

# RAIL CANVAZ

A TrainTrackers' Initiative

1st June 2021



# Darjeeling Himalayan Railway

An uncluttered mind accentuated with romanticism and idyllic passion is all one needs to enrapture the soul and free one's love from the shackles of doubts and uncertainties. There are moments when the mind lords over the heart but there are occasions when love prevails. Our love for the Queen of Hills knows no bounds and gets reciprocated through the same vibes and spectacular landscapes that captivate our souls! Nestled and perched atop the lofty Himalayas, Darjeeling reminds us of tea gardens, rolling hills and snow-clad peaks in the distance that ultimately culminate with the panorama of the majestic Sleeping Buddha - the Kanchenjunga. But for ferroequinologists, Darjeeling has more to offer than its breathtaking sights and scenes, this is the land of two T's – the Darjeeling Tea and the Toy Train or the Darjeeling Himalayan Railway (DHR). Built around 1879-1881 by the colonial administration, DHR not only evokes nostalgia but also has rich historical value. DHR finds mention in a sketch of Abanindranath Tagore and also happens to be the first railway route in the country as well as the first Industrial Railway of Asia to be conferred with the prestigious World Heritage Site status by UNESCO on the 5<sup>th</sup> of December, 1999 – second only to the Semmering Railway of Austria.

DHR is not just about a journey, it's a ride on board an engineering marvel across steep grades and all the blood and sweat that went into making this railway a reality. Be it for the steam-charter trains or the joyride services through Ghoom – the highest railway station of India and the Batasia Loop which is actually a spiral train track encompassed by well-groomed gardens, DHR caters so much warmth and delight to its visitors that they keep coming back for more, year after year. DHR was the first hill railway of British India which became a precedent for not only the other hill railways of the nation but also for the Dalat line in Vietnam and the Maymyo line in Myanmar. DHR has also been the source of inspiration to many Bollywood directors who have, over time and ages, managed to get DHR featured on the celluloid. Remember the evergreen Bollywood song "*Mere Sapno Ki Rani Kab Aayegi Tu....*" immortalized by Kishore Kumar from the iconic 1969 movie *Aradhana* starring Rajesh Khanna and Sharmila Tagore, picturized on the Darjeeling Himalayan Railway! This is one of the many instances but perhaps the most popular of them all, where the toy train was made the cynosure of the song itself which had had an everlasting impact on generations to come. During the centenary celebration of DHR, the Postal Department came up with a unique idea. The moment was made special by the release of a commemorative postage stamp for the occasion. Thus, it goes without saying that DHR had an immense appeal in almost every sphere of life, both globally and ethnically, and it's no wonder that we dedicate this issue to the ever-loving Toy Train of Darjeeling and track its journey over decades through our cover story.

No discussion about DHR can be complete without the mention of the Darjeeling Himalayan Railway Society (DHRS) – a UK based international group dedicated to promoting awareness of, interest in, and support for, the Darjeeling Himalayan Railway. We are grateful to the DHRS for giving us an opportunity to join hands to enrich our instant issue with invaluable articles from **Paul Whittle** (*'The DHRS Story'* and *'From the Bookshelf'*) and **David Charlesworth** (*'Up the Line to Darjeeling'*). David presents a highlight of the nitty-gritty of the line up the hill, including identification of 132 level crossings and various loops and sidings along the route that have been lost over time. On the other hand, Paul informs the readers how the society came into being and what its objectives are with *'The DHRS Story'* and follows this up with a brief description of some titles produced by the DHRS in *'From the Bookshelf'*. DHRS also unravels a series of spectacular photos in *'DHR Through Images'* segment.

Our profession often takes us to various places, and we end up concatenating an attachment with that place and its people. This is exactly what happened with **Narayan Das**, my colleague posted in Darjeeling, as we find a completely different and unique perspective of DHR through his thoughts and lens in *'Machine, Mist and Mountain'*.



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Our *Calcutta-Melbourne Tramjatra (Part-2)* series on the Kolkata Trams continues through the pen of **Roberto D'Andrea** who writes about the Calbourne tram that toured all the tram depots of Kolkata in the year 1997, while our Technical Insight section has **Anamitra Bose** getting up close and personal with the nation's first Train-set through his article '*Vande Bharat : A Dream Realised*', offering some intricate technical details. We are delighted and proud to have the brainchild of Train-18, **Mr. Sudhanshu Mani**, the former ICF GM, who provided indispensable and invaluable inputs along with photos for this article.

After the wonderful Steam Locomotive footplating episode in the previous issue, **JL Singh** comes up with another gem '*On Diesel Locomotive Footplate*' – sharing his experiences and thrills of footplating and driving a Diesel Locomotive thereby taking another leaf out of his illustrious carrier with the Indian Railways in our Legend Speaks section.

Flipping through, we have a Book Review of Sanjoy Mookerjee's "*Train to Darjeeling*" by **Atulya Sinha** where he opens up on the passion and dedication of Mr. Mookerjee in '*Travelling on Nostalgia Express*'.

The Assistant General Manager of South Western Railway, **P K Mishra**, brings out an exhaustively researched article on the origins of the East Indian Railway. This is the first of a special 20-part series that begins with this issue which examines the historical annals of railways in east India.

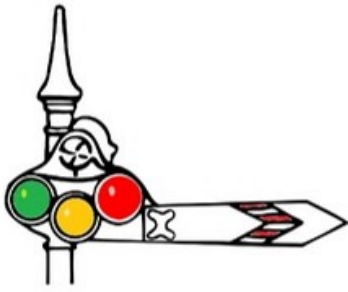
The 2021 Independence Day issue of Rail Canvaz is dedicated as a special feature on the Meter Gauge system of Indian Railways. To start things off, a first-hand account of the Uttar Pradesh Meter Gauge network on the Shahjahanpur - Pilibhit MG section is featured in this issue. The essence of travelling '*Through the heartlands of Uttar Pradesh*' ending with the terminus at Bahraich, via Mailani including the branch line to Nepalganj Road in little red-brown boxes continues through a series of further installments in our forthcoming issues.

