke 'ALCO-251B' (for units manufactured by ALCO & MLW) / 'ALCO-251D' (for units manufactured by DLW) engine with a mean piston speed of 9.79 m/sec. The presence of six cylinders is quite evident from the term inline six. The diameter of each cylinder is 9 inches & the stroke is of 10.5 inches & the Bore x Stroke



Cross section of Engine of a YDM-4

measurement is 228.6 x 266.7 sq.mm. The maximum power output in standard conditions (20°C & mean sea level) is 1380 HP whereas at site (52°C & 600 m above MSL) the output is 1280 HP. The RPM (revolutions per minute) ranges from 400 to 1100 while the compression ratio is 12.5:1.

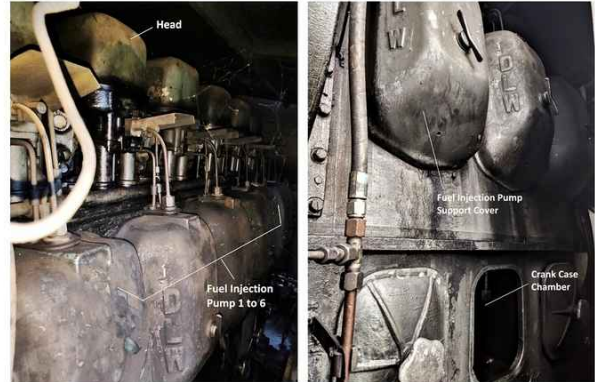
• **Fuel Oil System:** The fuel oil system supplies the right amount of fuel at right pressure into the engine cylinders within a stipulated time. The fuel supplied to the cylinders is in highly atomized form. The reason behind maintaining a high pressure is to ensure proper lifting the nozzle valve,



Fuel System of a YDM-4

penetration of fuel into pressurized combustion chamber & proper atomization. The amount of fuel required varies with the speed of the engine. The timing of injection is also very critical to ensure complete combustion of the fuel. Since, the engine consumes variable amount of fuel at different instances, the phenomenon might increase the delivery pressure of the pump which further increases the load on the pump & its drive motor. A spring-loaded relief valve is provided for navigating the excess oil back to the fuel tank, which releases the excess load on the pump & it's motor. The pressure of the relief valve is maintained at 5.2 Kg/cm².

The fuel injection pump is a constant stroke plunger type pump which can deliver variable quantities of fuel as & when required to suit the engine demand from time to time. A fuel cam controls the pumping stroke of the plunger. The highly pressurized fuel is then directed on to respective fuel injector nozzles through a high-pressure tube. Each fuel injector nozzle is equipped with a cylinder head having a tip like projection. The tip is directed into the combustion chamber. While passage of the highly atomized fuel into the combustion chamber, the nozzle valve is lifted owing to very high pressure of roughly 4000 psi. A locomotive may fail due



Fuel Injection Pump 1 to 6

Fuel Pump & Crank case

to fuel oil pressure not building up. The factors which contribute to the same are noted below –

- ▶ The fuel tank is having less than 700 litres of fuel
- ▶ Clogging of fuel filters
- ▶ Leakage
- ▶ Defective fuel booster pump or motor
- ▶ Defective fuel injection pump & injection nozzle
- ▶ Defective fuel pump circuit breaker
- ▶ Battery switch in open state
- ▶ Sticking of relief & regulating valve

Another pump known as the lube oil pump is also present for timely circulation of lubricating oil to necessary areas for smooth functioning of moving parts. Like fuel oil system, the lube oil system also includes a relief valve & regulating valve. The pressure of the relief valve is maintained at 5.2 Kg/cm² & it's responsible for navigating back the excess amount of lubricant to the tank thus releasing the excess load on the pump & its motor.



• **Turbocharger:** The turbocharger or turbo supercharger is a forced induction device that drives a turbine wheel & in turn a blower to increase the pressure & density of charge in the engine cylinder. It ensures that the compressor supplies more amount of compressed air to the cylinders in combustion chamber of the internal combustion engine



Super Turbocharger of a YDM-4

which facilitates supply of more fuel in appropriate proportion during the internal combustion process. The YDM-4 is equipped with ALCO made 350B/350C turbo charger weighing 10818 Kg, whose main components of a turbocharger are –

- ▶ Gas inlet casing
- ▶ Turbine casing
- ▶ Intermediate casing
- ▶ Blower casing with diffuser
- ▶ Rotor assembly with turbine and blower on same shaft.

The advantages of a turbo charged diesel engine are listed as under –

- ▶ A turbocharged diesel engine always delivers more output than an engine driven by natural aspiration as the later one solely depends on atmospheric pressure while the former uses forced supply of air.
- ▶ The turbocharger increases engine power by a good margin of up to 50%. The power to weight ratio in such cases is much more favourable.
- ▶ The key advantage of a turbocharger is its increased power supply without any surge in fuel expenses as it's driven by exhaust gas energy of an internal combustion engine which otherwise go wasted.
- ▶ Results in better scavenging which ensures carbon free cylinders and valves and better health of the engine.
- ▶ Better ignition due to higher temperatures developed by higher compression in the cylinder.
- ▶ Better fuel efficiency due to complete combustion of fuel by ensuring availability of matching quantity of air or oxygen.
- ▶ Reduction in thermal loading of the engine components by reducing the exhaust gas temperatures.
- **Cooling System:** The heat produced during combustion

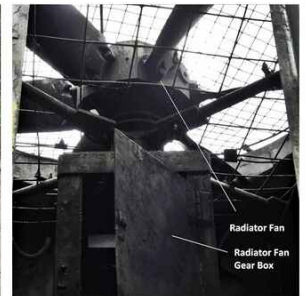


Turbocharger AC Element & Air Ducting

process inside the diesel engine is absorbed by the surrounding components to an extent of 25-30%. These components are prone to failure if they absorb excessive heat. The cooling system helps to maintain a uniform temperature by distributing the heat amongst other components & dissipating excess heat to the atmosphere. A YDM-4 is equipped with a direct driven centrifugal water pump on the engine with the radiator & a 41 HP fan located in the radiator compartment at the long hood end. The fan is directly driven from the engine extension shaft through an eddy current clutch & a right angle gear box. Thermostatic control on the eddy current clutch is also provided. Water



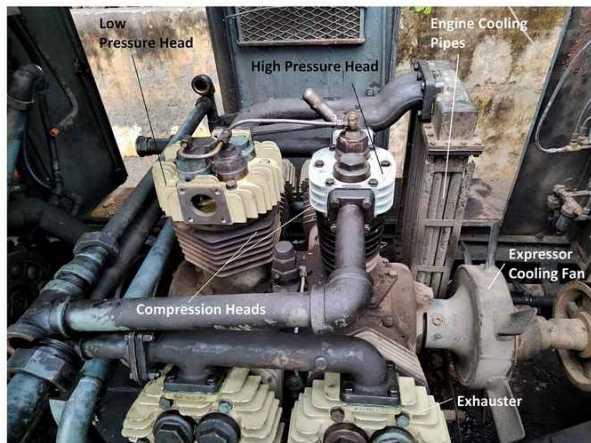
Radiator Element



Radiator Fan Compartment

temperature is controlled by controlling the movement of radiator fan. Cooled water from the left side radiator passes through the lube oil cooler to lower the temperature of lube oil. After passing through the lube oil cooler, the cooled water joins the right-side radiator outlet for returning to the suction of the pump for reuse. The radiator panel on either side is also known as radiator element. It's made up of brass tubes with copper lining on the sides of the tube.

- **Expressor:** In a YDM 4 locomotive the compressor & exhauster is combined into a single unit which is known as expressor. It creates 22" of vacuum in the train pipe & 140 PSI air pressure in the reservoir for operating the braking system & other purposes. The expressor is located at the free

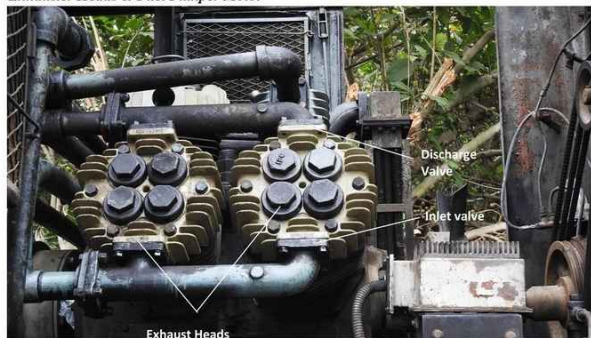


Top view of expressor

end of the engine block & is driven through the extension shaft attached to the engine crankshaft. The expressor consists of 6 cylinders arranged in a W shaped orientation out of which 2 are arranged in a vertical fashion while the remaining 4 are arranged in V shape.

The two vertical cylinders also referred to as cylinder heads or simply heads are responsible for compression. The bigger head is meant for low pressure while the smaller head is meant for high pressure. The low-pressure head has two discharge valves & two unloading device valves whereas the high-pressure valve has one discharge valve & one unloading valve. The main function of compressor unit is to create air pressure in main reservoir of locomotive up to $10\text{kg}/\text{cm}^2$. Atmospheric air is drawn into the low-pressure cylinder through the open inlet valves during suction stroke & same air is discharged into the high-pressure cylinder through discharge valves & delivery pipe. The high-pressure cylinder compresses the air at high-pressure & discharges it in main reservoir of locomotive for braking purpose. The remaining four heads in V shape serve the purpose of an exhauster. Each head of the exhauster is fitted with two discharge valves & two inlet valves. The discharge (output) of the compressor part acts as an input for the exhauster part of the expressor.

Exhauster Heads & Fuel Pumper Motor



The expressor used in YDM 4 is WABCO made '6CD4UC' with a rating of 55 HP when loaded & 15 HP is unloaded state. It weighs 1090 Kg. The compressor unit has a capacity 1740 l/m in idle state & 4789 l/m when it's completely filled up. The exhauster unit has a capacity of 6959 l/m when idle & 19156 l/m when full.

• **Braking System:** The YDM 4 locomotive is equipped with air, hand & dynamic braking for loco brakes while the train braking system uses vacuum mechanism. To facilitate the above-mentioned system, YDM 4 locomotives are provided with WABCO, USA manufactured **28 LV-1** brakes which provides air brake in locomotive & vacuum brake for train. Later, DLS Lumding (LMG) retrofitted WABCO's **28 LAV-1** in few of their YDM 4 units to facilitate dual brakes i.e., air brake as well as vacuum brake for train braking system. The loco braking system is engaged/disengaged via independent SA-9 brake valve while the train brakes can be applied/released via automatic A-9 brake valve. YDM 4 locomotives ranging between 6105-6129 were equipped with additional rheostatic braking system as well.

Safety Devices of a YDM-4:

• **Lube Oil Safety Device:** This safety device protects the engine against low lubricating oil pressure. As soon as the lubricating oil pressure falls below safe minimum, the engine through the governor shuts down giving an alarm signal. The shutdown happens in a span of 35-45 seconds if the lube oil pressure drops below $1.1\text{ kg}/\text{cm}^2$ for idle & $4.2\text{ kg}/\text{cm}^2$ for 8th notch respectively.

• Hot Engine Alarm:

a) Variable speed drive radiator fan: This device keeps the temperature of the coolant (cooling water) within permissible limits. Once the temperature of the coolant exceeds 93°C , it starts running the radiator fan at medium speed followed by a gradual increase. The radiator fan keeps on running until the temperature of the coolant drops down to 72°C . In case, the radiator fan fails to control the temperature, the engine is brought to idle.

b) Hot engine safety circuit: If the water temperature of the engine exceeds the set value of temperature switch (ETS1), a contact closes & energizes the signal relay (SR). Subsequently, the warning lamp lights up & the alarm goes off. If the water temperature continues to rise above the set value of temperature switch (ETS2), a contact opens & de-energizes the engine run relay (ERR). The engine speed becomes idle upon de-energization of the ERR.

• **Low Water Level Safety:** This safety device sounds an alarm as well as shuts down the engine when cooling water level drops to predetermined level in the expansion tank.

• **Load Control Pilot Valve:** It's a very tiny device located near the engine governor. It contains a small needle like that of a mechanical weighing system often used by shopkeepers. A

deflection of the needle towards minimum(left) indicates a faulty engine whereas a deflection towards maximum(right) indicates a faulty generator.

• **Ground Relay:** If a ground occurs in the power or control circuits, ground relay (GR) will operate. A normally closed contact drops out the generator field contactor (GF) therefore removing generator excitation. The GF interlock also opens in the separate excitation circuit to remove exciter excitation. Engine run relays are energized & all the governor speed solenoids are dropped out forcing the engine to return to idle speed.

• **Wheel Slip Protection:** Wheel Slip relays (WSR) are connected between points of equal potential in the traction motor circuits. If a motor slips during operation, a difference of potential will exist across the relay coil. The relay will be energized & it will light a lamp followed by the sound of the warning buzzer. Further, a contact (configured in series with the governor) on the wheel slip relay overrides the solenoid to close. This reduces the output from the main generator to the traction motors which automatically corrects the wheel slip. The throttle handled shouldn't be moved back until the wheel slip is corrected.

• **Engine Overspeed:** If the engine exceeds the rpm value of 1250, the over-speed mechanism activates the engine over speed switch. The EOS de-energizes the ERR which in turn shuts down the engine.

• **Pneumatic Control Switch:** This switch trips during emergency brake application, train partition on vigilance control device operation (if used). When the PCS trips, the resulting circuit operation reduces the engine speed & power to notch 1.

• **Engine Shut Down:** Normal shutdown or stopping of the engine is accomplished by moving the engine control switch (ECS) to "SU STOP" position. If there are multiple units working as one, then the ECS switch should be moved to "MU STOP" position.

Although the maximum operational speed of a YDM-4 varies from zone to zone as per operating conditions, it has a maximum speed limit of 120 Kmph under ideal conditions. If we talk about operations since our recent past, we will find the YDM-4 locomotives running at an average of 60-65 kmph or even at lesser speeds of 30 kmph in certain sections but there was a time when popular MG names like the Pink City Express, Vaigai Express, etc used to clock speeds above 100 kmph powered by YDM-4. And last but not the least let us have a look at the maintenance schedule of a YDM-4 locomotive:

- 1) Trip Inspection: After every trip
- 2) Fortnight schedule: 15 days
- 3) Monthly schedule: 30 days.
- 4) Quarterly schedule: 3 months.
- 5) Half yearly schedule: 6 months.



Surviving Iron Horses @ Mailani

- 6) Yearly schedule: 1 year
- 7) Intermediate overhaul (IOH): 2.5 years.
- 8) Periodical overhaul (POH): 5 years.

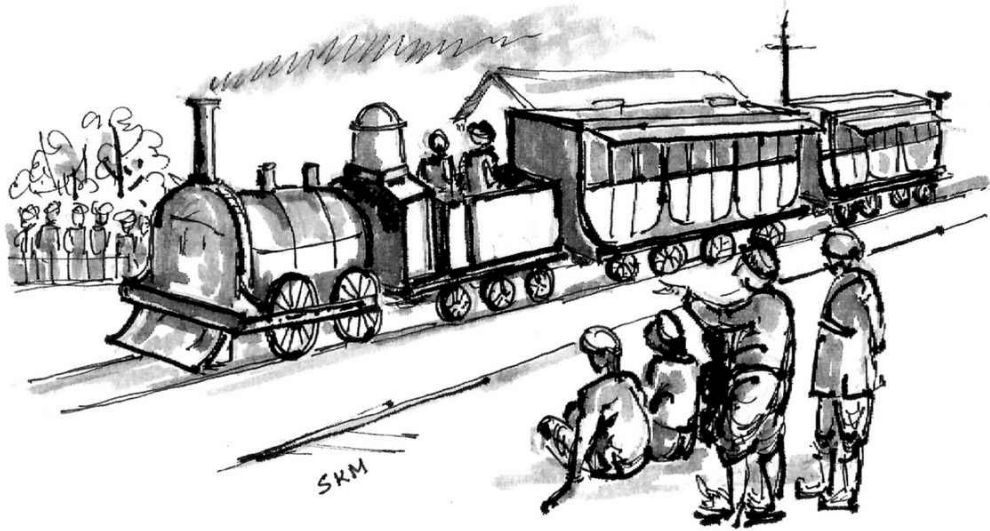
We all are aware of the universal truth that every beginning has an end & the YDM-4 isn't an exception. Change being the biggest truth of life, today's new sensation will become outdated in future to give way to a better tomorrow. Indian Railways has witnessed a lot of gauge conversion from smaller gauges to broad gauge not only to speed up travelling but also to make it more convenient. As a result, with time, the count of YDM-4 hauled trains has gone down gradually with phasing out of many locomotives as well as their home sheds. Names like Mysore, Lumding, Narkatiaganj, Chhapra Kacheri, etc. are now a part of the golden pages of Indian meter gauge history & shall remain nostalgia forever but the story doesn't end here!

Some smaller gauge sections have bagged the heritage tag, as they attract a lot of tourists from all corners of the country. This has paved the way for their preservation & we can eagerly look forward to the remaining fleet of IR's meter gauge heroes ruling their respective territories for the next few years before they proudly retire. Routes like Coonoor-Mettupalayam, Dr. Ambedkar Nagar (Mhow) – Kalakund, Mailani-Nanpara-Bahraich, etc. will not only continue attracting tourists but also rail enthusiasts of all ages. For some, it will be an opportunity to relive numerous nostalgic moments surrounding the YDM-4 whereas for others it will definitely render many 'first evers' in their lives.