We wind up with our regular sections – *Photo Junction* portraying some stunning lens work from fellow ferroequinologists across the nation and *News Station* limning happenings of recent past.

With the second wave of the Covid-19 pandemic playing havoc and proving to be more fatal while shattering lives, we urge everyone to stay home and follow all social-distancing protocols to stay safe. That's how we can contribute to our society by breaking the chain and staying alive. We hope this issue will bring joy to a few faces in this otherwise grim and grave situation around us. We aspire to wade over this crisis and win this battle against the novel Corona virus as Charlie Chaplin had rightly said, 'Nothing is permanent in this wicked world, not even our troubles'.

*Somsukhra Das  
Subhadyouti Bose*





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1st June 2021

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## Legend Speaks

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## Cover Story



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#### An Epitome of Grace and Engineering Excellence

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**Narayan Das**, a Civil Servant posted in the hills paints an altogether different perspective of the Darjeeling Himalayan Railway with a perfect blend of historical anecdotes with the present state of affairs.



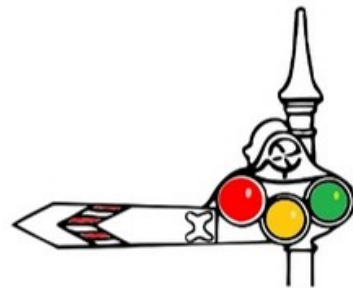
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### Up The Line To Darjeeling

This article by **David Charlesworth** is the result of a series that sought to present a detailed account of a trip up the line and this section, as one can imagine, took almost a decade to finish. The original article is replete with several high-quality maps and numerous photos of now lost loops and sidings as well as details about gauge conversion and the 120 plus level crossings across the route.

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## Exclusive



### EIR Early Days : 1841-44

A masterpiece from the treasure trove of **P. K. Mishra**, the AGM of South Western Railway, who depicts the journey of East Indian Railway from 1841 to 1844 through this first chapter.

## Feature



### Through the Heartlands of Uttar Pradesh

Once the largest state of India used to be the largest Meter Gauge bastion as well, but what remains now is a pale shadow of those glory days...Follow **Somsubhra Das** as he begins a journey from Shahjahanpur through the unknown villages and the little known towns and explores the now almost relegated MG network...



### Calcutta-Melbourne Tramjatra (Part-2)

The series on the Calbourne tram continues through 1997, the second year running, which roamed about all the tram depots of the City of Joy accompanied and narrated by the evergreen and ever vibrant ex-Melbourne trammie **Roberto D'Andrea**.



### From the Book Shelf

**Paul Whittle** summarizes some of the books, booklets and DVDs that have been published about the DHR since the DHR was formed in 1997. Some of the titles discussed in the write-up include Darjeeling: Christmas 1945, Going Loopy, The Story of 198, Up the Line to Darjeeling and many more...

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insidestories



# On Diesel Locomotive Footplate

J L Singh

In the last issue of "Rail Canvaz", I had written of foot-planting on a steam locomotive. I will now switch from steam to diesel locomotives and tell you what it is like foot-planting on these behemoths.

As I had mentioned in my last article, I had been inducted into the railways as a Special Class Railway Apprentice and underwent four years engineering education and training at the Indian Railways Institute of Mechanical and Electrical Engineering at Jamalpur. I completed the apprenticeship in January 1970 and was appointed in the railways as an Assistant Mechanical Engineer but needed to undergo a two-year probation. During this probationary period, we were attached to various working establishments of the Indian Railways, where mechanical engineers like us would be required to work. These establishments included production units like Chittaranjan Locomotive Works, Diesel Locomotive Works and Integral Coach Factory. These were the only production units then; many have been added since. We were also attached to the Research Design and Standards Organisation at Lucknow for some time. In addition, we worked on operational divisions and repair workshops. Since our training at Jamalpur covered steam locomotives only, we were also attached to diesel locomotive sheds. As part of the

last named, I spent a month at the New Katni Diesel shed in the middle of 1970. Three of us probationers did this assignment together.

My first diesel locomotive footplate was part of this training period. The three of us footplated on a WDM2 diesel, working a goods train from Katni to Satna and returned back to Katni traveling on another goods train.

The first thing that struck you when you climbed onto a diesel loco was how clean it was compared to a steam loco. There was no coal dust, no heavy smoke from the chimney. We later realized that while the coal dust and other such items from a steam loco were easy to wash off yourself and your clothes, the oil and grease that you picked up from the diesel, though much less, took a lot of effort to wash away. All the same, the first impression was that of cleanliness. Another item you noted straight away as that while on a steam loco, you were confined to the driver cabin area, you could actually walk around the locomotive on a footboard that went around it, even while the loco was in motion.

Entering the driver's cabin was again very different from a steam. On a steam loco, the cabin is open to the elements.



Cab view from a BG Diesel Locomotive

Photo courtesy: Somsubhra Das

Smoke, wind, rain, dust, sun, cold, heat, can all enter the cabin at will. The diesel loco cabin is enclosed, like a motor vehicle and you are totally protected inside. Cabs in India have not been air-conditioned, but there is no problem if you would like to do so. While you are exposed directly to the firebox on a steam loco and have to bear the heat, in a diesel, the working parts are all in separate compartments and the driver and his assistant have no exposure to them while they are operating the loco. To add to the comfort, the driver and his assistant have seats to sit on and control the locomotive while sitting. In other words, driving a diesel loco is far more comfortable than a demanding steam.

The WDM2 locomotive, as in the case of all single cab diesels, has one long hood and one short hood. The short hood side is referred to as the front of the loco. However, the loco can be worked in both directions easily and working with the long hood leading is like operating a steam locomotive, where the boiler is a permanent long hood. On the WDM2, there are two control stands and the one on the right in the direction of motion is the one that is used. When the loco is to move in the opposite direction, the other

Electrical equipments inside a WDM3A

Photo courtesy: Somsubhra Das



Driving Panel of WDM2/3A Locomotive

Photo courtesy: Anjan Roy Chowdhury

control stand is used. On the Meter Gauge version of the Alco loco, the YDM4, owing to space restrictions, there is only one stand, so that when working long hood leading, the control stand is on the left and the driver has the controls behind him rather than in front. This does create some difficulties but drivers get used to it. I have worked Meter Gauge diesels myself with long hood leading and have had no problem. I would like to mention here that I have worked diesels often, even independently as a driver; I never had the courage to do that on a steam loco. Of course, as part of our training, we did do firing of coal into the firebox and even handled the locomotive, but with a regular driver and fireman (and often along with a locomotive inspector) with us.

I would like to mention here that although many of us have worked diesel locos ourselves, legally, we cannot do so. There are two reasons for this. First, we have not been certified that we know the road. Second, we are not certified to have the correct vision. While my vision may actually be good, my certification is for a lower level of vision. This means that whenever I did work a locomotive, it was actually illegal.

Driving Panel of a NG Diesel Locomotive

Photo courtesy: Somsubhra Das





Conventional Driving Panel of a WDM3D Locomotive

Photo Courtesy: Somsubhra Das

One of the problems with a steam locomotive is that their starting torque is low. Thus, it takes a lot of effort to start a fully loaded train with a steam. There is no such problem with the diesel. Although the goods train that we were hauling was fully loaded, the driver had no difficulty starting the train. The throttle of a WDM2 has 8 notches and the train began to move when the driver had moved to the 3<sup>rd</sup> notch and we were well on the way by the time he had reached the 4<sup>th</sup> notch. You will find a picture of the control stand of a YDM3 locomotive on this page. Although not exactly like a WDM2, the overall controls are the same.



Looking at the control stand, you will find that the driver has all controls well within his reach. He does not need to have physical strength for any work, while a steam driver does need some strength even to open the throttle. I have often felt that driving a diesel loco is like

driving a car with automatic gears and no steering wheel. Also, a good steam driver can make an enormous difference to the performance of the loco; on a diesel, if the locomotive is well-maintained, the driver makes very little difference.

Driving Panel of an Industrial Diesel Shunter

Photo Courtesy: Somsubhra Das



Water Level Indicator inside a BG Diesel Locomotive

Photo Courtesy: Somsubhra Das

The skill of a driver comes in under two circumstances. The first is braking. Being able to stop a train exactly where you want to, requires a fair amount of practice and skill. A fully loaded goods train needs more than a kilometer for a normal halt and this takes some skill. Of course, here again, the exhaustor on a diesel is far more efficient than the ejector of a steam locomotive. Thus, maintenance of vacuum is far better on a diesel than on the erstwhile steams, making the driver's job on the diesel easier. The second area where the skill of a driver comes in is when the locomotive fails or gives trouble.

If a road vehicle fails, it is simply pushed to the side of the road and other traffic can keep moving. In the case of a locomotive, if a loco fails in midsection, all other traffic also comes to a halt. Therefore, it is imperative that the line is cleared as soon as possible. There are many failures that the driver can fix himself and save a lot of time. Otherwise, an additional loco will need to be sent to clear the stalled train. Of course, if a major equipment like the engine itself or the generator fails, the driver can't do anything, but many other items can be attended.

After this first foot-plate, I foot-plated extensively on diesels,

Driving Panel of NDM1 Class Locomotive

Photo Courtesy: Somsubhra Das







A GOC YDM4 Class Locomotive. Image courtesy: Somsubhra Das



A WDM4 Class Locomotive. Image courtesy: Rudranil Roy Chowdhury.



A Bangladesh Railway Locomotive

Photo Courtesy: Somsubhra Das

during the probationary period and when I was posted. In addition to foot-plating on locos in India, I have had the privilege of foot-plating on YDM4s in Tanzania and Vietnam, WDM2s and YDM4s in Bangladesh, GM and GE locos in Botswana, EMD locos in the USA. Interestingly, I have never footplated on the EMD locos manufactured by DLW. But in India, apart from WDM2s and YDM4s, I have had occasion to foot-plate on the WDS4s, WDM4s, YDM3s and YDM5s. The WDM4s I have mentioned are the original GM locos and not the current series with the number 4 that indicates that they are 4000 HP machines.

My most interesting footplates have been as a member of the Territorial Army (TA), when deployed in aid of civil power. One occasion was during the 1974 general strike and the second on the NF Railway when the TA was embodied to help the railway take care of wildcat strikes taking place in the North Eastern part of the country. On both occasions, owing to shortage of drivers, I was booked to work trains independently.

During the 1974 general strike, Bombay Division of the Central Railway was totally on strike. This meant that no

A YDM3 Class Locomotive

Photo Courtesy: Rudranil Roy Chowdhury



A WDM2 Class Locomotive

Photo Courtesy: Author

trains were running between Bombay and Igatpuri. I was given charge of a small contingent of TA running staff at Igatpuri, and we were to run trains up and down the Dhule Ghat between Igatpuri and Kasara. The ruling grade on this section is 1 in 37. There are three catch sidings on the short 11-kms stretch. Since all electric loco staff, who normally worked the section were on strike, our TA unit was to cover the stretch with diesels from Itarsi shed.

I decided that since we were on such a steep grade, I will make sure that the speed would not cross 25-30 kmph. I put on the dynamic brakes and began rolling down the ghat. When I thought we were doing a comfortable 30 kmph, the Assistant Driver yelled that the speed was 40 kmph and we were approaching the first catch siding. I immediately applied emergency brakes. By this time, I could also see the signal before the catch siding; it was rather close and we were not losing speed fast enough. Of course, all ended well with the train coming to a halt just a meter short of the signal.