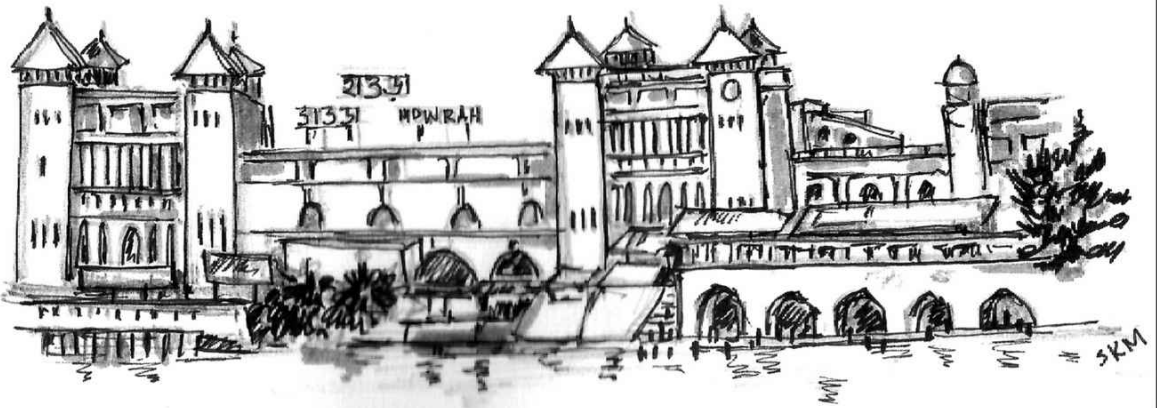
We would like to thank Sri Pankaj Kumar Singh, CPRO, NER, Gorakhpur & Sri Om Prakash Singh, Senior Publicity Inspector, O/o the CPRO, NER, Gorakhpur for encouraging us & making all necessary arrangements to visit Diesel Care Centre, Mailani (NER) for a better understanding of the subject along with relevant photographs for the article. We would also like to express our heartfelt gratitude to Sri Surendra Kumar Sharma, MCM, Diesel Loco Shed Phulera (NWR) for his unconditional support and guidance through his immense knowledge & experience, even at the hint of a small doubt.



Railway Sketches

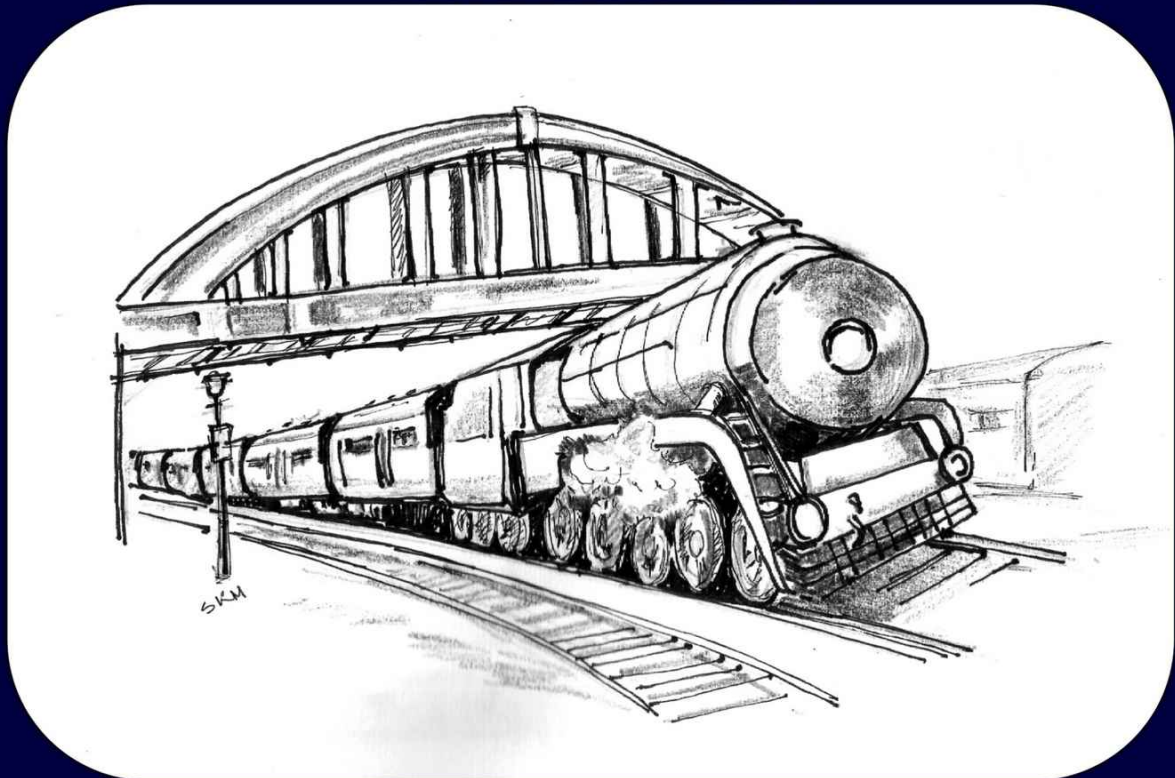


Artist: Sudakshina Kundu Mookerjee





Artist: Sudakshina Kundu Mookerjee





Dehri-Rohtas Light Railway

a lost and forgotten line

Mick Pope

I made my first visit to India at the end of 1979. It must have made a big impression as I have been back over thirty times since then! That first visit was with the UK based 'Industrial Locomotive Society'.

It is worth just looking back to how I became interested in industrial based railways, although I retain an interest in the larger scale systems. Steam locomotive finished on the national railway system in the UK in 1968. I thought that was the end for me. I was at university in Nottingham in the East Midlands and steam traction had ended there, two years earlier. Ironically, the last steam locos were operating in my home area in the North West of the country. However, when I sat one day in 1968 in the Social Science Library, located on a small hill, I saw a column of steam moving in the distance. I knew it was unlikely to be a steam loco on the national network and when I examined a map I realized it was at a coal mine. I had seen advertisements in railway magazines for two books about British industrial railways and so sent off for them. They listed every industrial location with locomotives of all kinds. This started me off exploring and photographing them. I also joined the society that published the books and regular newsletters, and so got to visit India on one of their overseas tours. I was accompanied by my younger brother who has similar interests.

I will save details of other visits for another occasion but perhaps the one to the Dehri-Rohtas Light Railway (DRLR)

left the most lasting impression. The line opened in 1911, the capital having been raised a few years before and used to purchase some carriages, wagons and track from the Dwara - Therria Light Railway which had closed. The railway transported stone from limestone quarries to the steel works in Dehri and also passengers. By 1930, the line was 26 miles long and in 1913-14 carried over 50,000 passengers and 50,000 tons of freight. [Thanks to Simon Darvill's book 'Industrial Railways and Locomotives of India and South Asia' for these details]. At one time the company owned 29 steam locomotives.

The locomotive roster was a very mixed one with some bought second hand from Indian Railways (IR) and other sources, and others bought new. Some were tank engines and some tender engines. The most interesting ex-IR locos were four A1 Class 2-8-4 tank engines, a big brute of a loco for narrow gauge tracks, and 5 K class 2-6-2 tanks of the type that operated on the Kangra Valley line. There were some other unique types of tank engine from British manufacturers. The modern fleet consisted of 9 ZB class 2-6-2 tender locos built by German and British manufacturers as per the IR design and one by a Jugoslavian firm. At the end, this last type operated most of the freight traffic with a tank loco on the passenger service.

We moved over from the IR station to the narrow gauge sidings and the DRLR loco shed. Here we found No. 5, a



0-6-2 tank engine built by Avonside Works in the UK in 1920 doing shunting and No. 6, a 0-6-4 tank also by Avonside from 1926, in steam ready to haul our train. Also shunting around the site was No. 27, one of the K class locos built in



Scotland in 1905. Four of the ZB class locos were also seen during the visit either refueling or working trains. The loco shed was a real treasure house with one locked shed holding some of the older tank engines no longer in use and other disused locos laying around the yard.

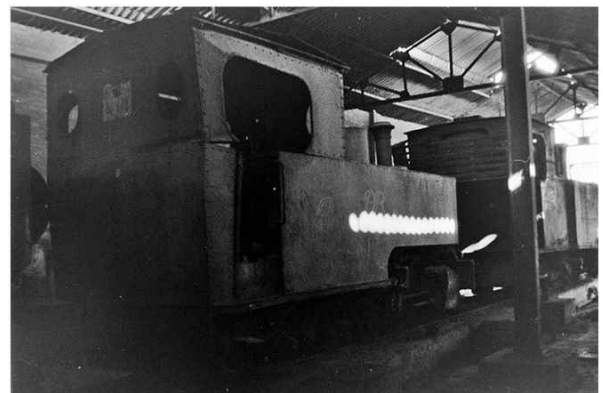
It was decided that the steam hauled train would not have the capacity for all our party and locals needing to travel and so an extra train was hastily made up from the lines' ambulance coach and an old jeep that had been adapted to



run on the tracks. My brother, also an enthusiast, and I travelled in this train. We stopped at one intermediate station and then stopped at Banjari station which was as far as we travelled. To the surprise of those like me who had not done our research, this was the location of the Kalyanpur Cement Ltd. factory and they also had steam locos. The company gave us a warm welcome and we had lunch in the works canteen with the manager and visited the loco shed where there was one loco long out of use, a 0-6-0 tank built by Manning Wardle in 1909. Two further disused locos stood



outside – another Avonside 0-6-2 tank from 1929 and a quite modern one from Hunslet Engine Co. of Leeds from 1947. One loco was in steam, a Baldwin 0-6-0 tank, much rebuilt, but first built in 1919 for the Bengal Provincial Railway.





Just as an aside, I recently found online one of my photos from this visit posted by someone who claimed it to be of the opening day of the railway to Rourkela back in the 19th century! Just goes to show that you shouldn't believe everything you see on the internet!

An amusing incident occurred before we made our return journey. Obviously, a converted jeep is not a vehicle easily converted to run long distances in reverse and there was no turntable at Banjari. The solution was to balance the jeep on a large jack and spin it round. This was a risky job and, as might be expected, the jack began to tip over part way through the operation! Fortunately the railway men must have been used to this happening and pure muscle saved the day.

On our return journey, we came to a halt in the countryside at a small station with a corrugated iron hut. We discover this was our scheduled refreshment stop as the one at Kalyanpur was unexpected. The 'hut' turned out to be a kitchen and the head cook sat cross legged on the worktop while two young lads did the work using rather grubby looking utensils which the 'boss' occasionally wiped with an even dirtier cloth. Now the participants on this tour were all British and many were quite old and had never travelled much beyond Europe. The food was typically local and that also made it less than attractive to many of the group [one of whom had insisted on eating only plain boiled rice and oranges for the whole trip!]. My brother and I, being well mannered and polite, ate what was put in front of us which prepared me well for the many visits to India I made in the future. We eventually arrived back at Dehri-on-Sone.

After our visit to the DRLR, we visited Rohtas Industries factory, the main reason for the railway's existence. This concern had, over the years, operated as a sugar factory, a cement works, a paper factory, a chemical works and a soap works becoming finally a producer of asbestos and cement. The firm had seven locos in 1980, all steam, and these came from three very different sources. The oldest loco, No. 1, was a four coupled little tank engine built by Kerr Stuart in the



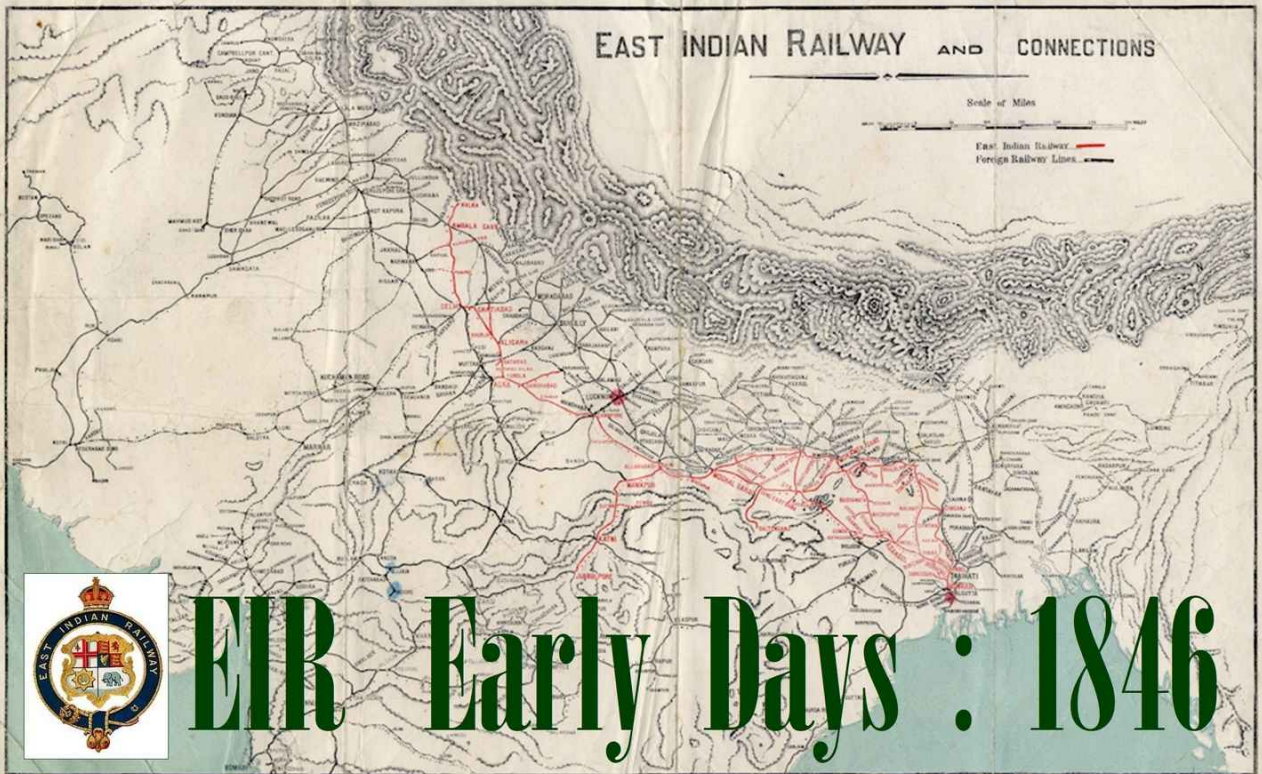
UK in 1921. Numbers 2, 3, 4 and 5 were six coupled tank engines built by Jung in Germany in the 1950s. I think one is now preserved. Finally there were two ex EIR CT class 0-6-4 tanks. On the day of our visit one of these was working along with one of the Jung's.



After this visit we returned to Gaya where we were scheduled to stay in the tourist lodge. Unfortunately, not for the first time on the tour, the arrangements had gone wrong and we were diverted to the tourist bungalow which proved to be very dilapidated and dirty. We mounted a protest and ended up sleeping in hastily assembled mattresses in the dining hall of the tourist lodge where I became a tasty meal for the local mosquitos. We departed for Varanasi at 5.45am the next morning.

Author is a British based railway photographer recording railways around the world for 60 years. Author of two Photo Books *Steam in the British Coalfields* and *Turkish Steam* published by Amberley Publishing. All photographs provided by the author.





Part - III

- P K Mishra

History: The Court of Directors, called upon to sanction the establishment of Railways in India, amidst the claims of various lines competing for precedence, were facing tremendous difficulties in taking a decision as the requisite information was available neither with the Court at England nor with the Government of India; and Directors were hesitant to introduce system of Railways in India without examining its practicability in the country. These circumstances, added to the habit of caution and a constitutional jealousy of innovations, induced the Court to appoint a Commission, with a Civil Engineer at its head, to investigate and report its opinion on these questions; and it had engaged the service of Mr. F. W. Simms, a gentleman, whose eminent qualifications were too well known. On Mr. Simms's arrival in India two Officers of the Bengal Engineers, Captain H. C. Boileau, and Captain J. R. Western were associated with him; and under instructions of a general kind from the Court of Directors, together with other instructions from the local Government, they proceeded on a tour from Calcutta to the Upper Provinces, making such detours as they deemed proper, for the purpose of ascertaining the nature of the country, and on their return in March 1846, they made the Report.

Simms Report:

The Commissioners submitted their report upon the practicability of introducing a system of railways into India, carefully considering the peculiarities and circumstances of the country and climate, in reference to the minutes of the Honourable the Court of Directors, of the 7th May, 1845. They stated that railroads were not inapplicable to the peculiarities and circumstances of India, but on the contrary, were not only a great desideratum, but with proper attention could be constructed and maintained as perfectly as in any part of Europe.

The great extent of its vast plains stretching for hundreds of miles in some directions without encountering any serious undulations, the small outlay required for Parliamentary or

legislative purposes, the low value of land, cheapness of labour, and the general facilities for procuring building materials, made the introduction of a system of railroads eminently suitable to India. The Report next referred to the difficulties suggested by the Court as peculiar to the climate and seasons of India, which were : Periodical rains and inundations; the continued action of violent winds and the influence of a tropical ;the ravages of insects and vermin upon timber and earthwork; the destructive effects of the spontaneous vegetation of underwood upon earth and brickwork; the unenclosed and unprotected tracts of country through which railroads would pass and the difficulty and expense of securing the services of competent and trustworthy engineers. These difficulties were disposed of by the commissioners in a concise, business-like, and

satisfactory manner.

As to the periodical rains and inundations they said: "We do not expect that, with a judiciously selected and well-constructed line, any serious mischief to the works may be anticipated from this cause, nothing but what a moderate annual outlay will set to rights."