One of the trips when I worked as Driver on NF Railway, things went a little differently. I was working a Python, i.e. a

A WDM2 Class Locomotive

Photo Courtesy: Somsubhra Das





Driving Panel of WDP3A Class Locomotive

Photo Courtesy: Somsubhra Das

train where two rakes of empty wagons were joined together to form a long train, to be worked by one locomotive. The trip was from New Bongaigaon to New Jalpaiguri. The trip began at around 10 p.m. I noted that I had full vacuum on the locomotive. I whistled and looked back to see if the Guard gave me an all-clear. Unfortunately, it was a little foggy and the train being double the length, we could not see the Guard's signal. The Yard Master urged me to start the train as if I did not, I would miss the current path, which was important as we were a long train and could not organise a crossing at any station. We had to get a clear run.

Soon, we were on our way. Since the wagons were all empties and there are no steep grades on this route, hauling power was not a problem. We kept getting through runs at all stations till we approached New Cooch Behar. The distant signal was yellow and the home was red. This was upper quadrant territory with 4-aspect signalling. I applied train brakes. When you apply brakes on a long train, especially with vacuum brakes, there is no slowing down for some distance. Therefore, when the train did not slow down immediately, I was not perturbed. However, even after some more distance, the train still did not slow down and the

A WDS4 Class Locomotive

Photo Courtesy: Somsubhra Das



New age Driving Panel of WDM3D Class Locomotive

Photo Courtesy: Somsubhra Das

home signal was approaching fast. While we did start slowing down when we were crossing the distant, it was obvious that we would cross the home signal. Fortunately, in 4-aspect signalling, the home signal is 120 m from the facing points. Thus, we crossed the home signal and came to a halt about 50 m short of the facing points. As we were approaching the home, my Commanding Officer (also a railwayman) told me to switch off the headlight. When I asked why, he replied as then the station master and the station staff cannot make out that you have crossed signals. Anyway, all's well that ends well and we completed the rest of the journey without a mishap. The problem was that when the two rakes had been coupled, the staff doing the coupling connected the two rakes but forgot to connect the vacuum hosepipes. We thus had only half the brake power that we should have had as the second rake was not getting braked.

Overall, footplating on a diesel locomotive is far easier than doing the same on a steam locomotive. Since drivers can easily fall asleep on the former, a device called the Vigilance Control Device was fitted on all locomotives in the days of my footplating. The device was a pedal on the floor where the driver could easily operate it. The driver was required to release and press the pedal at intervals like 1-2 minutes. The interval could be set by the shed staff. If the driver went to sleep or fell sick and did not operate the pedal, an audio warning sounded. If awake, the driver then shut the warning to indicate that he was alert. If the driver did not respond, loco brakes would apply automatically 15 seconds after the audio alarm.

Of course, in spite of having to keep alert enough to operate the device, not only diesel locomotive footplating but also driving the locomotive is still very easy and comfortable.

Cover photo courtesy: Anjan Roy Chowdhury





# VANDE BHARAT : A DREAM REALISED

- Anamitra Bose

**Scene #1 :** Amidst the early morning vibes at the New Delhi Railway Station, – Dale arrived with Matthew on their maiden visit to India. The only perception they carried about Indian trains was the existence of two sophisticated services – the Bhopal Shatabdi and the Gatimaan Express other than some of the luxurious tourist trains like Maharajas' Express, the Deccan Odyssey and the Palace on Wheels. They had been tipped off by their native friends to avoid the usual 'overcrowded and shabby' Indian trains. Likewise, the Agra bound couple had booked their tickets on the 12002/New Delhi-Bhopal (Habibganj) Shatabdi Express. As their train was being shunted, Matthew was awestruck with a sight he never expected to experience in this third world nation – a gleaming train-set sneaking into the adjacent platform which had a striking resemblance with the German ICE back home. Dale's eyes also lit up to see the state of the art and trailblazing piece of engineering marvel – the Vande Bharat Express!

**Scene #2 :** Throwback to March 2017, Sudhanshu Mani, the

then newly appointed GM of Integral Coach Factory (ICF), Chennai was looking for a new team comprising of passionate engineers and hard-working technicians for realising a long-standing dream – to accomplish a 'Train-set' fully designed and made in India. Standing at that juncture, which was 'Mission Impossible' as there were yawning gaps between the available expertise and the proficiency required to design and build a world-class train. Although the project looked inconceivable, Mani did notice that the team of officers and technical staff at ICF was perhaps the best possible he could get in the country and what they lacked in skill and experience could be made up by their chutzpah and willingness to experiment and learn. Losing no time, a select team was put on and was engaged in the Mission Train-18 with a specific vision combined with superlative passion. The result is there for everybody to see - they came out with flying colours after traversing a long, winding path adorned with hurdles and burdens of expectations. Vande Bharat or Train-18 became a reality by virtue of the endeavour and colossal commitments marked with untold stories of



New Jig Inauguration - 09-02-2018

Image courtesy: Sri Sudhanshu Mani

sacrifices that paved the path for a super success. Thus, Vande Bharat announced the arrival of India on the global stage where indigenous technology and machinery were good enough to take the nation further to the next quantum.

So, what is a Train-set? A train-set is a set of train coaches coupled mechanically and electrically with distributed motive power equipped with driving cab at both the ends. Unlike a locomotive powered conventional train which is powered at one end and can be driven in one direction only, the train-set can be operated from both ends without the requirement of a loco reversal. Actually, train-sets have been in use in India for nearly a century now but they were limited to EMU, MEMU or DEMU consists only. A multi-unit powered train-set for mainline operations, that too as a premium train, was a far-fetched dream a few years ago. But with gradual advancement of technology, coupled with the experience of turning out Metro coaches proved to be a boon. A mere 18 months was all that the ICF took to rollout the miracle – a record in itself.

The Railway Board had allocated a good 200 crores for this ambitious project but it was too much too little compared to universal proposition. But this niggardly allocation failed to dampen the spirits of the team as they went ahead with

Underframe Jig

Image courtesy: Sri Sudhanshu Mani



Sidewall Roboting Welding

Image courtesy: Sri Sudhanshu Mani

whatever they had got at their disposal and ultimately VB was built at one-third the cost of import of an equivalent Train-set. After the design stage got over, it was time for bogie and shell manufacturing. The bogie was specially designed alone for this train-set which became a benchmark for future ICF projects.