Mr. Simms and his coadjutors at once vindicated the propriety of railways in India, and showed that the local difficulties assumed present no valid objection. Simms stated that the practicability of keeping a railway in order was shown by the existence of dykes and roads, metalled and unmetalled in various parts of the country, which were kept in order at a trifling outlay. Even in Egypt, a country open to the widest river floods, earth works had for thousands of years withstood the utmost power of time, season, and weather. --- *RAILWAY REGISTER, SEPTEMBER, 1846.*

Commissioners observed that Both Bengal and upper provinces were extremely susceptible to unprecedented inundations and suggested that works should be constructed taking into account the highest floods hitherto known. A railway in the Lower provinces might be securely constructed upon raised bunds or embankments, and these might be kept up at a moderate annual outlay. The line could be called judiciously selected only when it could be constructed and protected in the entire stretch from various dangers. As to the continued action of violent winds and a vertical sun, the Report said that suitable arrangements in the construction of the works would overcome any difficulty arising from these causes as to the line itself. These effects would be more felt in working the trains, especially the wind, at high velocities, but no fears needed to be entertained upon this subject as to the ultimate result, though, during the prevalence of the hot winds, more than usual attention would be requisite in watching and guarding against the effects of friction of such parts of the engines that might be exposed to the most intense heat. As to the ravages of insects and vermin on timber and earthwork, it said that the destructive action of insects upon the teak and iron wood of Arracan would amount to nothing, or next to nothing; but suggested use of stone or treated timber, if wood was found to be affected. Captain Western, who had been in Arracan, stated, that he would not guarantee teak as resisting damp and insects, but iron wood he knew from practical experience to resist both, and had seen a post taken up, after having been in the ground 15 years, as sound as the day it was put in. To the earthwork no serious mischief was to be apprehended from this cause, if the overseers and labourers on the line discharged their duties in a proper manner. Earth works in the Upper Provinces, constructed in a loose soil, had occasionally been damaged by the undermining of rats, crabs, otters, or other burrowing animals, but constant vigilance would provide an effectual remedy for this difficulty.

Calcutta Review, quoting the opinion of a Railway authority,

remarked that as the ants attacked only things in a state of perfect rest, not improbably the Railway sleepers, at least, would be rendered impregnable by the motion of the trains over them.

Captain Boileau suggested that the attention of the persons in charge of those portions of the line, passing through young Saul forests, must be particularly directed to this point, as Sal trees had been known to spring up again to an altitude of about 15 feet in two years. The rapid growth of Palma Christi (the castor oil plant), the gigantic reed called Surkunda and Nurrul, and many other such wild productions, might give considerable trouble, though the strong roots of the latter were admirably adapted for giving stability to an earthen bank. The roots of the Peepul tree were particularly injurious to brickwork, but could be easily extracted. Regarding the unenclosed and unprotected tracts of country, it suggested that a fence similar to quick fences in England would answer through the open and cultivated parts of the country. Such fence might be formed of the plant called the Berandu or the Mysore thorn, or the prickly pear, all of which, and perhaps many others, if kept well-trimmed, would make a suitable fence. In several localities where stone was obtainable in abundance and soil was too barren for the growth of hedges, stone must be used for boundary walls, and, in the vicinity of Saul forests the exceeding straightness of this wood would render it particularly valuable for construction of posts and railing. The difficulty and expense of securing competent and trustworthy engineers could be overcome by proper planning by the railway companies. A few native, or East Indian young men should be sent to England to be trained, who could take charge of engines in India. Such native youths, while in England, should not only be instructed to drive an engine, but to repair them when out of order. Under the superintendence of one or two English engineers, there would be laid the foundation for the training of as many native engine drivers as might be required. Mr. Stephenson had earlier started classes in Calcutta for teaching Architectural and Mechanical Drawing and the principles of Surveying and Mensuration.

It was the remarkable foresight on part of Stephenson that without waiting for approval for introduction of Railways in India, he started training of natives on technical matters and had opened a school for native superintendents in Calcutta and 534/- was spent in training from 14th May 1845 to 5th April 1847. --- *ANNUAL MEETING C I R, APRIL, 1847.*

The Commissioners did not give any opinion on the probable returns of merchandise and passengers citing lack of statistical information. Having disposed of the objections arising from the climate and seasons, the Commissioners declared that it was not inexpedient or unwise to attempt the introduction of railways into India to any extent that private enterprise might be found willing to invest. Equitable conditions and regulations the Government might think

proper to require for the promotion of their own, and the general interests of the country at large, at the same time having due regard to that of the parties engaged in the enterprise.

Experimental Lines

The Commissioners were instructed to suggest some feasible line of moderate length as an experiment for railroad communication in India. Accordingly, the Report suggested a line from Allahabad to Cawnpore, or if this be thought too extensive, from Calcutta to Barrackpore: the former would be about one hundred and twenty-six miles long, the latter fifteen miles.

The issue of experimental line would invite lots of criticism; Calcutta Review reported that they were not aware of any line in England which in any just sense could be said to be experimental. The first important English line was from Manchester to Liverpool; but it was an entire line, and undertaken and executed with perfect confidence of success, and not at all as an experiment.

It said that the proper width of gauges, the forms of machinery, the greater or less power required in the various gradients; these were questions in which science was aided by experiments; but the practicability of a railway in a country where the height of every hill, the velocity and depth and direction of every river, the geological features were known, was not an experimental question as regarded the engineering apart from the commercial considerations.

What then we ask is to be proved by our experimental railroads? Plant the railroad where the country is exposed to inundations! If it is washed away will it prove that railroads will fail in parts not subject to inundations?

The idea would be termed as unscientific, pusillanimous, and, in effect, hostile to railroads as there was no rational answer to the questions related to object and purpose of the experiment.

The Proposed Route

The Report next described the route which the Commissioners recommended from personal examination of the country for a line of railway connecting Calcutta with Mirzapore, and from thence to Delhi and the North West Frontier. First impressions, they stated, would lead to the supposition that the proper course would be to cross the river Húgly at Calcutta and proceed from its right bank in the direction of Bancúrah; but this line of country was subject to periodical inundations; and in the event of the embankments of the Damúda breaking, to powerful torrents which might act very injuriously to a railway. The Commissioners therefore suggested that the railway should proceed up the left bank of the Húgly, and cross the river a little below Chandernagore (about 18 miles from Calcutta); or proceed still higher up the left bank to Nuddea, and cross the Húgly

just below the junction of the Bhagirutti with the Jellinghi. The line would quit Calcutta at its northern extremity, skirt the gun foundry at Cossipore, and take a direct line northward nearly parallel to the Barrackpore road, following the general direction of the river, to accommodate Chinsura and Hoogly, & c., and onward by a straight course to Goonpulla, on the road between Barrasut and Ranaghat.

The commissioners preferred slightly longer line instead of direct line from Calcutta to Goonpulla avoiding Barrackpore, & c., which would have been cheaper to construct as they wanted to accommodate the neighbouring localities of Serampore, Chandernagore, Chinsura, Hoogly, & c., which would become the favourite resort of the citizens of Calcutta, and be a source of remuneration to the Railway itself. From Goonpulla, the line was to take nearly a straight line towards Ranaghat, proceeding almost parallel to the road leading to Kishnagur and cross the road from Kishnagur to Santipore, near to a place called Dignagur. It would then continue to curve until it crossed the Hoogly, near to an indigo factory, called Punchilla, which was south of the junction of the Idinghee and Bhageruttee. After crossing the river, the Railway would be carried in nearly a straight line past Singalee, Baljoree and Balkishure, which is the place before alluded to as 10 miles north of Burdwan.

The Commissioners suggested that line be taken through Ranaghat and Nuddea, an extra distance of 30 miles, being a rich district of country, instead of taking it in the direction of Hoogly and the trunk - road to Burdwan. With a view to avoid the extra bridge over the river Matabhanga, Commissioners examined another line that would take a more direct course to the river Hoogly, crossing near the villages of Collipore, on the east side thereof, and Doomurda on the west, thence onward to Inchura, where it would cross a nullah, and, leaving Culna on the right, would curve to the north and west by Sacheroy, and, crossing the Bauha and Kurree nullahs, join the Nuddea Line, near to the before - named Balkishun, about 10 miles northward of Burdwan. From Balkishun, as a common point on the two northerly lines, the rail way was to proceed nearly direct to and cross the trunk-road at about Kagsa, where the Southern or Chinsura Line, after passing through Burdwan, and nearly following the course of the high road from that city, would be united with them. It was to further take the left bank of the river Dumoodur, pass through the Raneegung collieries, and onward to near where the river Barrakur joined the Dumoodur.

Damuda Commission

In August 1846, a Commission was appointed to proceed up the Damúda and examine the effect of the bunds (embankments) and report on the system of bunding. The commission was of the opinion that the danger in the lower parts of Bengal from the overflow of the rivers would be

lessened, if the waters were being allowed to run freely. The Damūda Commissioners had proposed to substitute a system of drainage in lieu of the existing system of embankments to cut through the natural bank of the river and relieve river bed by openings and channels instead of raising an artificial one. Confining the waters to their principal bed led to progressive rising of the river level. They anticipated that if flood water was allowed to drain away by openings and channels, there would be less breaching of embankment and less frequent inundations of the land. A rail road constructed could be better protected against violent breaches and destruction caused by flood.

Mr. Simms was a member of the embankment Commission, but these anticipations were not before the railway Commissioners when they made their Report. The Commissioners proposed a detour instead of the most direct line as by flanking the Damūda, Railways would, in part, escape the water that flowed towards the sea in the direction of that large river, but not be wholly free from its effects. A considerable amount of damage to the works of the railway was apprehended in case of the breaching of the bunds of the river. It was considered advisable to abandon the preservation of the river bunds, and to allow the waters during the rainy season to overflow the surrounding country, in the expectation that the sedimentary matter that was now raising the bed of the river might overspread the country, and would raise the general level. Such a procedure would have an effect upon the railway works that was difficult to foresee or provide for, except, in all probability, by the construction of a larger quantity of viaduct for the free passage of the waters than would otherwise be necessary, and thus increase the cost and maintenance of the works.

The Colliery Line

The Report described the line as passing through the Ranigunge collieries crossing the great coal field of Burdwan and (probably) Pachtet, a fact of very great importance as the greater part of the native coal consumed in Bengal was brought from this district. The coal field consisted of some hundreds of square miles, and contained coal of various qualities. The Coal trade was nearly a monopoly, the price being approximately 30 per cent higher than it ought to be and the supply of coal was highly erratic; and the quality generally inferior, so much so, that English coal was imported in large quantities.

Dunwa Pass

The line would next take up the valley of the Barrakur, and follow, approximately, the course of that river, nearly for its' whole extent, to the summit of the country at or near the Dhunwa Pass, where a very rapid descent occurred from the westernmost range of hills in Bengal to the plains of Behar. Up to or near the Dunwa pass, about 250 miles from Calcutta, the Commissioners stated that the gradients of the line would be very easy, and although steeper gradients

would have to be there introduced to overcome the natural barriers. This was the only place upon the whole line where favourable gradients could not be obtained at a small cost, as regards the earthworks.

Fording the river Soane

The river Soane was a formidable obstacle to the cheap construction of a railway, being two miles and three furlongs in breadth, and the foundation or natural substratum below an unknown depth of sand. The erection of a viaduct across this great river was, however, a matter of expense only, there appearing no difficulty in the case that perseverance and ingenuity would not overcome. The commissioners felt that Indian railways would probably be among the very cheapest, if it were not for these great rivers. The most suitable point for crossing the river seemed to be about three miles higher up than where the trunk road crossed it, the foot of the range of sand-stone hills, from which much valuable material for the structure might be obtained. Granite of excellent quality could be quarried about twelve miles south-east from the proposed site of the bridge and Lime also was obtainable at or near the spot.

Bridges - Planning for Extra Width

The commissioners recommended that all bridges of great magnitude erected by Government should be made sufficiently wide and strong to admit a railroad, and railroad bridges in like manner to admit a common highway. Surprisingly viaducts were not covered. In the construction of this bridge, and of all others of great magnitude, as the crossing of the Húgly and the Jumna, hereafter to be referred to, we would recommend that they be made of ample width, not only for the railway, but also for a common highway, which may be separated from the railway by a screen of masonry.

The additional cost of such extra width, at the time of construction, would be but little in comparison with the cost of a separate structure for the public highway, and compensation might be given to the railway company for the extra outlay, either by Government supplying an equivalent portion of the cost, or granting them the right of levying a toll for a given number of years., the commissioners suggested. The commissioners advised that all bridges of great magnitude, erected by Government, for the purpose of any public highway in any part of India, should be constructed of ample width to accommodate a railway also, if there should appear any moderate probability that such a work would become desirable for, or likely to be executed in that direction within any reasonable period of time.⁹

Route to Chunar & Mirzapore

From the river Soane, the Railway was to skirt the foot of the hills to the town of Saseram, two miles north-west of the proposed bridge, and then in like manner for about 74 miles,

west by north, to the town and fortress of Chunar, on the right bank of the river Ganges, leaving the trunk-road and the city of Benares considerably to the right. This was done in order to obtain better ground for the construction of the line, and a branch to Raj Ghât, opposite to Benares, 17 miles in length (leaving the main line nine miles before reaching Chunar) would answer all the purposes of that great city and the district of country to the northward thereof. The Railway would then pass between the sand-stone hills on the south side of Chunar, which would all along furnish valuable building materials for the very numerous masonries works along the line. From Chunar to Mirzapore, a distance of 18 miles in the same direction, line would still keep along the foot of the hills, although a little circuitous, as it was desirable to avoid the bad ground in the more direct course.

Branch Lines

After deciding the route for a railway between Calcutta and Mirzapore, Commissioners proposed various branch lines to give the most extensive accommodation to the country at large, and to relieve the traffic of the Ganges proceeding to Calcutta from its great drawback during at least eight months of the year - namely, the circuitous route by the Sunderbunds, when the waters of the Bhagirutti were too low to admit of the more direct route from the Ganges to the capital of India.

The first branch proposed was from a point near Burdwan to Rajmahal, along the district of country selected many years ago by Lieutenant Colonel Forbes for the Rajmahal canal. The line would supersede the necessity for the canal, which, however, would have conferred great benefit on the trade of the country if carried into execution when first proposed. This branch, about 120 miles in length, was a modification of the line proposed by the Great Western Railway Company. The line was to capture the trade of the Ganges and also facilitate trade in the hinterlands of Purneah, Malda, Dinagepore, Rungpore, and the country in that direction through which it might possibly be found desirable to extend this refined mode of transit.

The second branch, about eighty miles in length, commissioners proposed, was to leave the main line about five miles eastward of Shuhurhotti, and pass northwards through Gaya to Patna and Dinapore, covering a very important district of country, as well as the military and civil stations; and on the opposite side of the Ganges, the valuable district of Tirhût, Sarun, &c.

Another branch might probably be advantageously made from the main line, up the valley of the Soane, to the coal-fields westward of Rotasgurh, but we do not lay much stress upon its immediate formation as a branch until it be ascertained whether or not the main line from Bombay will take that course. The last branch proposed for immediate construction on this portion of Great Trunk Line from Calcutta to the North - West Provinces, was from about nine

miles before reaching Chunar to Raj Ghât opposite Benares, a distance of about 17 miles.

The original proposal of the Commissioners also coincided with the original design of the East Indian Railway Company, to construct as many branches from the grand trunk line to complete the system of railway communication in the Lower Provinces. Commissioners while suggesting most suitable direction for a line of Railway from Calcutta towards the North-West Provinces admitted that the line would pass through a comparatively barren portion of the country, as compared with the valley of the great river Ganges, which had been suggested by other parties as the most eligible route for a line of Railway, and which was stated to have a great probability of becoming more lucrative than the line recommended. The commissioners felt that direct line with branches to Patna and Rajmuhul would take nearly all trade likely to be transposed from the river to the Railway and to the district northward of the Ganges, as Tirhoot, Purneah, Dinagepore.

Direct line, which was to a great extent contiguous to the line of the trunk-road, in addition to accommodating the trade of the river and surrounding district, as could be given by the river line, was expected to bring forward a country much neglected in consequence of its imperfect communication, a district which contained mineral wealth, and possessed great capabilities. It would be a direct line between the extreme termini, which was always most desirable.

Line from Mirzapore to Delhi

In length it would be about the same as that of the line already described, Mirzapore being about midway between Calcutta and Delhi. The direction of the line between Mirzapore and Allahabad would trend a little to the south of a direct line, to secure better ground for a foundation to the works. Upon this portion of the line the railway would cross the river Tounse, and in order to extend it into the Doab, the river Jumna must also be crossed at or near to Allahabad; a suitable spot for crossing exists near the present bridge of boats. The line would connect the military magazine at Allahabad by railway with Calcutta, and, by the extension to Agra and Delhi, with the magazines at those places respectively.

Leaving Allahabad, the railway would keep on the south west side of the trunk -road to Futtehpoore and Cawnpore, thence it might take a direct line to Mynpooree, or a longer route through Agra, and thence to Delhi, along the right bank of the river Jumna. Line from Cawnpore by Shekrabad to Agra, would not only be shorter, but would avoid the crossing of one or more nullahs than it would have to do if taken by Mynpooree. If Agra route was chosen, it would again cross the river Jumna at the latter city, and take a tolerably direct course through Muthra to Delhi. The advantage of the direct line to Delhi over that by Agra would be the shortening of the distance between Calcutta and the frontier; and line would

pass through a richer agricultural district. In case of invasion from the westward, the railway would be protected by the river Jumna.

As respects the two routes, in an engineering point of view, there appeared to be no great difference, for although on the direct line there would be the additional cost of crossing the river Hindon, while the route, by way of Agra, would be about 20 miles longer. Commission expressed their preference for Agra route. If Agra be accommodated with a branch line only, and that branch be terminated on the opposite side of the river to the city, it would be highly inconvenient and undesirable; but if a bridge was to be constructed at Agra, then the consideration would be greatly in favour of taking the main line by the Agra route, the report said.

Branch Lines

The Report recommended several branches for construction on this upper portion of the main line from Calcutta to the North -West would be one to Furrukabad, a second to Allyghur, a third to Meerut, and, upon the future extension of the line to Kurnaul, a branch could be advantageously constructed thence north - eastward towards the hills on which the sanitary stations of Simla and Mussoorie were situated.

The first branch, or that to Furrukabad, was to leave the main line about 60 miles north eastward of Cawnpore; and proceed direct, the length being about 45 miles from the line, through Shekrabad to Agra, and 32 miles if taken from the direct line to Delhi through Mynpooree.

The second branch, or that to Allyghur, would lead direct from Agra, and would be about 48 miles long. But if the direct line to Delhi be adopted, this branch would not be required, as the line itself would pass through Allyghur.

The third branch would be from Delhi to Meerut, and 36 miles long, and which, if the main line took the right bank of the river, commissioners proposed should terminate opposite to the city of Delhi, as the traffic would not be sufficient to warrant the expense of constructing a costly bridge over the river Jumna for the purpose.

The report mentioned that heavy works upon the whole line from Calcutta to Delhi, would, for the most part, be of masonry, consisting of bridges to cross the very numerous rivers and nullahs in its course, many of which were of great magnitude, and all very considerable. The earthworks would be light, except at the summit of the country near the Dhunwa Pass, at which place it might be found necessary to undertake works of a heavier kind: but, upon the whole, it is not to be expected that there exist in the world many lines of equal length requiring so small an amount of earthwork to be performed. The great bridges, planned for rivers Hoogly and Soane upon the lower portion of the line, and the crossings of the Jumna, at Allahabad and Agra, or Delhi, upon the

upper portion; were expected to be very costly, but not insurmountable difficulties; the chief difficulty would be in their cost.

The Recommendation

To enable contracting parties to open the whole line at the earliest period with the least possible outlay, the Commissioners suggested laying down in the first instance a single line of rail way, but at the same time requiring the earthworks and masonry to be constructed for the reception of a double line.

"It is highly probable that a double line of rails will be absolutely necessary upon the main trunk - line at no distant period, if not required in the first instance, and therefore we would recommend, that in consenting to a single line to begin with."

They clarified that such single line was only admissible until the whole length was opened to the public, then a second line would be added by the Railway Company on being called upon by the Government to do so. They recommend that the whole distance from Calcutta to Delhi should be viewed as one line and be worked and conducted by one company. That one company alone willing to undertake the whole was the East Indian Railway Company; and from the recent amalgamation of the Great Western with this Company, it appeared not improbable that the entire system of railway communication for the Bengal and Agra Presidencies would be the work of one consolidated company. The recommendation and subsequent patronage of East India house would make East Indian Railway as the premier railway company in the country.

The report concluded by adding, that, in addition to the line from Bombay joining the main trunk-line between Allahabad and Calcutta, it had been suggested to them by his Honor the Lieutenant-governor of the North-West Provinces, that a suitable line of country might hereafter be found for the construction of a Railway from Agra to Bombay ; by these two lines, the North -Western Provinces would be effectually supplied with communication, not only with the seat of the Supreme Government at Calcutta, but with the great seaports on the two opposite coasts of the continent of India.

F. W. Simms, C. E.

Camp Sersoul, A. H. C. Boileau, J. R. Western, Capt.Engrs.

T. L. Peacock, East India House,
Examiner of India Correspondence.

13 March 1846.

Review of Report by Government of India

This report by the Committee of Engineers was considered very carefully by the Government of India, in conjunction with the suggestions made by Mr. Simms regarding the agreement that Government should enter into with railway, companies; and elaborate and interesting minutes on the

subjects were written by each member of the Council. The supreme Government of India then consisted of Lord Hardinge, Sir Herbert Maddock, the Hon. F. Millett, and C. H. Cameron. As the Governor-General at that time (the hot season of 1846) was away from Calcutta, it fell to the part of the President of the Council, Sir Herbert Maddock, to enter into the details of the various questions.

Acquisition of Land

Mr. Simms, in a letter to Government, had recommended that the Government should deliver the land free of cost to the Railway Companies. About the acquisition of the land, Mr. Stephenson also had corresponded with Government expressing the willingness of the Railway Company to pay for the land but land was to be acquired by the Government. Mr. Simms' suggestion, that Government should provide land free of cost for railway companies, met with the approval of the President and the members of Council. The contribution which the Government might wish to make towards defraying the cost of the construction of railroads in India on their first introduction, could most appropriately they thought be made in this shape.

On the proposal of Mr. Simms', the letter of Government said, "It is entirely approved of by us, because we are of opinion that the purchase of land required for railways is a transaction capable of being effected much more easily by the Government than by a Railway Company; and because we consider that if substantial assistance of any kind is to be given by the Government to Railway Companies, Mr. Simms's proposal suggests the least objectionable mode of affording assistance."

The tenure under which land was held in India being complicated and intricate, it would be more convenient both to Government, to the proprietors of land, and to railway companies, that the Government should take up and adjust the claims for compensation for land required for railway purposes, than to grant compulsory powers to railway companies themselves.

Government Control over Railway

The next question discussed was in what manner, should the Government of India, exercise control over the plan and construction of railways, and over the management of them when open for public use; and secure itself the option of becoming hereafter the proprietor of railways which might now be constructed by private enterprise.

Mr. Simms, adopting a principle of the most recent railway legislation in England, had recommended that after a certain number of years the railway should be delivered over to the Government in a good and substantial state of repair without payment, except for locomotive engines, carriages, trucks and the various tools and materials. In case of a Railway Company failing on their part to complete the construction of a line once commenced or to maintain it when completed,

Mr. Simms had suggested that the Company should be required to pay into the Treasury one-tenth of its proposed capital.

On this question Sir Herbert Maddock did not agree with Mr. Simms' proposal, that railway companies should deliver over to Government, at the termination of their lease, in good substantial repair, but free of cost, the whole railway; plant alone being excepted for transfer at a valuation. He doubted whether the projectors of any of these railways would consent to an arrangement to forfeit at a certain period the whole of the capital vested in the undertaking, nor did he think it certain that Government would then find it convenient to undertake the working of railroads. He thought that it would be quite sufficient to secure to Government the option of becoming the proprietor of a railway, at a certain date on settled terms at the expiration of a certain period, or of entering into a new engagement with the railway company. It would be necessary also, Sir Herbert considered, that the agreement between Government and railway companies should make provisions for the consequences in case of failure by a railway company to construct or maintain a line which they might undertake to construct and work. In the case of a failure to complete a railroad, the whole of the works, materials, and plant must be forfeited to the Government, but in the instance of a line not being properly worked after completion some negotiation would be requisite. He thought that it should be a question for arrangement; but he did not acquiesce in Mr. Simms' proposal, that the omission to run one through train each way each day, should be deemed proof that the railway was no longer used as such. His opinion of the probable traffic and profits was far more moderate.

But though thus unanimous in disapproving a guarantee of interest, yet all the members of Government concurred in thinking that Government should have the power of directing the plan and manner of constructing any railway in India, and a control over its management when opened for traffic.

Indeed, they went further; and arguing that the free-grant of a lease of the land required, put a railway company under great obligations, stated that they thought that Government should have perfect control over, and should be the sole and final judge of what is best and proper on every point connected with direction, plan and construction of the road, and carriages to be employed on it, and should besides settle all tariffs at the proper time.

Selection of First Line

There remained but two more points for discussion, but both of them of the highest importance; the one, the line to be selected as the first railroad to be made in India, and the portion of it which was to be at once commenced as an experimental line; the other, the probable cost of constructing a railroad in India per mile, and the returns likely to be obtained from it when completed and brought

into operation. On the first point the Committee of Engineers had dwelt at considerable length, and their views on the subject have already been explained; but on the second they had been perfectly silent.

Sir Herbert Maddock pointed out eloquently that there was no need to begin upon a short line. The opinion of the engineers that railways might be constructed and maintained in India as well, and as efficiently as in any part of Europe, might confidently be relied on and accepted by Government; and therefore, an experiment to prove this point was not required. He suggested that two points of political and commercial importance should be selected, in case, the Court desired that a railroad of moderate length might at first be made as an experiment, to test the ultimate advantage to Government, the public, and projectors, from the introduction of. He urged that it would be better to try a long than a short line; the long line would connect distant marts, fertile districts now without an outlet for their produce, with the port of Calcutta; would join arsenals, and would add to the moral and military strength of Government. He summed up his arguments by stating that there was no valid objection to a line on account of its magnitude, but that, on the contrary, the ratio of benefit was likely to increase as the scale of the work was enlarged. From these considerations the President of the Council argued that the long line from Calcutta to Delhi should be chosen as the railroad first to be encouraged; and the portion from Calcutta to Burdwan, with a branch to Rajmahal should be selected for experimental construction, if after all an experiment should be deemed necessary.

Cost Estimates

As the engineers in their report had not alluded to the probable cost or the remuneration to be eventually obtained from the outlay, a letter was especially addressed to the committee, requesting their opinion upon these points; and thus pressed, they replied that they thought that the average cost per mile of railroad completed for working, but without rolling stock, would not be less than 14,000/., but more probably 15,000/.

In the Diamond Harbour Report, however, which was dated several months later, Mr. Simms had given the cost of Railways in several countries. Fifty-seven Railways in the United Kingdom of Great Britain and Ireland, of the total length of 2,177 miles costing £ 76,137,441, being an average of £34,965 per mile, the lowest being £6,940 per mile, and the highest being £55,330 per mile.

The cost of construction of Railways in France ranged from was £ 18,050; the highest (from Paris to St. Germain's) £39,000 per mile. — (CALCUTTA REVIEW VOL. VII, 1847.

Commissioners had declined to give an opinion on the returns probable, as they were entirely without data on

which to base calculations.

Views of Governor General

These minutes and the reports were all sent on the 9th May, 1846, to the Honourable Court of Directors, and a copy of them also was forwarded to the Governor General, who was at Simla, when the opinions of the members of his council were written. Some months afterwards, in July, Lord Hardinge, the Governor General recorded a brief minute on this important subject, which was remarkable for the sagacious and clear views expressed in it regarding the need of more substantial aid to railway companies, if they were to be encouraged to form railroads in India, than his colleagues were disposed to grant.

Lord Hardinge concurred generally in the views taken by Sir Herbert Maddock, but did not think that the lease of land to a railway company, estimated roughly as a gift equal to 200/- a-mile, was commensurate with the advantages which the State would derive from a daily communication between Calcutta and Delhi.

A contribution of 200/- a-mile to a work roughly estimated to cost 14,000/- a-mile seemed to the Governor-General too small assistance, and he observed, "I am confident, however, that English capitalists will not, without more information on these points (i.e. cost of construction and the probable profit) and more substantial encouragement from the East India Company, enter into the speculation;" and again, "I am confident the speculation of the railway company will entirely fail, unless it be largely and liberally encouraged by the East India Company."

A daily mail between Calcutta and Delhi would add greatly to the vigour and confidence of Government. Compared with the system of dak runners, such a speed would seem to give ubiquity to Government. The political advantages which the State would obtain from a system of completed and efficiently worked railroads are so palpable and clear that they had only to be mentioned to be appreciated. Military considerations were even more cogent. Increased efficiency combined with numerical decrease of the army and consequent economy would follow directly from the facilities of movement which railroads would afford.

The commercial, social, and agricultural benefits were inestimable, and were admitted to be so on all hands— and therefore, from political, military and commercial considerations, Lord Hardinge thought that the Court of Directors should liberally give assistance to private capitalists, ready to make railways in India; without awaiting proof that the construction of railways would afford reasonable profit on the outlay.

And in conclusion, the Governor-General stated that in his opinion, "on military considerations alone, the grant of one million sterling, or an annual contribution of five lakhs of

rupees, may be contributed to the great line when completed from Calcutta to Delhi, and a pecuniary saving be effected by a diminution of military establishments." Lord Hardinge was of the view, that without great pecuniary aid it would be impossible for joint-stock Companies to raise capital sufficient for the construction of the great railroads of India; and that Government should not grant money except for work actually done.

Report of Stephenson

An extremely important letter that paved the way for formation of EIR was survey cum field observation report dated April 8, 1846, of Robert Stephenson to George Larpett, chairman of East Indian Railways. This letter along with famous minutes of Dalhousie would subsequently decide the fate of Railways in India.

Board of Directors of the East Indian Railway Company, vide letter dated July 14th 1845, advised Managing Director. Mr. Stephenson, to visit India to hold discussion with Government of India, to prepare ground works for future arrangements and to conduct field survey. He was accompanied by three surveyors namely Thomas Henry Duncan, T. W. Collett, and W. Romaine, who conducted a careful survey of the line for a railway between Calcutta and Delhi, by way of Mirzapore and Allahabad, and collected statistical and general information essential to the interests of the undertaking were collected. Expense of the entire survey did not exceed £4,000, original sanctioned limit. Full assistance was rendered by Government of India, report of consulting engineer Mr. Simms was being dispatched to the court of directors of the East India Company for taking a view on the subject.

Mr. Stephenson recorded that the line which had been selected, and surveyed, would most effectually fulfil the conditions required, as embracing the greatest commercial and social, with the most important political and military advantages, connecting Calcutta with Delhi, and Agra, passing through Mirzapore and Allahabad, with branches to Benares, Cawnpore, and Patna. and which, provided it shall receive the sanction and approval of the Government, this line was to avoid the heavy inundations of the plains of Bengal, by following the highest ground, between the rivers Adji and Damooda, and proceeding along the valley of the Barrackur, ascend the hilly range at an inclination, in no case exceeding the limits of locomotive power. The descent towards the Dunwa level, was more abrupt, but still admitting of such gradients, as would render the use of fixed engines unnecessary. The crossing of the rivers Soane and Hoogly, of the Tonse above Mirzapore, and the Jumna at Allahabad, constituted the principal heavy masonry works. The beds of all these rivers had been carefully examined, and the borings were still in active and rapid progress. From Allahabad to Agra and Delhi, the country presented fewer engineering difficulties and the inclination of the country

rose gradually from Allahabad, varying from twelve to thirty-six inches in the mile, with scarcely any perceptible variation.

Draft Acts of Incorporation for the East Indian Railway Company and General Railway act were prepared; with the assistance of Company's Solicitors, Messrs Freshfield, Secretary of committee and the best legal advice in Calcutta. One additional Draft Act for adapting to the purposes of the Railway Company, the existing Act, No. 1, of 1824, under which, the Government appropriated land for Public Works, was also prepared.

Calcutta and the North-west Provinces should not be regarded as a purely commercial speculation, but as a national and political object, sanctioned, supported, and protected by the Government. Without such co-operation, to the fullest extent, on the part of the Government of India, the Directors of the East Indian Railway Company would not be justified in proceeding further in the undertaking, Stephenson reported. The Statistical Returns and Documents bearing upon the trade of the country traversed, or indirectly affected by the Railway, was to be handed over to Secretary of EIR, Mr. Noad by Mr. Stephenson. The specimens of materials, required for construction of the works like several varieties of granite, gneiss, sandstone, timber, limestone, kunkur, & c., have been identified. The Company will have the advantage of several varieties of granite and sandstone, lying close to their works. The timber for the lower portion of the line between Calcutta and Mirzapore was to be obtained from the forests to the south of the road, also from the Terai of Nepal, and the Gorruckpore districts, which would be floated down the Gunduck, Gogra, and Ganges to Patna, and thence taken to the works. For the upper portion of the line, the Sal Forests in the Terai of the Himalayahs, and the Valley of the Dhoon, was to supply the principal portion, which would be floated down the Doob Canal, from Seharunpore to Delhi, and thence distributed.

In the provisional arrangements which had been made for securing labourers upon the road, especial regard had been paid to the necessity of providing, for so large a body of men, a sufficient and uniform supply of provisions and the means of shelter necessarily required, as well as for the regular remittance of funds for their payment. Arrangements would be required to be made for the supply of tools of all descriptions to the workmen employed. Stephenson suggested that the native practice in use for blasting the rocks, by previous heating and pouring water along the heated surface in the line to be separated, would also be found, in several cases, to deserve consideration. This being the great trunk line of the country, was likely to receive which, at no distant period, would receive a constant increase of traffic from the numerous tributaries on either side of the main line. Stephenson estimated that if Board should decide to construct the works adopting all the recent

improvements, and carrying a double line throughout from Calcutta to Delhi—the expense, including the bridge over the Soane, of between two and three miles in length, would not exceed £ 14,000 per mile. A map, showing the entire internal traffic of the country, which would contain verified trade returns, was in preparation for the use of Board of East Indian Railway Company.

The advantage in regard to the less expense for wear and tear of wood sleepers over stone rendered it a point of more than ordinary importance to place the question of the durability of timber, so particularly referred to in the Minute of the Honourable Court of Directors, beyond doubt. Prepared pieces of wood, taken out in July last to India, were exposed in all possible ways to damp and heat, as well as to the white ants. The results were satisfactory. Dr. Patton, the Postmaster at Allygurh, the pioneer of the improved means of conveyance in the Upper Provinces, had found that by boiling the wood of the Babool for twenty-four hours in its own juices, the usual splitting was entirely avoided, and the wood preserved. There was no reason to doubt the durability of stone and other building materials in India. Sufficient evidence in confirmation could be found in the extraordinary state of perfection and soundness of so many of the public buildings, in all the large cities; amongst which might be mentioned the tomb of Sher Shah, the Tiger King, who died in 1545 at Sasseram, the building being nearly three hundred years old. Those at Delhi, Agra, Secundra, Bhurtapore, Lucknow, Benares, and elsewhere, as well as the remains of bridges, and works in which the ultimate destruction, where it had occurred, was perceptibly attributable to an imperfect mode of constructing the foundations, but in scarcely any instance to the decay of the materials.

In view of the importance of obtaining a good coking coal for the use of the Locomotives, specimens of coal from several districts had been transmitted for the inspection of Board. The appointment, however, by the East India Company, of a geologist and coal surveyor, was expected to be helpful in working the best description of coal to be found in the country. It was not possible to express opinion on quality of native coal as the collieries had never been worked to a sufficient depth, 1,000 feet or more. Pits had been traditionally sunk in the range of 50 - 100 feet in the Coal Fields. That the loss by exposure, speculation, and accidents, during the long period now necessary to convey the Burdwan Coal to the markets, is excessive, there appears to be no difference of opinion. In August last, thirteen out of sixty laden boats were sunk in one night. There was no doubt but that the Coal Fields of Burkatta, of Segrowlee, of Berar, near Hazarebaug, of Behar, near Hosungabad, in the Nerbudda Valley, of Sylhet, of Orissa, specimens of most of which had been forwarded to Board, and others, would now be carefully inspected, and at no distant period worked, and the supply

of good and serviceable coal reduced in price, and materially improved in quality. For the prevention of the effects of damp, decay, insects, and overgrown vegetation, every possible provision would be made.