The most amazing and interesting aspect of every train-set is the formation—which is unique with every manufacturer and purpose. A train-set is completed by assembling various categories of coaches in a particular formation. These categories are mainly the Motor Coaches (the coaches having the motors installed in it that can haul the rest of the formation) and the Trailer coaches (the coaches that are non-powered). The number of motor coaches in a train-set determines the acceleration, speed, tractive effort and efficiency. The number of motor coaches divided by the total number of coaches in a train-set gives the percentage of powering for the same.

#### The Composition :

Train-18 is technically a 50% powered train-set which means that 8 out of 16 coaches of the train-set are motor coaches and the rest are trailer coaches. The 16-coach train-set is

Sidewall Welding

Image courtesy: Sri Sudhanshu Mani





Lifting of the Driving Trailer Car (DTC)

Image courtesy: Sri Sudhanshu Mani

composed of 4 Basic Units (BU) of 4 coaches each. These basic units are of two types: End Basic Unit and Middle Basic Unit. The Train-18 has two End Basic Units with two Middle Basic Units in the middle. The End Basic Unit comprises of the pattern of coaches which includes Driving Trailer Car--Motor Car--Trailer Car--Motor Car while the Middle Basic Unit involves Motor Car-Trailer Car-Motor Car-Non-Driving Trailer Car.

Again, the Trailer Coaches are of three types:

- Driving Trailer Car (DTC) – the coach having a driving cab at one of its ends and a normal chair-car in the remaining part. DTC has battery, battery charger and compressor as the machineries installed underslung, i.e, beneath the bogie.
- Non-Driving Trailer Coach (NDTC) – this has all the features of the DTC except the fact that it lacks a driving cab.
- Trailer Coach – A normal trailer coach in this train-set comes with a pantograph on the roof for the purpose of traction collection. Machineries underslung in this coach are transformer and auxiliary converters.

Motor Cars are the coaches which have traction motors fitted within them and are responsible for the locomotion of the train. In Train-18, the Motor cars along with traction motors

Roof Assembly for the DTC

Image courtesy: Sri Sudhanshu Mani



The ICF Staff

Image courtesy: Sri Sudhanshu Mani

have Traction Converters and Brake Chopper Resistor.

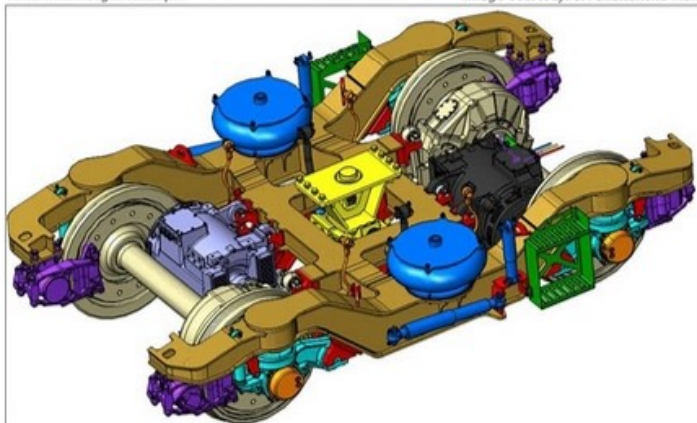
All of these coaches are connected through a common communication bus — TCMS (Train Control and Management System) which controls the Passenger Information System, Sliding Doors, Traction Converters, Brake functioning etc.

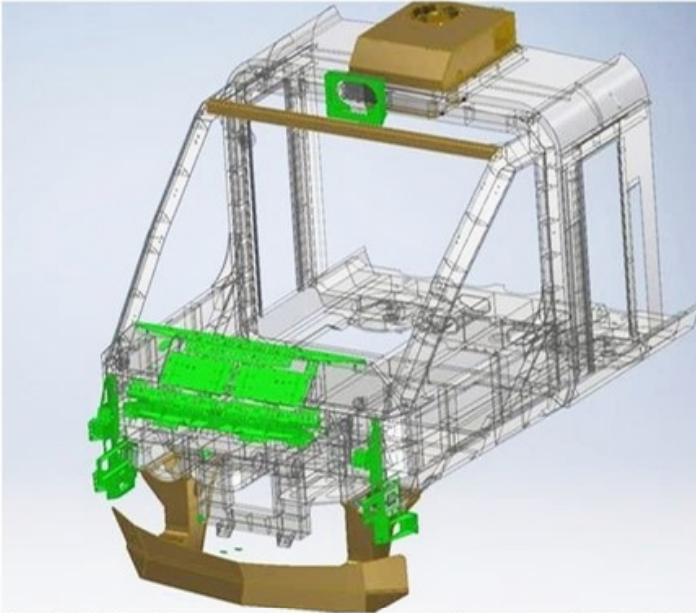
#### The Bogie and the Shell :

The bogie was freshly designed entirely for the Train-set. Its design aimed for a better ride quality and accommodation of the fully suspended traction motors capable of better transmission to axles and lesser axle weight implying reduced wear and tear on tracks. It was developed in collaboration with M/s. E C Engineering – a Poland based firm. The bogie is designed to achieve speeds greater than 170 kmph in addition to providing a better ride quality. The bogie is made of advanced bolster-less design and is based on a Y-shaped frame. Bolster is the main part through which the car-body and bogie are connected. Every train bogie has two types of suspensions — Primary and Secondary. Here, the Primary suspension consists of Coil Springs with control arm and the Secondary suspension is provided by air springs which are known to provide excellent stability for the coaches. For more-jerk free ride, 3 types of dampers have been utilized – horizontal, vertical and YAW. YAW dampers are used in aviation industry especially in aeroplane blades

Assembled Bogie Concept

Image courtesy: Sri Sudhanshu Mani





Train-18 Initial Concept Nose

Image courtesy: Sri Sudhanshu Mani

for reducing tendencies of oscillations. The body shell is mostly based on the tried and tested LHB (Linke-Hoffmann Busch) design. Continuous bezel-less windows have been provided for better aesthetics. The gangways connecting various coaches are sealed with flexible sidewalls.

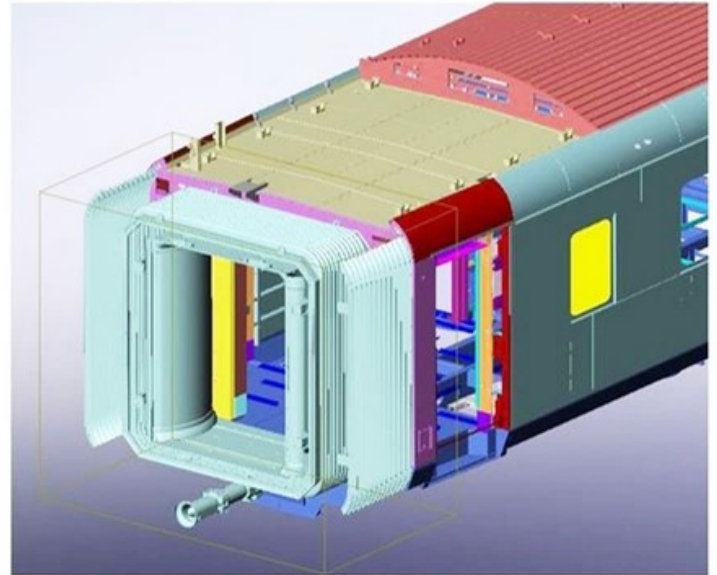
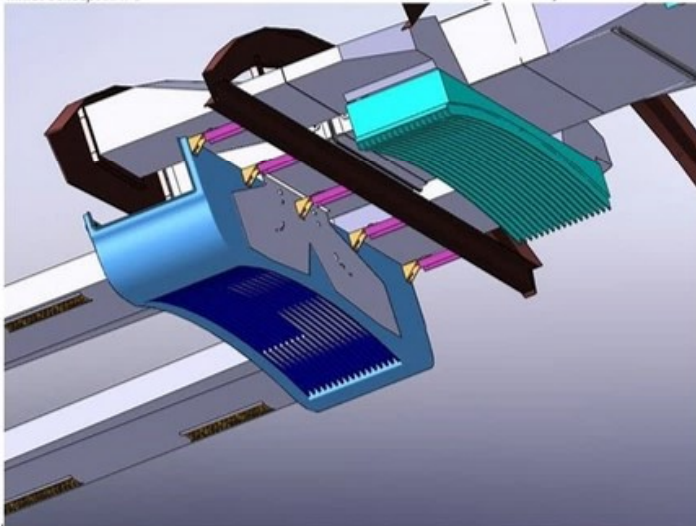
The driving ends of the cabs have a protruded nose-like structure offering reduced air drag for high-speed operations. The coupler of the train-set is of semi-permanent Dellnar one, based on the conventional CBC (Central Buffer Coupler) type draft gear with semi-permanent head which has greatly reduced the jerks as is the case with locomotive-hauled CBC trains.

#### The Electrical equipments :

Train-18 has often been referred to being an “Engineless” train in our country. But how can a train be engineless? The “engineless” factor begins and ends with the fact that no visible locomotive, in the truest sense of the term, actually

Initial Concept RMPU

Image courtesy: Sri Sudhanshu Mani



Initial Concept Gangway

Image courtesy: Sri Sudhanshu Mani

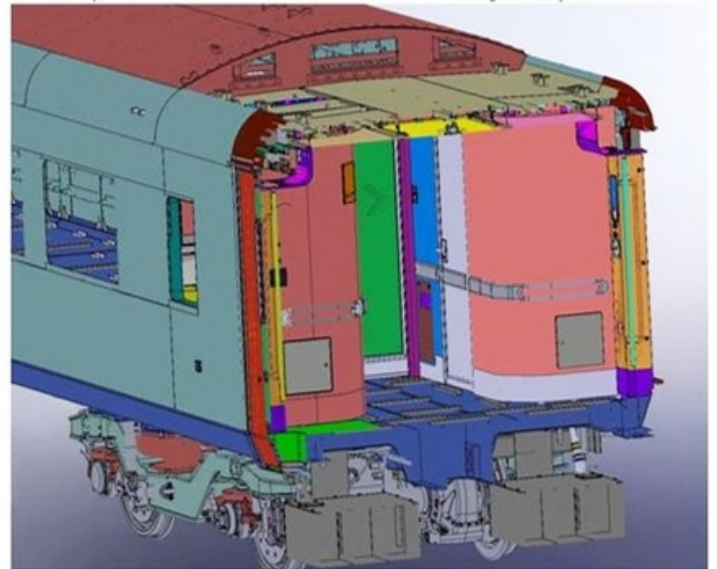
drives this train. The terminology may seem to be the latest fad but a lot has been put in to ensure its success.

The Motor coach has the equipment needed for movement of the train and all other trailer coaches have different equipments to run the motor, or the ‘engine’. The converters driving the traction motors, the mastermind that controls them, forms the propulsion of the Train-set which acts as the heart that keeps it moving.

The traction of the Train-set, considered as the blood running through our veins, comes from the secondary winding of the Main Transformer, which is installed underslung in the Trailer Car. The Traction Transformer has one Primary winding which interfaces the 25kv AC, coming from the pantograph. The secondary coil side has four Traction windings for four traction converters and two auxiliary windings. Each transformer in a Trailer Car feeds two adjacent motor cars.

Initial Concept Toilet

Image courtesy: Sri Sudhanshu Mani





Driver's Cab Interiors

Image courtesy: Sri Sudhanshu Mani

The entire propulsion system of Train-18 has been supplied by M/s. Medha Servo Drives from Hyderabad. It is a modern 3-phase IGBT-based propulsion system feeding the 3-phase traction motors. In each motor car, there are 2 motors per bogie and a single Line and Traction Converter (LTC) is installed.