Regarding the disadvantages of the climate referred to in the Honourable Court's Minute, Stephenson mentioned that there were advantages as well as objections to be found in the peculiarity of the climate, and that it offers capabilities, if properly availed of: for the construction of more substantial and permanent roads than elsewhere. The difficulties under which the Government labour in this respect would not be experienced by the Railway Company. The impossibility of providing from among the limited number of Engineer Officers, sufficient means of effective superintendence over the vast extent to which the Roads and Public Works of the country are carried, could not be questioned. Their employment is excessive, their duties heterogeneous, and far too comprehensive. It is only surprising that so comparatively few errors have been committed, and speaks highly for the ability of men, uneducated for Civil Engineering, or Architecture, that they have combined these duties in an eminent degree, as well as performed the work, and exerted the talent, labour, and responsibility, without, of course, any participation of the profit, of contractors, in addition to their functions of Military engineers.

The unusual inundation which occurred at the period of the rains last year reflected the highest rise of the waters under extreme circumstances. These floods appeared to have been experienced at intervals of such uniform regularity for some years past, as to induce the impression that their cycle was periodical, requiring more careful and extended observations. The heaviest inundations had taken place in 1812, 1823, 1834, and 1845.

As regards the mechanical contrivances in native use, of every description, the simplicity and economy of their construction, with their moderate charge for labour, would render competition by means of more improved and perfect machinery less necessary and advantageous than at first sight might appear.

Stephenson planned to write a separate memoir with drawings and descriptions of all the machinery in use in India, for the various purposes of drawing water from wells — of raising it from reservoirs — for thrashing corn — for expressing oils, and crushing the sugar cane — for cleaning cotton — smelting iron — preparing mortar and making tiles — of making shot — cutting wood combs — altering the direction and deepening the beds of rivers — and for the various other purposes to which the most rude and simple description of effective mechanism had been applied from time immemorial.

Native Merchants travelling along the road with loaded camels, bullocks, and hackeries, who would earlier travel at

speed, never exceeding two and a half miles an hour, had been reduced to less than one mile per hour, from the state of the roads, and that their cotton and other merchandise, were constantly damaged in crossing the rivers. They travelled during about ten hours each day, and would readily pay as much as four shillings for each hackery to cross the Soane River by a bridge. The cost of a small parcel of Books sent to Segowlee, ninety miles beyond Dinapore on the Ganges, was Twenty-Three Shillings, and took Fifteen days. Cost of Beer in Cawnpore was Eighteen Shillings per dozen, for which Ten Shillings was paid in Calcutta, adding Eighty percent for cost of carriage and insurance. Equalizing the price of food was one of the most prominent benefits of the introduction of the Railway, which would be most sensibly appreciated throughout the whole native population.

The imports and exports for the year last past, for Kurnal, Delhi, Hodul, and Agra, of merchandise and produce, on which duty was paid, alone amounted to 115,763 Tons. The Returns from the Canal office at Calcutta, of the number and tonnage of vessels which passed through the Circular Canal and Tolley's Nullah between the 1st May, 1843, and 30th April, 1845, showed an aggregate traffic during the two years of 249,485 vessels, paying tolls to the amount of upwards of £34,000, the rate of toll chargeable on all boats being 1s. per 100 maunds (820lbs.), and no toll was levied on boats of less than 25 maunds burthen.

At the Jungypore toll on the Bhaguretee river the number of boats paying toll, between the 1st May, 1842, and 30th April, 1843, amounted to 48,956 vessels of all descriptions, paying upwards of £16,000. Between the 1st May, 1843, and 30th April, 1844, 50,320 vessels, paying £16,460; and between the 1st May, 1844, and 30th April, 1845, the number of vessels amounted to 49,933, and paid £16,200. In the above returns no account was taken of the troops, their stores, or ammunition, upon which no toll was taken, nor of the opium from Patna and Benares, which also passed free. Until within a few years, the insecurity to Life and Property was such, as to oppose an almost insuperable bar to the extension of trading operations among the Natives in the interior. The Thugs, in the Four years between 1826 and 1830, had plundered travelers in one district to the extent of between Twenty and Thirty Thousand Pounds, and murdered them all. Capt. Willis, the able Superintending Engineer of the Trunk road, was deputed to ascertain the entire traffic in both directions; at three several stations along the road between Calcutta and the North-west, viz. at Burdwan, at Buggodur, and at the Soane River.

Introduction of Railways in the country had become subject of constant conversation and interest among native troops who could more frequently obtain leave to visit their families. Of 160,000 active troops in the Presidency, one-fifth, or an average of twenty out of each Company of one hundred men were always absent on leave—that this left averages five to six months—and that on their return other twenty men were

allowed to leave. One-fifth or 150,000 men were thus leaving and returning four times in the year, viz., one-fifth would leave and rejoin in the first six months, one-fifth more in the next six months, and four several journeys were therefore made by one-fifth of the whole number annually. One-fifth of 150,000 = 30,000 x 4 = 120,000 men, would annually proceed to or from their regiments home. Their pay averaged sixteen shillings a month, and during absence thirteen shillings. The average absence at present was five months, of which three were spent upon the road, and two at home. Each man lost fifteen shillings by difference of pay, in addition to his cost of living while travelling, at least an anna (1-1/2d) a day, or about eleven shillings — together, twenty-six shillings. The travelling arising from Pilgrimages was a source of income which, although it would at first unavoidably swell the coffers of the Railway Company, would eventually give place to a widely different order of things. The subject was one in which it is not the province of a public Company to interfere, in any way; but there could be little doubt as to the influence which the social changes in contemplation in India would exert over the minds and opinions of all classes. At Gyah alone there are about fifteen thousand Priests supported by donations, of which one Rajah (Bettiah) is next year expected to present Forty Thousand Pounds, and to proceed in pomp to perform his part in the pageant. The Riots in the Gyah jail in September last, when forty out of fifteen hundred prisoners were killed, was one of the many instances indicative of the urgent importance of being able to obtain the prompt services of the troops, which were not rendered available for some days afterwards, although stationed at a distance of only sixty or seventy miles. Recent improvements in the modes of conveyance along the principal roads had reduced the cost to one shilling per mile.

To the officers in the service of the Government, both Civil and Military, the Company are especially indebted, for the ready and anxious disposition uniformly evinced, to furnish all the information, and otherwise to promote the views of the Company, to the fullest extent in their power. It had been deemed expedient to provide the means to a limited number of the most intelligent and respectable natives of India of acquiring the description of information and instruction which they alone required, to render their services available to the fullest extent to the purposes and best interests of the Company — which had received a large number of applications for employment from men of unexceptionable character, born in the country, and possessing a knowledge of the language and business habits — qualifications which were essential for the subordinate assistants.

It was suggested that, as an initiatory step towards the education and instruction of a useful and necessary class of men, one or more of the Railway Company's Engineers should be employed to give a series of lectures upon Civil Engineering, and to impart instruction in Mechanical

Drawing, and in those branches of practical knowledge for the duties hereafter required of them. The instruction would embrace so much of the various sciences as shall be especially applicable to the particular service on which the parties are to be employed, viz., — the Construction of Railways, in all their detail. Models were to be procured from England, and an ample collection of engineering drawings and books would be made for reference. Mr. Measam, the Engineer under whose charge the arrangements had been placed, had already commenced the lectures, and instruction in mechanical drawing, &c., to from twenty to thirty persons, who had eagerly and thankfully embraced the opportunity afforded them. There were several other points to which it might be considered that reference should be made, such as the existing insecure and unsatisfactory tenure of land in Bengal, which would require material modification to induce the investment of British capital. It was evident that the serious attention the East India Company had been directed, as must be admitted from the decided steps already taken by the Court of Directors in the appointment of Mr. Simms and of Mr Williams; as well as in the application which was about to be made, under the direction of Mr. Thornton of the numerous valuable documents which during so many years had been accumulating at the India House.

Stephenson mentioned, in conclusion, that in the application and first introduction of Railways into India, the Government enjoyed the important advantage of being enabled to profit by all the experience of European, as well as American, Plans, Regulations, and Practice; and by avoiding those errors which attended the early operations in other countries, to secure for India the attainment at once of the most perfect and complete system. The contract for construction of Railway into India would be probably most important contract ever entered into between any Government and an association of private individuals incorporated for the prosecution of a Public Object. Accordingly, much care and attention were taken in framing the Form of Agreement, of which a copy was annexed with report.

Correspondence with Court

From Dec. 4, 1845 letter, when Court declined entering into correspondence with regard to the merits of particular projects, down to the month of June 1846, no communication was received by the Railway Company from the Court of Directors. In the meantime, consequent on the undue speculation which had characterized the middle and latter end of the year 1845, it had become extremely difficult to raise a capital for Railway undertaking of such a nature. In the month of June 1846, Mr. Macdonald Stephenson returned to London, after completing the surveys of the whole line from Calcutta to Delhi, and critically examining the practicability and importance of the proposed Line of Railway from Calcutta to the North - West Provinces. The Board of Directors of East India Railway Company in a letter on 5th June 1846, to James C. Melvill announced the return

on 5th June 1846, to James C. Melvill announced the return of their managing director Mr. Stephenson and successful survey of the Line of Railway from Calcutta to Delhi conducted by him. They also informed that arrangements had been made by Mr. Stephenson, in conformity with the original plans of the Company, which would enable them to commence the construction of the Line in October next.

Though the state of the times was not favorable to undertakings of this nature; but the Directors did not see any reason to doubt the means of raising the Capital, even under existing disadvantages, if the Court of Directors was prepared to give the aid required of them. The construction of the first Railway in India as an operation was always dependent on the support and assistance of the East India Company, they pointed out.

Directors of East Indian Railway Company requested Court of Directors of the Honorable East India Company to consider the subject quickly without the loss of a season so that arrangements could be made for sending Mr. Stephenson to India in August next, raising the Capital and completing the preparations necessary to admit of the Line being commenced this year. — *DT. 5TH JUNE 1846 BY MR. D. L. NOAD SECRETARY EAST INDIAN RAILWAY COMPANY TO MR. MELVILL.*

To this letter, the Secretary of the East Indian Railway Company received the reply from the East India company on June 30, 1846 that Court would lose no time in taking the whole subject into consideration, once the Court received from the Government of India a Report of the result of the investigation which, under the Court's instructions, had been instituted with respect to the practicability and best means of providing for Railroad communication in India. Some weeks after the receipt of this letter, the Board of the Railway Company received intimation of the arrival of the official report of Mr. Simms, approved and confirmed by the Government of India, which established the three subjoined propositions on which the future movements of the Railway Company hinged, viz.:

1st. That the Railway system was capable of adaptation to India, with adequate advantage to induce measures towards its immediate introduction.

2nd. That the Line from Calcutta to the North West Provinces was that most important to the interests of India, and that on which the first experiment should be tried.

3rd. That the construction and management of this work should be committed to private enterprise.

In framing these arrangements, it was obvious that the greatest judgment and discretion were necessary, in order that, on the one hand, they might not ask terms of the East India Company which it would be unreasonable on their part to concede; on the other that the Railway Company might not undertake an obligation which they could not fulfil. Before therefore committing the Railway Company to any proposals, the Chairman and Deputy Chairman sought an

interview with the Chairs of the East India House, and had several discussions with them on the subject.

The Chairman of the Railway Company reiterated their views that nothing short of a guaranteed dividend to the Shareholders of 5 per cent, on the capital to be employed in the undertaking would enable the Company to raise the money necessary for it. After a good deal of preliminary deliberation, a paper containing the Company's proposals was drawn up and discussed with the authorities of the East India Company, to the following effect: ---

Terms for execution of line of Railway from Calcutta to Delhi

The Board of Directors of the East Indian Railway Company proposed provisionally to undertake the immediate execution of the Line of Railway from Calcutta to Delhi, on the following terms, subject to ratification by their Shareholders: ---

1. *The East Indian Railway Company to have a charter from the Government of India conferring all the privileges and powers necessary and convenient for a Company of such a nature to have.*

2. *The Honourable East India Company to assist in obtaining an Act of Parliament in this country for the East Indian Railway Company.*

3. *The East Indian Railway Company to arrange the course and details of the Line with the Honourable East India Company's Engineer, or their appointed officer, and to execute it under his superintendence, and to his satisfaction; and the works, in their progress, to be protected by Government.*

4. *The Government to purchase and make over to the East Indian Railway Company all the land necessary to the purposes of the Railway, free from charge.*

5. *The work to be executed in divisions of not less than miles each. The first division to commence at Calcutta, and terminate at or near to.*

6. *When, and so soon as the first and every subsequent division shall have been duly completed, the East Indian Railway Company shall proceed to run trains thereon, under arrangements with the Local Government.*

7. *The Capital of the East Indian Railway Company, as paid up, less the floating balance necessary at the said Company's bankers, to be paid to the Honourable East India Company, or their bankers in London, and at the three Presidencies respectively, and to be drawn out by the Railway Company as required for the works.*

8. *The Honourable East India Company to guarantee, out of the proper funds of the East India Company, a dividend equal to 5l. per cent per annum on the capital, for the time being, paid up.*

9. *All profits derived from working the several Sections to be applied towards the payment of the dividend; and so soon as the Railway produced a profit exceeding five percent. half such excess to be paid to the East India Company, until the sum they might have advanced be repaid, and the remaining half be added to the dividend to the Proprietary, or disposed of as the East Indian Railway Company may see fit.*

10. *On the completion of the first, and every subsequent Section of the Line, the East Indian Railway Company shall,*

within twelve months, proceed to commence the next division of the Line. If they are unable or unwilling to proceed with the contract; in which case, they shall be at liberty to deliver up so much of the Line as shall have been completed with their plant, & c. to the East India Company, who shall either repay them in cash the amount of capital expended or shall issue Bonds for the amount, bearing five percent interest, payable in London.

11. *The East India Company shall have power to inspect the accounts of the East Indian Railway Company, to satisfy themselves of the correctness of the statements on which the claim to interest shall be made up, and also the accounts of the working of the said Company, when the Line shall be opened.*

12. *The East Indian Railway Company to receive an allowance from the East India Company, for the use of the Line when opened; the nature and amount of which to be the subject of arrangement between the East India Company and the East Indian Railway Company, previously to the opening of any portion of the Line, when adequate materials for a determination on these points are obtained.*

13. *The East India Company to have the power of taking over the whole Line, on terms to be agreed upon here after between the East India Company and the East Indian Railway Company.*

Terms and Conditions proposed by the East India Company

These proposals did not, however, receive the approval of the authorities, it was understood that the rate of interest demanded was considered to be excessive, and that the permanency of the guarantee was objected to, and much discussion took place on the subject, in which various modifications were proposed, and the paper altered to meet them. But ultimately, instead of closing any arrangement with the East Indian Railway Company, the Court of Directors, after a lapse of nearly nine months, put forth a paper containing their announcement of the terms they were prepared to offer, as follows:

It was deemed of great importance to connect the seat of the Supreme Government of India with the North-western Provinces. For the eventual accomplishment of this object, the Line for the first Railway in India to be from Calcutta to Delhi, through Mirzapore, provided that, in consequence of more exact surveys, no serious difficulty, arising out of the physical character of the country, be found to exist.

In the present stage of the proceeding, however, which was regarded as only experimental, to test the practicability of Railway Communication in India, two sections of the proposed Line were to be executed; one in the Upper, and one in the Lower Provinces. It was considered that a sum of three million sterling would be sufficient to execute two well selected sections.

The following were the Terms and Conditions upon which assistance to the undertaking was to be afforded by the East India Company, viz.:

That the land be provided by the Government. That the land would remain the property of Government, and that the Railway Company was granted the use of it, on lease, for ninety-nine

years. That the option of purchasing the Railway be secured to Government by a stipulation in the lease, providing for the exercise of such option at the expiration either of twenty - five or of fifty years.

That the terms of such purchase shall be computed at the mean market value of shares of the Railway, during the three years last preceding the said period of twenty- five or fifty years, as the case may be.

That the purchase - money, so computed, may, at the option of Government, either be paid to the Railway Company in one sum, or be commuted into a fixed annuity for the remainder of the lease of ninety- nine years.

That, in addition to the aid afforded by the free grant of land, the East India Company will guarantee as follows, upon the conditions specified:

That interest at the rate of four per cent. Per annum be allowed on sums, which, in the course of three years from the date of the Railway Company signing the first contract with the East India Company, shall be paid into the East India Company's Treasury by the Railway Company, to an extent not exceeding three million sterling.

That the payment of such interest shall commence from the date when the payments into the East India Company's Treasury shall amount to five hundred thousand pounds. That, subject to conditions to be explained, the East India Company's guarantee to pay such interest shall continue in force for a period of fifteen years, unless previously determined under contingencies hereinafter provided for.

That, as one of the conditions above referred to, all profits arising from the working the several portions of the sections as completed, are to be applied towards the payment of the guaranteed interest, and when the profits shall exceed four per cent half such excess is to be paid to the East India Company, and shall continue so to be paid until the sums they may have advanced under such guarantee shall be reimbursed. The remaining half of such excess of profits to be added to the dividend to the proprietary, or disposed of as the Railway Company shall see fit.

That it be a further condition, that if, in the last five years of the period for which the continuance of interest was guaranteed, the Railway should realize a profit during two successive years, equal to the amount guaranteed in respect of those years, the said guarantee shall thenceforth cease and determine.

That such guarantee shall sooner cease and determine in the event of failure by the Railway Company to complete the construction of the sections once commenced, or to maintain them when completed, in both of which cases the works shall be forfeited to the Government of India, the Railway Company alone remaining responsible for the debts incurred.

That in order that the public may have security that the guaranteed interest shall not continue to be paid unless the Railway is duly proceeded with, and is kept in use, it be a condition that, unless the Lines selected shall be opened within a period to be agreed upon between the Government of India, under the advice of their Engineers, and the Company contracting , and unless such Lines, when so opened , continue

to be used by the passage, each way, of at least one train daily, the guarantee must also cease and determine .

That it is to be understood that the guarantee hereby promised will be strictly confined to the experiment now under consideration.