Each LTC has three basic parts: Line Converter, DC Link Stage and the Traction Converter. The line converter has input from the traction winding from the transformer as single-phase AC and the IGBT switches, forming a full-bridge rectifier which then converts it into a constant DC voltage. IGBT is a modern power-electronic device which can be fully controlled by gate current giving maximum efficiency. Its faster switching speeds enables motors to give maximum acceleration. The DC link stage is an intermediate stage and consists of a DC link capacitor, earth leak detection circuit and brake chopper resistor. As for the brake chopper resistor, it is a safety device to protect the LTC from over-voltage due to sudden fluctuations and non-reception from OHE. Both the brake chopper resistors of two LTCs are installed in a single cubicle. The traction converter acts as an inverter using IGBTs to produce 3-phase VVVF traction required for Traction Motors. VVVF (Variable Voltage Variable Frequency) technology is a counterpart of the 3-phase propulsion and it refers to variation of both voltage and frequency of 3-phase AC to control the torque and speed of the traction motors. Each of the traction motors in Train-18 is a 250 kW, asynchronous 3-phase AC one made by the JV of M/s. Medha and M/s. TRAKTIONS SYSTEME AUSTRIA (TSA). The traction inverter also helps prevent wheel slip and controls two traction motors in parallel.

For two LTCs, there is one LTCU (Line and Traction Control Unit) which is the mini-brain driving the LTCs of the Train-set by sending commands to the IGBTs of the converter, after



Driver's Cabin View

Image courtesy: Sri Sudhanshu Mani

receiving demand of traction or braking from the drivers' cab. It is connected to the Main Control Unit (MCU) through a Controller Area Network (CAN) interface.

Leaving aside the traction, the other needs of voltage is met by the Auxiliary Converters in the Trailer Coach. The name itself comes from the fact that it feeds the auxiliary loads i.e., cooling of coaches and the driving cab along with, lights, blowers, battery charging etc. The Auxiliary converter also has similar stages of line-converter, DC-Link and Inverter. The line-converter receives single-phase AC input from the two auxiliary windings of the secondary coil. The Auxiliary Converter is a Pulse Width Modulation (PWM) based converter having IGBT as the active device. The auxiliary loads are of two types: 415V 3-phase AC and 110V DC. The auxiliary power supply segment has two main components: the Auxiliary Converter Unit (ACU) and Battery Charger System (BCS). The ACU has Auxiliary Converter-1, Auxiliary Converter-2 and DC Converter modules. The AC-1 and AC-2 module consists of Line Converter, DC Link, Inverters and Converter Control section. Both the AC-1 and AC-2 are IGBT-based PWM converter, pulses controlled by Digital Signal Processors of the Control section. Both these sections supply 3Ph 415V AC outputs. From the DC link stage of AC-2, a DC converter generates 110V DC voltage. Significant loads which consume 415V AC 3-phase include Roof Mounted AC Package Unit (RMPU) signifying air conditioning of the coaches, cab AC, blower section etc. Loads fed by 110V DC are Battery Charger Units, lights and charging sockets, and other lamps of the train-set and the Passenger Information System. The control section communicates to the TCMS by CAN communication.

Coming to the braking system of Train-18, it's equipped with an advanced braking system – ESRA evolution type wheel-mounted disc brake system for better braking and low maintenance, made by the renowned global market leader for braking systems, M/s. Knorr-Bremse. The brake system has

Train-18 Initial Concept Configuration



Image courtesy: Sri Sudhanshu Mani





The Trailer Car Underconstruction

Image courtesy: Sri Sudhanshu Mani

in-built redundancy in brake electronics and brake control equipment. The brake control equipment is connected to the TCMS for smooth functioning throughout the train-set.

#### The Train Control and Management System (TCMS) :

The entire train-set is driven by a common software called the Train Control and Management System (TCMS). It acts as whole train bus and connects all of the coaches to the driver's desk. The TCMS is mainly an Ethernet connection to all the main nodes or hubs, wherefrom CAN communication or RS-485 modes of communication connect other control units or nodes. On one hand, the TCMS directs the MCU (Main Control Unit) in the MC to deliver the required tractive or braking efforts which would be communicated to LTCU through CAN while on the other hand, the Passenger Information System door controls, RMPU controls are also handled by TCMS. ACU (Auxiliary Converter Control Unit) is also communicated through TCMS.

#### The Passenger Information System (PIS) :

The PIS is an integral part of Train-18. It is directly connected to the TCMS through Ethernet. It consists of two main components: Man-machine Interface (MMI) and the Car-Control (CC) unit. The MMI is fitted in every coach. In

Interiors Concept Economy

Image courtesy: Sri Sudhanshu Mani



Train-18 Interiors

Image courtesy: Sri Sudhanshu Mani

the leading and trailing Driver Coaches, the MMI is equipped with GPS. The MMI is used for configuring the whole PIS, setting head code displays, coach displays, side displays, announcements etc.

The MMI in the trailing coach serves as the master and other MMIs act as slaves. The MMIs and CCs are interfaced using CAN communication protocol. The CC acts as a local master for every respective coach and interfaces the display boards. In the leading and trailing coaches, the MMI consists of a GPS antenna, head code display, side displays, microphone, cab loudspeaker and eight saloon speakers. The other coaches' MMIs have displays, emergency communication, eleven loudspeakers etc.

**Scene #3 :** Back to the scene where Dale and Matthew first came across the Vande Bharat (VB) Express at the New Delhi Railway Station while on their way to Agra in Shatabdi Express, they had contemplated to experience India's own Train-set. After immediately returning from Agra, they made plans to travel by VB. While booking tickets on IRCTC, they came across the two available classes: Executive Chair Car and Second Class AC Chair Car. They went for the Executive Class tickets for a ride to the oldest city of India – Varanasi. On the D-day, they were again at the New Delhi Railway Station patiently waiting for the automatic doors of the VB to let them in. They boarded the train along with a handful

Interiors Concept Executive Class

Image courtesy: Sri Sudhanshu Mani





Sri Sudhanshu Mani during the Unveiling of Train-18

Image courtesy: Sri Sudhanshu Mani

others, mostly bound to Kanpur or Prayagraj (Allahabad) – the only two scheduled halts enroute. Dale was delighted with the ambience on offer – comfort and aesthetics going hand in hand with luxurious and spacious golden fabric-covered seats with purple or pink headrests. They made themselves comfortable by depositing their belongings on a glass-bottom luggage rack. They had infotainment screens in front of their seats. The 360-degree rotatable chairs just added to the freedom. Matthew discovered another interesting aspect of the chairs – they were actually recliners with push ahead system just like in cars, the feature helped a lot with provision for adequate leg space. Besides all these seating amenities, the entire train carried an active Wi-Fi connection catering to the needs of passengers on board.