The present arrangement in no respect would supersede the terms communicated to the Government of India in the Legislative Letter of the 7th May, 1845, with the exception only of the question of guarantee.

The requisite surveys, the submission of the plans and estimates to the Government of India, and their full examination and approval of them, the provision of a suitable and approved character of incorporation for the Company undertaking the work, the control of the Government over the construction and management of the Railway, and any other arrangement therein referred to, were to be strictly maintained.

The arrangement between the East India Company and the Railway Company would not come into operation until the payments amounting to five hundred thousand pounds into the East India Company's Treasury, were made by the Railway Company.

Accepting the joint recommendations of the Committee of Engineers and the Government of India, strengthened by the opinion of Lieutenant-Colonel Forbes, of the Bengal Engineers, a man of striking talent and good judgment, they resolved that it was desirable that the first line in India ought to be a long one, and that it was of great and primary importance to connect the seat of the supreme Government with the North-western Provinces, from Calcutta to Delhi, through Mirzapore. --- *THE RAILWAYS OF INDIA BY EDWARD DAVIDSON.*

Court agreed that it would require the more exact surveys of the country to be made, and provided no serious difficulties arose subsequently from the physical character of the country. It having been previously determined that railways in India should be constructed by the joint-stock companies, the conditions of the agreement to be entered into alone remained to be discussed and settled. But it was found very difficult to suit the views of projectors, of the Commissioners for India, and of the Honourable Court; and a great deal of time was spent in fruitless discussion. Throughout the lengthy correspondence, the opinions held by the Directors of the Honourable East India Company were liberal and practical, and are in strong contrast to the obstructive and narrow views taken by the Board of Commissioners. The Court proposed to grant, on a lease for ninety-nine years, the land required by railway companies, but to require that the Government should have the option of purchasing the railways at the mean market value of the shares during the three last years.

Guarantee

As regards the all-important question of guarantee, the Court was of opinion, notwithstanding the expressed views of the members of the Government of India, that the grant of land merely would not be adequate aid to a railway company, and

that no such company would be formed without a guarantee of some dividend, which might, they thought, be given in several ways.

1. *On the amount of funds actually paid into the company's treasury, to be drawn out as required for the actual expenditure of the railways. This would render necessary and proper an efficient control on the part of the Government to see that the actual expenditure was judicious and provident.*
2. *On an estimate of expenditure; in which case the guarantee would be so much per mile of accomplished work.*
3. *On an estimate of the Government use of the railways; which would be a guarantee of a certain income for performing all the requirements of the public service.*

The Court desired that a perfect control be exercised by Government over the plan and construction of railways, and over the management of them when opened for public use, adopted the first method, and the principle of a guarantee. The Court proposed to guarantee four per cent. on all sums paid into their treasury during the next three years, to an extent not exceeding 5,000,000/., or 333 miles of railway at 15,000/. per mile, requiring, however, the following conditions :—

That the Court of Directors should be the sole judges regarding the expediency of extending the guarantee to sums required for extension ; that all profits should be divisible between the Court and railway company ; and that a deposit of one million shall be paid into the treasury of the Honourable Court before the interest guaranteed shall commence.

The above resolutions were not passed and recorded unanimously, for three of the members of the Court expressed a strong dissent; alleging that the state of information regarding railways was too imperfect, and the estimate of cost was evidently too untrustworthy. They felt that should the Court claim and exercise the right to superintend and control the works of a railway company, they would certainly involve themselves in endless disputes and difficulties, and interminable liabilities; but practically, it would be impossible to refuse in the middle of an undertaking to extend their guarantee to the capital needed for the completion of a long line which must be mainly dependent for its revenue upon its through traffic. The opinions of the dissentients did not seem to have had much weight, for the recommendation of the majority of the Court was adopted, and submitted in the shape of a resolution to the Commissioners for the Affairs of India, by whom it received careful consideration.

On the 19th December, 1846, the result of their deliberations was communicated to the Honourable Court. The Board of Control accepted the general principles laid down by the Court, admitting that the early introduction of railways into India was of primary importance, and that for that purpose it would be desirable to employ the agency of a joint-stock company; but they objected, however, to many of the details of the proposed measure. Instead of five million

they limited the extent of the capital to three million, a sum they deemed ample to construct 150 miles of railway at 15,000/. per mile, in two sections, one in the Lower and one in the Upper Provinces of the Bengal Presidency; they also modified the periods of purchase proposed, stipulating that Government should have the right of purchasing the railway at the end of twenty-five or fifty years, considering that Government ought not to be deprived of that advantage because at one time it may not have suited their convenience to avail themselves of the option.

To the very idea of a guarantee, they objected strongly, and concurred with the Government of India in thinking that, land being granted, it ought to be unnecessary. The Board would only consent to such a concession, and that in a modified form, on the understanding that the Court of Directors had satisfied themselves that sufficient capital could not be raised without a guarantee, that it shall be strictly confined to the first experiment, and to it alone, and that under any circumstances it should not extend to a period longer than fifteen years. A deposit of 500,000/ was required, and the full and careful examination and approval by the Government of India of all the designs and operations of the railway company was to be insisted on.

The Delay

The Court of Directors would take two years to draft their first reply to the Railway Company's proposal. The delay of the first one year was perhaps unavoidable. They spoke of a thorough on-the-spot investigation in their dispatch of 7 May 1845 and this was essential under the circumstances as this kind of investigation, which involved a considerable amount of outdoor work, could be undertaken by the Europeans in India only during the cold season, i.e., from the end of September to early March. By November 1845, Simms' views were known in London and the report of the railway commission, sent along with the Government of India's dispatch dated 9 May 1846, must have arrived there by July 1846, if not earlier. In spite of this, it was not until December 1846 that the Court of Directors submitted to the Board of Control, for their approval, the terms and conditions on which the agreements with the prospective railway companies in India should be made. A greater promptitude on the part of the Court of Directors in deciding these terms and conditions, might have enabled them to avoid the delay at least at this stage of the negotiations. The controversy, that went on from December 1846 to September 1847 between the Court of Directors and the Board of Control over the terms that should be forwarded to the railway companies, would cause further delay. Court was anxious to grant more liberal concessions to the railway companies than the Board was prepared to accept. The struggle could be interpreted to some extent as the result of the dualism which characterised the entire administrative set-up for India during this period.

Authority was divided, in the first instance, between the

home government and the local government in India and more injurious than this, at home, again, between the Court of Directors of the East India Company, enjoying the prerogative of patronage and the right of initiation, and the Board of Control, representing the Crown's Government and possessing great powers of supervision and control over the former under Pitt's Act of 1784.

Curzon spoke of the "Homeric contests between the Court of Directors and the Government as represented by the Board of Control" in England for nearly three-quarters of a century in the present context, this was partly the case, if not wholly. The Board's opposition to granting liberal terms to the railway companies operating in India was in tune with the general pessimism that persisted in England about the prospects of railways in India. But, still, since the Court was prepared to grant them, though they were also initially not very optimistic about the possibilities of such projects and since these were agreed to, after two years' deliberations on the subject, during which period a thorough investigation of the question was made in India, the Board's opposition does not seem to be fully justified.

Apart from delay, the lack of sympathy on the part of the official authorities in London in considering these original proposals for railways in India might be another point of criticism here. In dealing with the financial handicaps of the E.I.Rly. Co. during the commercial crisis in England from 1847 onward, the Court of Directors, obviously with the approval and under the direction of the Board of Control, acted in a most unsympathetic manner and thereby they proved themselves rather indifferent to the whole cause of the railways in India.

When the report came before the Supreme Council, three of its members, Sir Herbert Maddock, Mr. Millett, and Mr. Cameron, proposed to limit the aid of the State to the free gift of the land; but Lord Hardinge, then at the head of the Government, who set a higher value on the undertaking than his colleagues, recorded it as his opinion, that while it was the greatest boon we could confer on India, it would be preposterous to suppose that the simple grant of the land, the value of which, at the rate of 200/ a mile, would not exceed 200,000/, would be sufficient to attract fifteen millions of British capital to India; and he proposed to add to it a subsidy of 1000/ a mile.

The report was transmitted with these minutes to the India House, but the Court of Directors, better acquainted with the pulse of the stock-market than the Council in Calcutta, felt that it would be absurd to introduce such a project to public notice with nothing beyond this contemptible bounty, and they proposed at once to grant, in addition to the land, a guarantee of four per cent. on five million. -- *THE QUARTERLY REVIEW, VOL 125, OCTOBER 1868*

The Preferred Railway

The partiality of India House for East Indian Railway

Company would invite sharp criticism, it would be said that whilst "Companee Jehan", like many an eastern potentate, appeared to the world to doubt to which to throw the handkerchief, and yet in his heart — if a company had such a thing — already biased in favour of the gigantic beauty.

By the same mail that took out Mr. Simms, on behalf of the India House, went out also Mr. Stephenson, on behalf of the Railway Company, with a staff of three subordinates; and strange to say, one began to survey precisely the same line as the other had before surveyed, and now began to re-survey.

Many a communication passed between them, and ever and anon the unofficial Stephenson sought wisdom from the official Simms. It would be alleged that Mr. Simms' report to the India House, and Mr. Stephenson's fresh report to his masters, disagreed just sufficiently to prove to some that two independent trains of thought and courses of action had arrived at the same conclusion. The importance, the almost absolute necessity, and the practicability of the direct political line were equally the theme of both reports, making East Indian Railway the preferred child of India house. The year would also witness sudden down turn in money market and shares of Railway Company. In November, 1845, soon after the monopoly, of India was claimed by the East India Railway Company, their shares bore a premium of three pounds on the five shillings, before that year had closed the premium had fallen to fifteen shillings, and before the end of 1846 to five shillings, with all sellers and no buyers. The shares of rival railway lines would fare worse and their prices would crash.

The public fed up with Railway mania and speculation bordering to madness began to cry out for amalgamation. East Indian Railway Company would use this opportunity to consolidate their position by allying and amalgamating with rival lines, to gain a monopolistic control over railway rights between Calcutta and Delhi. -- *SIMMOND'S COLONIAL MAGAZINE 1849.*



Shri Prashant Kumar Mishra, presently the Additional General Manager of South Western Railway is a distinguished member of the Indian Railway Service of Mechanical Engineers. In addition to his technical acumen, Shri Mishra is an ardent rail enthusiast, historian and researcher. While working as the Divisional Railway Manager in the Asansol Division of Eastern Railway, Shri Mishra has restored several heritage buildings and structures in the Division, including the famous Durand Railway Institute (built 1878), now renamed Vivekananda Institute. As AGM of SWR, Shri Mishra led the Heritage team of the railway to create a Museum at Hubballi, apart from improving the Rail Museum at Mysore. He has assisted many non-railway organisations to restore various heritage artifacts including the famous 130 year old clock of the main tower of the Karnataka University at Dharwad. One of the foremost Railway historians of India, Shri Mishra has put on paper several unknown facts of yesteryears through his invaluable books and articles on the Indian Railways.



A Final Ode to the Non-AC Metro of Kolkata

Anamitra Bose

On the morning of 15th August 2021, when we were all busy celebrating the 75th Independence Day, a small message tinkled in which transported us to our childhood days and our minds were suddenly overwhelmed with fond memories. Now what was the message all about? It was about pulling the plug on the Non-AC metro services in Kolkata where the first underground Metro ran in the country. Not only as rail enthusiasts but also as being citizens of Kolkata, we could not just afford to let them silently go into oblivion without the rumbling of their wheels, without the traction motors making their signature sounds, without the announcements about the next station – for one last time. The rakes that tirelessly served the City of Joy for decades deserved a fitting farewell.

The fate of the Non-AC metro rakes may not have been completely sealed and they would have continued serving for another couple of years, courtesy the refurbishment done in Texmaco, had the pandemic interregnum not happened, coupled with the rapid supply and commissioning of brand new Medha rakes which brought the wheels of Non-AC rakes to a complete halt forever.

We, as lovers of railway and being ardent Metro users,

decided to persuade Metro Rail to arrange a proper farewell to these heroes who had been an icon of Kolkata. We, from Team TrainTrackers initiated the campaign in order to make the mission a success through online platforms. We got an able partner in Metro Rail Blog (MRB) for this initiative. MRB is a team that is dedicated for making blogs on Metro Railways nationwide and working towards their betterment who turned out to be the perfect ally. TrainTrackers and MRB joined hands in this journey which started from the planning phase to culminate on the D-Day.

About Plans and their Execution

The tale of triple barriers – The first-phase of the whole event commenced with regular meetings with Metro officials at the Metro Rail Bhawan, Park Street. The officials were quite impressed and delighted with the proposed event outlines along with the initial planning. Although they readily gave a go-ahead to our event, uncertainty loomed large over multiple aspects like finance, manpower and time.

On the financial front, Metro Railway promised reimbursement in lieu of a successful event which looked more like a stopgap arrangement as all the planned

decorations for the event required substantial funding which was impossible to bear for any of us without the active involvement of Metro Railway itself. So, Metro had to step in with the funding to set the ball rolling.

The time constraint was another critical issue. The date of the farewell event was unanimously decided as 24th of October 2021. This day was chosen as it happened to be the birthday of Kolkata Metro as well. On that day in 1984, Kolkata Metro was officially dedicated to the nation and India was finally on the World Metro or Tube Railway Map. The designated date of the event also happened to be a Sunday, implying lesser office engagements and more participation from people in the celebrations. We hit the floor with less than a month to go. With each meeting at Park Street, the scheduled date came closer as we geared up for the next phase.

The third issue that plagued us was manpower. With only the core-members of TrainTrackers and MRB at disposal for the job, it was a herculean task to get things in order within the stipulated time. We realized that without an adequate head count, it would not be feasible to execute the plans to perfection. Thus, we sought participation from fellow ferroequinologists who would take on the onus and wholeheartedly volunteer for the entire event which included decorations and exhibition. Many came forward and took up the responsibility for making the event a success.

Meet the protagonists – Arkopal Sarkar, Anamitra Bose, Sagnik Gupta, Shourya Basu from TrainTrackers and Adri Roy Chowdhury from Metro Rail Blog. Ferroequinologists without whom this mission would not have seen the light of the day included Sourosankha Maji, Meerjit Majumder and Soumyajyoti Dey. Two lady volunteers, not exactly railfans but with a keen interest to be a part of the event, namely Sohini Chakraborty and Doel Rajbanshi, also gave their best to make the event a success. Without this alliance of two societies of railfans along with the presence of these ferroequinologists and volunteers, executing our grandiose plan to perfection was next to impossible.

Knitting the Past, Present & Future on a Single String –

We first put forward the plan of segregating a whole Non-AC rake into three parts representing three periods of time – past, present and future. The 'past section' would demonstrate the ambience of a museum with old photographs, rare documents and many types of machinery used in the bygone years of Metro. This was supposed to be the most nostalgic and exciting part of the exhibition. The 'present section' portrayed the existing system which included air-conditioned rakes, the existing signalling system along with the two operational Metro routes: the North-South and the East-West. The 'future section' delved on the upcoming routes, stations and rakes of the under-construction lines and an artist's impression on the future rakes of Kolkata Metro. To give the visitors a feel of the initial days of the service, we wanted the Passenger Announcement

System dating back from the 80's to play 'Bhawanipur' station (instead of the present Netaji Bhawan) reminding of the then operational Bhawanipur-Esplanade stretch.

For all these to be properly implemented, a Non-AC rake was a desideratum. Our visit to the Noapara Carshed revealed that only two refurbished rakes were still fit for mainline services bearing numbers as 12/14N and 16/18N. Here N stands for its electrical equipment which were from NGEF, Bangalore. Decorating a BHEL made rake was indeed the motto but an intact BHEL coach, let alone a rake, was hard to find. So, we had to do away with that idea and proceeded with a refurbished NGEF Non-AC rake only.

The Rake and the Designs thereof

After a few days, our ground visits to the Noapara Carshed began for surveying and checking metrics of the rake. We were promised to give a fit Non-AC rake to exhibit our decors, but unfortunately neither rake was in a state to run. Nevertheless, the 16/18N rake was in a relatively better condition as it had completed the trial run of Dakshineswar-Noapara stretch a few months back. But to our utter dismay, an unanticipated problem arose out of nowhere. We were told that the 16/18N rake was branded with advertisement and the contract period for the branding was still on. Metro Railways was already embroiled in a dispute with the branding agency and the vendor whose advertisement was on display was no longer in passenger service and the principal aim of branding was defeated. Furthermore, if that rake was to be decorated and the advertisements got covered with banners and posters, Metro Railway would have further landed themselves in a worse legal dispute. To find a way out, the Metro authorities agreed to handover the rake with one condition that the external advertisements would not be covered with posters implying no external decorations. That precondition pushed our plans to the brink of consternation. In no way, we could have agreed to the proposal and went on insisting to decorate the entire rake. After repeated meetings and deliberations, Metro

NGEF Rake 8N 12/14 selected for the event

Photo courtesy - Arkopal Sarkar



authorities came up with a solution. The 12/14N rake would be made fit for one final run by the Noapara Carshed and we would be able to decorate the rake as per our initial planning. An achievement of sorts from our end indeed!

The next few meets at Park Street and Noapara Carshed involved a detailed survey of the allotted rake which included getting a measure of the metrics of each of the door panels and the ad panels in between the doors and windows. The latter had advertisements pasted when the rake was in regular service. Those spaces proved to be a very good site to display the posters. The exteriors of the Metro rake were also going to exhibit banners depicting the various phases of the journey of Metro accentuated with some moments worth cherishing. Every dimension was quantified and noted to make the implementation process a seamless one. To go ahead with the selection of photos, our team was provided with some archival materials from Metro itself which included some rare and not-so-seen pictures exactly meant for depicting 'the past'. For 'the present' phase, the team urged railway enthusiasts to contribute photos from their collection to make the exhibition more colourful. Immense response was received from many railfans who submitted their creations. Now for 'the future' part, Metro again shared some worth-displaying photos.

Apart from the photos provided by the authorities, had our recommendation on the display of old machineries and systems materialised, they would have added to the grandeur of the show. In fact, it could have guided the visiting guests through the rich technical history of Metro and how much technology has changed over time. But unfortunately, this plan was dropped by the officials for reasons best known to them.

Nevertheless, the pictures for banners and posters were edited and designed with a smart layout for a presentable poster. Sagnik Gupta needs special mention for his efforts to bring the photos to a portrait form and give them a poster look. In the next meet, a sample poster was printed and taken to Metro Rail Bhawan to get the nod from the

Sample Testing on-going

Photo courtesy: Adri Roy Chowdhury



authorities. But that didn't get the approval from the men who mattered. A touch of Indian tradition in the posters was what they wanted. Also, the idea of pasting posters on window panes was discarded by the authorities. As per their instructions, all the posters would be on the doors & advertisement panels while the banners would be on the exteriors.

The posters were again made from scratch with a motif layout. Again, the pictures were re-edited to meet the present requirement. This time the design got approved and then our task was to decide the quality of printing. It was decided upon pasting a sample poster on a door panel at the rake itself at ground zero.

The Days of Implementation

Day 1, 20th October – It is the date from when the ground work and official decoration work started. All the core members along with volunteers like me started to assemble. By 4 in the afternoon, almost all of us had arrived in the Noapara Carshed. The rake was placed in the shed pit-line which was in absolute darkness. We were told that we would get the rake ready by the afternoon of 20th but still the rake was in a charging state.

The rake was given a fresh coat of paint in the workshop especially for the event. The paint scheme was in the refurbished scheme as done by TEXMACO during the refurbishment of these NGEF rakes. We earnestly wanted that the original yellow ochre-brown livery or the olive green-yellow livery to be implemented on the rake to give it a classic look. Metro Railway authority wanted to give farewell to the last Non-AC rake and not the first one. That's why this colour scheme was chosen.

The paint job though was quite good, and the PU paint looked quite glossy on the oldie. We were ready with our initial bunch of posters and chart papers to start work, but we were in the dark with regards to analysis and planning of decors to be used for inside portion of the rake.

Getting a fresh Paint-job...

Photo courtesy: Adri Roy Chowdhury





Sparkling after a fresh paint-job...one last time.

Photo courtesy - Sagnik Gupta

After 2 hours, finally, the rake got charged and some lights and fans were switched on. The poster sheets and chart papers were unfolded. The plan as instructed by the officials was to paste the black chart paper matching the dimensions of the door window panes. The reason behind this shown was to restrict the lights coming through the transparent door glasses behind the posters. A better plan would have been to paint the windows temporarily with black paint, but it was again not accepted by the powers that be.

The plan was to apply adhesive behind the chart papers and apply on the door glasses, upon which the self-adhesive posters would be pasted. But gradually it was found out that the adhesive was inadequate, and the chart papers tumbled down due to their weight which the adhesives couldn't sustain. To get over this pitfall, it was unanimously decided to apply double-sided adhesive tapes to the chart papers. With modifications suggested every second minute from the officials compounded by the lack of available stationeries from office, the day ended without any substantial progress. We looked forward to making up for the delay in the following day.

Day 2, 21st October – The Team met a little late in the afternoon that day. This time again, the rake was not ready to start work straightaway. Thus, any chances of making up for the lost time vanished in thin air. The authorities seemed to be unperturbed for the delay from their end. With nothing much to do, we spent time in plotting the job at hand while exploring the fairly large Noapara Carshed. After losing a few hours, the rake was finally charged up and ready to work on, but we were again made to wait for the cleaning task. A classic instance of mismanagement and laid-back attitude on the part of the concerned authorities, never mind the frustration we went through, not only for our time being wasted but also for losing precious hours for the plans to get executed properly. When the cleaning was completed on the first two coaches, we decided to start the work immediately without wasting any more time with whatever resources we had. Sagnik, Arkopal, Sohini, Doel and myself started the



Lady power at work

Photo courtesy - Sagnik Gupta

work of cutting the chart papers and pasting them with double sided tapes on each of the doors. After pasting the paper, the sides had to be stripped off so that the papers do not get damaged during opening or closing of doors.

Work was going on at brisk pace. The cleaning was nearly getting over and we started working on the respective coaches till all the doors were getting covered with chart papers. But another misfortune hit us as all work totally came to a grinding halt. Without any announcement or warning, the doors of one side of the rake were thrown open from the cab. One of our team members, Sourosankha Maji, who was working on a middle trailer coach, got injured. His hands were initially stuck between the doors and the car body. Instant swelling of his fingers followed. A painful and shameful incident for all of us and another testimony of the callousness of the authorities. Although some first aid was offered, this event was an eye opener about the hazard and safety issues that one could face due to the insensible approach of the authorities. The team's safety was now at stake. Despite this pitiful incident, we had to request the authorities not to repeat the same blunder. This pointed out the treatment which were dished out to the team. Later in the evening, another bunch of poster sheets arrived for advertisement panels. Sorting them and trimming some of them as per required dimensions saw the end of an eventful second day.

Day 3, 22nd October – This was the most significant day of the entire period. We all decided to arrive late at the Carshed as some of our core members were supposed to be there through the night at Noapara to expedite things. As soon as most of us had gathered, we decided to form small teams to execute the different aspects and facets of our planned work. A team restarted the work of pruning the posters in proper dimensions while another was working on the chart papers inside the rake. Work was on in full swing and we were making the posters ready for pasting. Throughout the entire exercise, there was mixed response from the ground staff of Metro. Some of them were very enthusiastic about the event



Work in full swing

Photo courtesy - Sagnik Gupta

and helped us in many ways but there was a flip side to the story as well. Some behaved in ways which ought not to be remembered and gave us a clear message that decorating the rake posed to be an additional burden to them after discharging their regular duties and responsibilities. Some others held the opinion of disruption in normal operations of the Carshed due to our proposed event. Nonetheless, we carried on with our work. For the work inside the rake, everything was done on the floor itself. The table works were intervened by shunting operations of a few-decades old battery shunter which still had single-beam headlamp with old-school horns.

By evening, the cutting work got almost completed and now our whole team moved to the rake to start the pasting process. Another impediment was waiting for us to stall our progress. It was the chart papers again! The chart papers got pulled out and toppled over due to inferior quality of adhesives in tapes and repeated open/closing of the doors. Now we were becoming sceptical about lasting of the posters in their places till the date of exhibition. The pasting of posters began on the panels at first. The self-adhesive posters were taking quite a time to stick properly as the air

Poster pasting on ad panels

Photo courtesy - Sagnik Gupta



A Task in Hand...

Photo courtesy - Sagnik Gupta

bubbles needed to be filtered out. Covering half a coach took about an hour. We realised that at this pace we would not be able to finish covering the entire rake till Sunday afternoon! At that crunch moment of racing against time, a generous Metro Railway staff salvaged our day. He asked us to fetch a bucket of water. He then mixed some washing powder in it. Next, with the help of a dry cloth he applied the soap-water to the adhesive face of the poster and pasted it on the panel. It took less than 30 seconds to set the poster properly. That moment became the turning point in the day's work. We were thankful to him as poster mounting was no longer a matter of concern. Time flew away and it was time for the last service to arrive. Certain team members comprising of Arkopal Sarkar, Sagnik Gupta, Shourya Basu and Ananda Bhowmick decided to spend the night at the Carshed with necessary approval from the authorities who instructed them to take precautions like wearing covered shoe and keeping a bottle of Carbolic acid for obvious reasons.

Post dinner, when they were about to resume work again, lights and fans of the rake got switched off suddenly and work got halted mid-way. Communicating with the staff led them to the conclusion that there was a power block in the section and it was taken without any prior announcement or warning. The night at Noapara started becoming a nightmare as there were no fans throughout the entire shed premises and none of the rakes had power to give us relief us from the sweltering heat. Exhausted and tired under sultry weather conditions, some tried to take a nod-off in the middle of all the fiasco.

Day 4, 23rd October – At around 3 AM, the power block was lifted, and the rake was brought back to power. But by that time, we were lagging far behind and completing the task by next day noon seemed highly improbable. Nevertheless, Sagnik, Arkopal and Shourya rose to the occasion and started working tirelessly to even things up and completed the panel postering throughout the length of the rake. Meanwhile, dawn broke and after a few hours, the day's first metro departed the Carshed for Dakshineshwar – but none had the time and mood to spare a moment.

Meanwhile, it was decided to discard the idea of chart papers on the doors as they were posing to be threats to the posters. The direct application of posters looked quite promising and the authorities agreed to the proposal this time. By eight in the morning, Sohini and myself re-joined the tiring but enthusiastic team to expedite things. We set small goals to achieve for each coach and deterring all exhaustion, we completed pasting the posters for half the rake. Soon, news spread that the CPRO and other officials would be visiting, and the rake needed to be handed over by 12 PM, instead of 4 PM. Such type of sudden advancement in schedule left us in a precarious position with a sea of work still left to be done.

Being subjugated to another unprecedented challenge, we motivated ourselves with the mantra – 'When the going gets tough the tough gets going...'. We reasserted ourselves and completed the rake interiors by 11 AM, an hour before schedule. Now the exterior posters and banners were left to be cut and pasted on the body. In the meantime, some officials arrived to inspect the status of decoration and surprisingly expressed their dissatisfaction over pasting the posters directly without using the chart papers – another moment of self-contradiction from the Metro officials. They were not convinced with our clarification about the chart papers getting peeled off. The dissent showed by the officials did hurt our passion which was the driving force in executing the project successfully. Instead of some words of encouragement for all the hard work we had put in, the treatment meted out was not only unfortunate but also extremely demotivating. Despite these awkward developments, we couldn't afford to shift our focus. A part of our team continued to work on the banners meant for the exteriors while another wing carried on with the pending decoration work of inside the rake. After resolute and sustained efforts, the rake was ready, well almost, as the Metro railway staff started decorating three doors with garlands – the two terminal doors on either ends of the rake and the middle one. Also, the either ends of the rake were

And the interior looks perfect



Photo courtesy - Anamitra Bose



Floral decor on both ends

Photo courtesy - Anamitra Bose

beautified with artificial flowers. Later that night, the rake was transported to Tollygunge (Mahanayak Uttam Kumar) for the event on the following day.

The drama didn't end there as the toughest of challenges are sometimes thrown from the most unexpected corners. Although the officials were delighted with the progress of work and the posters of doors, a few unprecedented questions were raised which spoiled the ambience of the work further by a few notches. Most importantly, the presence of the Metro Rail Blog and TrainTrackers logos in the back of the T-shirt inaugurated for the special event was questioned. Secondly, the credentials and merit of the two female volunteers and their contribution in the entire process was quizzed. Thirdly, some team members were summoned and probed in stern words about posting of some small clippings of the ongoing preparations on the social media platforms which sounded more like a warning. Now all these questions had answers embedded in them. The Metro Rail authorities were in no mood to acknowledge the unconditional and honest efforts put in by the two railway enthusiastic societies and our observation turned out to be true as none of the officials bothered to pronounce the chief protagonists' name and their contribution to the event on the D-Day. Coming to the second question, it was surprising to find the upsurge of medieval barbarism over literacy and culture among erudite minds in this age of women empowerment and emancipation which was totally uncalled for. The third answer had its roots in the first one. Had Metro authorities wanted the upcoming event to reach far and across, then they would have surely exploited all avenues to do so including utilising the fan base of the two groups involved in the process. But the plan of flashing the names of the proponents wasn't on their cards and quite naturally the clippings posted exclusively as a build-up to the gala event didn't find favours with the authorities who labelled and ridiculed our dedication, passion and efforts as "over-enthusiastic". It was indeed "over-enthusiasm" that kept us motivated despite of those turn of events which involved

injury to one of the members, it was indeed "over-enthusiasm" that drove the team members to relentlessly work for 20 hours under insalubrious ambience without the aim of achieving any personal gain.

The D-Day

24th October – finally the day had arrived. Volunteers in event T-shirts guided the visitors through the exhibition and decorations. The exhibition commenced with chants from the shlokas of Gita followed by sitar recital. Then, the Assistant General Manager (AGM) addressed the guests and visitors present which was followed by a series of events that included sharing of experience by the first Motormen of the Kolkata Metro – Sri Sanjay Shil and Sri Tapan Nath. Sri Nath and Sri Shil enthralled and captivated us with the stories of the first day of Metro. Various officials also presented their views in the event followed by some eminent passengers. Towards the last leg of the event, the officials felicitated our members with mementos for our contribution to the event which turned out to be a huge success. A magnificent miniature of a BHEL rake made by Kanishka Rava, a Metro Rail Blog member was put on exhibition as well. A video on the journey of the Kolkata Metro Railway since the last 37 years, exclusively made and edited by Adri Roy Chowdhury, was also played on the occasion but without any proper credits to the maker.

Looking back at the inappropriate circumstances presented by the Metro authorities to our team not only echoed their malapropos mindset but also divulged the sanctimonious approach of the Metro authorities towards executing the event. Presenting the team with some mementos doesn't coverup the apathetic attitude of the authorities which included changing of plans every now and then, indulging in lackadaisical negligence and sheer reluctance to recognise the efforts of the teams. Instead, presenting the team with a more workable ambience would have manifested the professional and pragmatic approach of the Metro authorities which was much more desirable. Hitherto we never had such

The Team with Sri Sanjay Shil & Sri Tapan Nath

Photo courtesy - Sagnik Gupta



Photo courtesy - Anamitra Bose

annoying experience as Team TrainTrackers were the ones who took part in decorating two locomotives at the Howrah Electric Locomotive Shed (ELS) to commemorate 50 years of service of Howrah Rajdhani, then naming and decorating the 150th Locomotive of Howrah ELS (*Aswamedh*), also decorating EMUs for Eastern Railway in back to back years for celebrating the operation of the first ever passenger train in eastern India on Independence Day and again decorating an EMU of Eastern Railway to observe the National Unity Day on 31st October. Thus, it was very inappropriate on the part of Metro Railway to treat ferroequinologists as a non-existing entity after having enjoyed all the unconditional services from them.

Meanwhile, as the clock struck 17:30, the most fascinating moment arrived. It was time for the ride in the vintage rake. We got into the train with high hopes of listening to the vintage announcement, as we had recommended the authorities earlier. But unfortunately, there was no announcement at all. Post Esplanade though, the Passenger Announcement System suddenly came alive but not with the one from the initial days' we had requested for. However, the doors then thudded and closed. After about 10 minutes or so, the General Manager waved the green flag and Kolkata's last Non-AC metro set off from Tollygunge for one last time! We didn't know as to when we had got enraptured in nostalgia with an air of melancholy enveloping us. The NGEF traction motors growled for one last time as its sound reverberated through the tunnel. The train halted at every station enroute with doors only opening at Park Street for the officials to deboard.

This ride was a ride back to our childhood, this ride was all about revisiting the pages of history, this ride represented the first metro ride of the nation. When the rake finally reached Noapara Carshed again after all these colourful and joyous moments, a grief of gloomy silence gripped the evening. The colours were still alive, but the moments had gone forever. As the excitement died down, we gradually headed back after bidding a final goodbye to the soldier whose retirement was aptly celebrated for the services rendered. The modern AC rakes may be the torchbearers of evolution with a host of features on offer but the Non-AC rakes, which symbolised the first ever Metro of the nation, will always be missed in the crowd of progress. As the memories of the event keeps coming back, the aura of nostalgia refuses to get over....



BNR HERITAGE WALK

Rudranil Roy Chowdhury

South Eastern Railway, a zone personified with rich heritage and culture organised a “Heritage Walk” on the 27th November, 2021 at its Headquarters Campus, Garden Reach along with participants from the Rail Enthusiasts’ Society and INTACH. The event came close on the heels of the nationwide celebrations of Heritage Week. The event commenced at 11 AM with assembling of the participants at the New Administrative Building who were given a warm welcome by the Deputy General Manager of SER Mr. Ritwik Sharma who is also the Secretary of Heritage Committee of SER. The participants were then guided to the sixth floor Conference Room where registration formalities were done along with refreshments. The event was presided over by Sri Atulya Sinha – the Additional General Manager and Chairman of Heritage Committee of SER.



An informative clip on the colourful history and heritage of the erstwhile BNR was played to start things off. In 1863, Sir Richard Temple, the then Chief Commissioner of Central Provinces had emphasised the need for constructing a light railway network from Nagpur to Rajnandgaon for facilitating transportation of food grain. The proposal was sanctioned in 1878 and the Chhattisgarh State Railway, a metre-gauge network covering a distance of 233 Km was commissioned in 1882. But the need of an extensive railway network encompassing a larger area was soon felt thereby making way for a plan to connect Nagpur with Calcutta via Asansol in 1884. On 23rd February 1887, BNR was registered as a company with registered office at Gresham House, 132, Old Broad Street, London. T R Wynne was appointed the Chief Engineer and Robert Miller the Chairman. In March 1887, BNR entered into an agreement with the then Secretary of State, Government of India to take over the Chhattisgarh State Railway and convert the 233 Km long Nagpur-Rajnandgaon stretch into a broad gauge (BG) network along

with laying of 770 Km of new BG network from Rajnandgaon to connect the East Indian Railway (EIR) network at Asansol. Another project of laying 260 Km broad gauge line to connect Bilaspur with Katni-Umaria Railway at Umaria was also undertaken. BNR was formally inaugurated on 3rd March 1891, by the then Viceroy Lord Lansdowne. The Cuttack-Vijaywada section, constructed by Madras Railway, was merged with BNR following a historic agreement on July 23, 1902. And by 1905, within eighteen years of its formation BNR completed laying 3164 Km of railway track. BNR had a workshop in Nagpur but with the network spreading rapidly, the need for a bigger workshop was felt. Thus, the first integrated workshop of Indian Railways was started in Kharagpur in 1904 under BNR.

That short and intriguing session full of historical facts was further enriched with the presence of Shahanshah Mirza, the great-great grandson of Nawab Wajid Ali Shah – the last ruler



of Awadh. He busted various myths and misconceptions about his predecessor which enlightened all. Following the session, all participants were taken to the rooftop for an aerial view of the entire BNR colony along with the magnificent and iconic red structure - the BNR Headquarter. The majestic red brick edifice with domes of Indo Saracenic architecture overlooking the Hooghly was quite a sight. This was our next destination but not before a sneak peek into the famous narrow-gauge steam loco RD-690, a 1929 built 2-8-2 Nasmyth Wilson, which used to roar the tracks of Raipur-Dhamtari section, now plinthed at the entrance just opposite to the HQ building.

As the participants moved to the BNR Headquarters spanning over 53,000 sq. ft., they were suddenly time travelling back to the era of the British Raj. The construction of the building started in April 1906 and was completed by May 1907 which once again speak volumes about the British engineering efficacy. Several things have been left unchanged for over 100 years, including the cast iron-Burma teak staircase to the glass door that leads to the General Manager's cabin. The Heritage Room in first floor offered a



gallery of wide range of old railway artifacts and relics which are of great historical importance. The long list includes clocks, furniture, cutleries, block instruments, their tokens, token pickup devices, quadrant signalling devices, weighing machines, telephones, transmitters, lamps, lanterns, metal wash basin and even a beautiful hand pump tube well also.



But the showstopper was a 119-year-old Schiedmayer piano.



From there, the participants moved onto the adjacent garden – site of the erstwhile 978 Balloon Squadron of Royal Air Force. They averted an eminent threat of Japanese bombing by flying giant balloons to evade bomber jets.



Next stop was another magnificent architecture built in 1909, now known as Block No GFM1 with century old interiors. BNR offers some fascinating stories of colonial



Next stop was another magnificent architecture built in 1909, now known as Block No GFM1 with century old interiors. BNR offers some engrossing stories of colonial history nestled in every nook and corner of its area with a wide spectrum of both tangible and intangible heritage. Be it the beautiful wooden staircases or the architecture of the imposing buildings one can feel the aura of a fascinating railway legacy.

The next supposed stop was the famous BNR house – the residence of the General Manager of SER. It is a white two-storied overlooking the river Hooghly built in 1846, whose architecture was inspired by the Tower of the Winds in Athens. It is a smaller replica of the Metcalfe Hall at Strand Road, Kolkata. Also known as Bungalow No. 11 and once homed Sir Lawrence Peel, Chief Justice of Supreme Court which was in Calcutta at that time. It is indeed a spectacular building with 28 columns, 36 feet in height, an ornamental pedestal, with spacious drawing rooms on the ground floor and bedchambers on the first. A central staircase rises to the upper floor. The high ceilings and tall doors had been specifically designed to let the river breeze to soothe the



interiors. The house even had its own ghat or landing stage, offering the residents the option of road or river transport. There were four wide verandas on all sides which was



another Indian improvisation on classical architecture, to tackle the humid climate.

After Sir Lawrence Peel retired in 1855, Chand Mehtab Bahadur, the Raja of Burdwan became the owner of this place which was rented out to the Nawab of Lucknow Wajid Ali Shah who was looking for a decent residence in the city in May 1856. It was eventually sold to the Nawab who renamed it as Sultan Khana. He made several alterations of the building, including converting a room into an Imambara. Bengal Nagpur Railway purchased the house after the Nawab's demise and named it as BNR House where Sir T R Wynne, the first agent of BNR resided from 1897 to 1902. From 1952, the building was converted to Railways' Central Hospital. An expansion of the hospital was planned where 8 southern columns of the house were demolished to create space and 4 pillars were later added. But finally, the magnificent building was restored to its past glory, somewhat, in 1958 when it was reconverted as the official residence of the GM-SER. However, entry was restricted inside its premises for visitors.

Next stop was an 1880 built Ball Signal Post which is only one of its kind still standing in the entire country, painstakingly restored to its former self in 2005. We have seen a smaller replica inside the Heritage Room. When the ball – used to be red in colour, is outside the box it's a no go



for trains towards the Paltoon Jetty and as the ball goes inside its receptacle it's supposed to be a green signal for trains.



From there the participants moved towards the penultimate destination – Bungalow No. 13 which is nearly 250-year-old structure which housed Sir William Jones – the founder of Asiatic Society until his death on 27th April 1794. Last but not least, the participants were treated to some marshal art skills by the Lady Commando Unit of RPF at the BNR Officers' Club by the river. It was a riveting exercise to say the least!



Overall, it was an excellent tour down the heritage path and all are deeply grateful to the SER officials including Sri Atulya Sinha (AGM), Sri Ritwik Sharma (DGM) and Sri Niraj Kumar (CPRO) for their warm gesture and hospitality. Sri Atulya Sinha was played a true host for the entire event as his penchant for preservation of artifacts of historical value got reflected through his briefings about the rich heritage of different railway installations at the SER Headquarters. The principal objective of organizing the Heritage Walk to create awareness about preservation of the rich heritage of South Eastern Railway was truly fulfilled.



The Launch of A Novel on A Starry Evening

a report by Somsubhra Das

Howrah Junction – the novel by Shri Sanjoy Mookerjee was launched on a winter evening of 17th December 2021 at Kolkata through a grand ceremony on hybrid mode at the Sagar Manthan Auditorium of Eastern Railway Officers' Club, Sealdah.



Sri Sanjoy Mookerjee

The star-studded evening was lit up with the august presence of Dr. Bibek Debroy, Author, Rail Enthusiast, Chairman of PM's Economic Advisory Council and Member of Niti Aayog who was the Guest-in-Chief. The occasion was graced by Sir Mark Tully, Author and former BBC correspondent, over video session from New Delhi. Shri Arun Arora, General Manager, Eastern Railway presided over the function while Shri Samar Jha, Chairman of Webel Technology Limited initiated the proceedings with the audience paying solemn respects to those who had sadly left us due to the pandemic.



(From the left) Shri Sanjoy Mookerjee, Shri Arun Arora, Dr. Bibek Debroy, Dr. Sudakshina Kundu Mookerjee & Shri Samar Jha



Remembering through silence



August presence of other Dignitaries

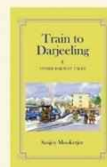
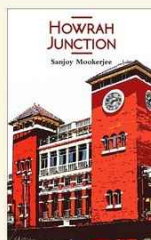


Video conference with Mr. Mark Tully

The dignitaries present in the event included Shri Atulya Sinha, Addl. General Manager, South Eastern Railway, the Divisional Railway Managers of both Howrah and Sealdah Divisions of Eastern Railway along with Justice [retired] Mr. Soumitra Pal, Chairman, State Administrative Tribunal, West Bengal, Shri M. K. Bagchi, the publisher and Shri Samit Roychoudhury who had designed the book among others. Members from the Rail Enthusiast Society and eminent citizens and rail lovers from across the country and abroad joined the gala ceremony either physically or through online platform.

Sir Mark Tully emphasised on the importance of preserving the rich railway heritage of India and commended the authors for espousing this cause by penning interesting anecdotes through popular railway literature.

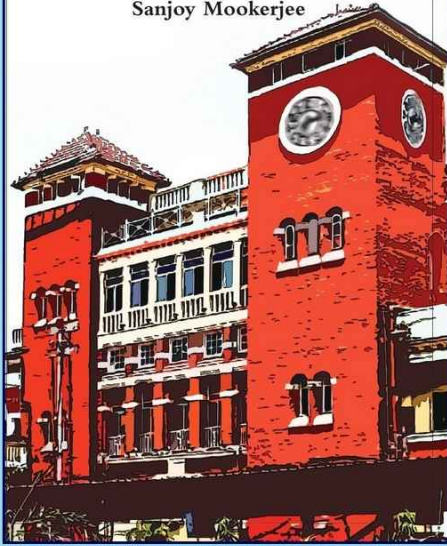
Shri Arora admired the ingenuity of the author and dedicated the function as part of the Indian Railways' celebration of 'AZADI KA AMRIT MAHOTSAV' to celebrate 75 years of Indian independence. This was followed by introduction of the members of the book production team and honouring them with mementoes.



The evening would be long remembered for the hospitality and warmth provided by the host. Following discussions on the novel, the successful evening concluded after treating the guests to some delectable refreshments.

HOWRAH JUNCTION

Sanjoy Mookerjee



WELL, THAT WAS THAT

HOWRAH JUNCTION

A NOVEL BY SANJOY MOOKERJEE

a review by Sri Sudev C Das

After reading in one go, through the 182 pages of "Howrah Junction" by Sanjoy Mookerjee, the image of the station as a timeless and heartless monolith, so well entrenched in my mind, changed dramatically. The story of Howrah is told through the protagonist Samar Shome, a young officer of the Indian Railways who from his early years was infatuated by the trains of the Darjeeling Himalayan Railway that huffed and puffed up and down the Darjeeling Hills where he grew up.

Samar, as the second in command of the Railway Division at Howrah has to ensure the smooth running of a network spanning over 800 kilo metres and 200 stations. In the process, Samar interacts with a countless number of his colleagues and juniors like Munna Lal, the Chief Health Inspector who heads a 200- strong army of sanitary workers, Ramen Xavier, his technical assistant, TarunBagchi, who can solve "problems however insurmountable, at a moment's notice", and his protégé, Ishan. There is also Mahamaya, the Divisional Personnel Officer, who in the eyes of young Samar "was fair, petite

and delicate but with determined, sparkling eyes".

Samar's daily routine suddenly turns topsy-turvy as the Rajdhani Express which had departed from Howrah Station meets with an accident and reports of casualties start pouring in. Samar with the guidance of his boss Vaidi, the Divisional Railway Manager, has to set the engine on full throttle and the real drama unfolds as Samar's colleagues rally around him. Samar not only has to put the whole machinery on highest alert but to coordinate with all the related functionaries on a war footing to create a "green corridor" to carry the injured passengers to hospital, taking care of the worried and irate relatives of passengers, issuing of death certificates without hassle by setting up help desks and not forgetting to ensure that when the corteges departed carrying their occupants to their final resting places the Railway Police Brass Band and Drummers played the 'Last Post.'

At the critical moment, Samar skilfully suppresses his anxiety about the safety of his own aunt, "Bulu Pishi" who was also travelling by the same ill-fated Rajdhani Express unaccompanied, yet under the careful eyes of Md.Ashraf, the railway catering boy, who promised Samar that he would take care of his aunt during the journey. But at the end there is a sudden twist in the tale. Finally, Samar with Mahamaya and TarunBagchi unravel the mystery. At places the story pulls the heart-strings. At the same time, the story of rehabilitation of the hapless platform boys exploited and tortured by the local mafia would make even the unkindest heart bleed.

Thanks to the author for putting on the table an excellent drama, full of fascinating tidbits about running a railway, which only an insider would be privy to. Hard to put down once you start reading it.

A special review by Sri Dilip Samantray

On going through Howrah station I was amazed with the narration of post-accident management details by the author. I am sure it is from his direct experience of one of the worst train accidents. The holistic approach and comprehensive action plan and methodical execution is an education to all railway officer directly or indirectly associated with accidents and relief work. I felt it should be a sort of bible for all railway officers as it has everything that is needed in managing a post-accident scenario, especially the human touch part is a lesson must be cultivated as that is most missing part in our railway fraternity in such a situation. A great gift from Sri Sanjoy Mookerjee who is otherwise an iconic personality in IRAS fraternity.



Raktim Bhattacharjee



K Gautham Karthik



K Gautham Karthik



Anish Banerjee



Munna Bellamkonda



Ravi Kumar



Ravi Kumar



Ravi Kumar



Arajit Gharai



Roshan Rajeev



Bittu Maity



K Gautham Karthik



Roshan Rajeev



Sourav Dutta



Ayan Dutta



Bittu Maity



Anish Banerjee



Munna Bellamkonda

First Ever AI Based Locomotive Inspection System commissioned at Bandra Trip Shed of WR

Western Railway's Mumbai (MMCT) division has introduced the country's first ever artificial intelligence based locomotive inspection system at Electric Loco Trip Shed, Bandra Terminus on 18th December, 2021. A part of "Digital India" initiative, this system is equipped with advanced technologies like 2D & 3D cameras, thermal camera, edge processors, sliding arms, access points, light detection & ranging system (LIDAR), etc. This system is capable of measuring temperature of axle box, detect loose or hanging parts, foreign particles, wheel profile, defects in carbon strip, thickness of brake block, broken roof insulators, defects in the cattle guard, primary spring cracks, etc. Moreover, it also raises alarms for proper intervention. With a speed of 1 meter per minute, it takes 20 minutes to inspect a locomotive based on the above parameters whereas manual inspection takes 3 hours. This artificially intelligent system has improved repair & maintenance of locomotives in terms of time taken, effort as well as quality of work. As a result, it has improved overall efficiency, loco outage & pit availability.

Modern State-of-the-art 3-phase MEMU Begins Operation in Sealdah Division of ER

Ushering in a new era of MEMU travel in Eastern Railway as well as Kolkata Suburban & Non-Suburban region, ICF Perambur manufactured two modern MEMU rakes were commissioned & put into mainline service from 9th December, 2021 in Sealdah-Lalgola & Sealdah north sections. Initially, they were operated for a brief period of 3-4 days until their functional inauguration on 28th December, 2021 gave way to operations on a full-fledged daily basis. Two rakes, each consisting of 12 coaches were formed from three 8-coach rakes at their home depot, i.e., Ranaghat Carshed. These stainless-steel rakes have a modern aerodynamic shell, 3-phase AC synchronous traction motors, Bombardier Transportation based propulsion system & energy efficient regenerative braking feature. In terms of passenger amenities, they are equipped with all modern facilities including modular bio-toilet. These rakes will prove to be a boon for both passengers & Indian railways in terms of maintenance & ride comfort.

Kolkata Metro Introduces QR Based Ticket Booking System

As a measure to promote contactless tickets, Kolkata Metro introduced QR code-based ticket booking system from 4th December, 2021. This facility will be available only on East-West Metro corridor as of now. On 3rd December, 2021 Shri Manoj Joshi, General Manager, Kolkata Metro travelled with a QR-based ticket on this line for the first time. The North-South corridor shall be equipped with QR code-based tickets from 2022 as the AFC gates are yet to be retrofitted with QR-code scanners unlike East-West Metro which is already equipped with the same since its inception. In order to travel with QR code-based tickets, one needs to download the 'Metro Ride Kolkata' application in their mobile phones to book QR tickets & scan them on the AFC gates. The QR code-based ticket booking system will reduce long queues & person to person physical contact at the counters.

The Newly Inaugurated Kanpur Metro becomes the fastest built Metro Corridor

December 28th, 2021 saw a new addition to the map of India's currently operational metro railway networks in the form of Kanpur Metro. The metro corridor was inaugurated in presence of the Country's revered Prime Minister and the Chief Minister of Uttar Pradesh. The 9 km long stretch from IIT to Motijheel was built on priority within a span of 2 years therefore, setting a global record. The Uttar Pradesh Metro Rail Corporation (UPMRC), which had earlier constructed the Lucknow Metro, seamlessly finished off the work of Kanpur Metro after commencing the construction from November 2019. They properly utilized the lockdown period to build the entire elevated stretch of Kanpur Metro & get it ready for trials by November 10, 2021.

First HHP Diesel Locomotive WDG4 # 12001 Restored By SWR

After remaining out of mainline service for a long time with a doubtful future ahead of it, the heart throb of many rail enthusiasts across the nation, the first high horsepower (HHP) diesel locomotive of Indian Railways, WDG 4 # 12001 addressed as "Godfather" by the rail buffs, is now ready to resume mainline duties. The rapid rate of electrification & increase in number of electric trains somehow led to the decision of reusing old diesel locomotives to construct a new electric loco class WAG 11 (which later proved to be a failure). Initially, the set of first 17 WDG 4 locomotives from Hubli, 12001 to 12015, 12017 & 12018 were selected for this purpose. This implied that IR was ready to sacrifice 10 imported EMD locomotives from General Motors (12001-12010) & the remaining units which were constructed by DLW with kits supplied by GM. Thankfully, the collective effort of many railfans requesting railway authorities to at least spare their beloved "Godfather" paid off. South Western Railways as of then had decided to preserve this locomotive once it becomes unfit for mainline duties or else who knows, this locomotive also might have ended up with its dilapidated younger siblings lying outside BLW with an uncertain fate. Unfortunately, within a short time span the loco developed a few shortcomings & needed to undergo a major schedule. It remained dismantled inside its home shed with many parts stripped off for a long period & the chances of its return to mainline seemed very bleak. Kudos to the authorities of Diesel Loco Shed Hubli & SWR, who instilled a ray of hope when they decided to make best use of their in-house overhauling facility to rejuvenate "Godfather" which reflects their passion as well. Finally, after a thorough overhaul & a long wait, WDG 4 # 12001 is ready to reconquer the hearts of railfans as they eagerly wait to witness the legendary workhorse charge down the rails once again roaring at full glory.

Bed rolls & Pantry Services Restored in Indian Railways

Indian Railways has decided to reintroduce bedrolls in the air-conditioned coaches of the trains on a gradual basis. Dedicated kiosks at stations will supply disposable bedroll kits which will include blankets & bedsheets. As of now, three types of kits will be made available for purchase – a) A full-pillow kit worth 300 INR consisting of one blanket, bedsheet, pillow, pillow cover, toothpaste, toothbrush, hair oil, comb, sanitizer, soap strips, tissue papers and disposable bag each of single quantity. b) A medium range kit worth 150 INR which would include only a blanket and c) A small Good Morning Kit of 30 INR which will be including a toothbrush, toothpaste, comb, soap strips, hair oil and tissue papers. One can also purchase the above kits online via IRCTC official website or mobile application & collect it from the kiosks at railway station. This service is available between 6 AM & 10 PM.

Keeping in mind the low number of covid cases in the country, Indian Railways have resumed pantry services in premium trains phase by phase from mid-November which otherwise were completely suspended since April 2020 after the country got badly hit by the pandemic. Currently, catering charges are not included in the ticket & packed cooked foods will be available in lieu of payment of the listed price.

RAIL CANVAZ

A TrainTrackers' Initiative

May 2022



Gwalior Light Railway

COMING THIS SUMMER !!!