Excited with the scheme of things, Dale began to explore the other coaches of the train. She discovered that the gangway was completely sealed with automatic coach-doors and bright lighting. Dale and Matthew were a bit sceptical about the washrooms. But to their surprise, they found each toilet set very neat, clean and hygienic and fitted with futuristic sanitary ware. Dale made her way upto the second-class chair car and found the seats to be a bit different with no fabric covers. The chair cars had centre tables at the middle of the coach, unlike the Executive ones and the seats were fixed.

India's First Train-set @ ICF

Image courtesy: Sri Sudhanshu Mani



Sri Sudhanshu Mani with his excellent team mates who made this project a grand success...

Two minutes to departure time, the PIS announced the closure of doors. As the Vande Bharat Express flew past smaller towns like Khurja, Aligarh, Hathras, Tundla, Shikohabad, Etawah amidst the serene, green fields of western Uttar Pradesh often dotted with brickfields with smoke effusing chimneys, the hot morning beverage just set up the tone for them. Wide glass windows along with the comfort of the snugly seats timed with refreshments at regular intervals served by courteous staff summed up their journey. When they finally got down at Varanasi, they were mesmerized, thrilled and joyful about their eight-hour ride across 750 Km. While leaving India, they made up their minds for taking ride in the Katra bound Vande Bharat Express during their next visit here. As they giggled their way out of the Varanasi station to explore the ancient city, the VB prepared itself to ferry passengers back to the capital with the **Make In India** logo dazzling and shining bright telling the tale of an epitome of success!

#### Acknowledgments :

- 1) Introductory handbook on train-set by CAMTECH, Gwalior
- 2) Vande Bharat Express(T-18) Maintenance Manual, CAMTECH
- 3) Blogs by Mr. Sudhangshu Mani, the then GM-ICF

We express our sincere, profound and heartfelt gratitude to Mr. Sudhanshu Mani, the former GM of Integral Coach Factory (ICF), for the invaluable inputs and key photographs to this article which have enriched the instant writeup to a great extent.





# Darjeeling Himalayan Railway

## An Epitome of Grace and Engineering Excellence

- Subhadyouti Bose

### Prologue

A casual ramble down the tracks holding your partner's hand amidst the drifting clouds and wet canopies of overhanging trees evoke feelings of togetherness and love. It's the story of nearly all of the mountain railways across the world where nature is cruelly beautiful, where a romantic walk down the rails doesn't reflect the engineering accomplishments that adorn their paths. Mountain railways are considered as extreme feats of modern-day engineering. Laying a track over treacherous terrains with overwhelming altitude makes these railways special and distinct. Our nation boasts of many such instances of engineering marvel – five at least. Amongst the five, three are located in the Himalayan range where the tracks start at nearly sea-level and climb to almost snow-level. The Darjeeling Himalayan Railway (referred to as DHR hereafter), is of particular note among these three for it being the first railway of the nation to be bestowed with the recognition of a UNESCO World Heritage site on the 5<sup>th</sup> of

December, 1999. The other two railways to achieve a similar honour lies with the Nilgiri Mountain Railway (NMR) and the Kalka Shimla Railway (KSR). In the nearly 140 long years of journey of DHR, the centenary celebration was commemorated with the release of a postage stamp in 1982 while the 125<sup>th</sup> anniversary in 2007 was marked with a series of 'Steam on 3 Gauges' charter trains at Siliguri Junction.

### The Early Days

The construction of DHR started in 1879 – making it the oldest mountain railway in India. In the year 1878, Franklin Prestage, an agent of the Eastern Bengal Railway, foresaw the utility of a rail link between the hills of Darjeeling and the plains. His scheme was mainly driven by hard economic considerations viz., the huge difference in the cost of essential commodities between Darjeeling and Siliguri, the need to transship tea for export and the inability of the

existing road to handle the growing traffic. He submitted a scheme for the construction of a two feet gauge railway line from Siliguri to Darjeeling. In a detailed proposal submitted to the Government of Bengal, he pointed out how a railway could substantially reduce the cost of transport between Darjeeling and the plains. For instance, rice, which sold at ₹98 a ton at Siliguri, cost ₹240 at Darjeeling! He argued that the estimated cost of 1,400,000 rupees for the construction of a 2-feet gauge rail-line would not be prohibitive, and locomotives, small but powerful enough to climb steep gradients, could be designed.

Prestage received the final sanction for his project based on the sagacious recommendations of a high level committee appointed by Sir Ashley Eden, the then Lieutenant Governor of Bengal, on the 8<sup>th</sup> April 1879 and formed the Darjeeling Steam Tramway Company. However, the idea of operating the line as a steam tramway was soon abandoned and on 15<sup>th</sup> September, 1881, the company adopted the designation of Darjeeling Himalayan Railway Company (DHR) which remained effective until it was taken over by the Government of free India on 20<sup>th</sup> October, 1948. Throughout that period, Gillanders Arbuthnot & Co., one of the oldest managing houses in Calcutta, handled DHR's financial, legal and purchasing interests.

The 84 kilometer route from Siliguri Town (120m/400ft), in the plains of Bengal to Darjeeling (2075m/6812ft) in the lap of the Himalayas, was inaugurated on the 3<sup>rd</sup> of July, 1881. The altitude gain along the route is massive to say the least – 1955 m between the end points with the highest point being at Ghoom (2257m/7407ft), the highest railway station in India! Not only do these numbers appear staggering, they are also a testament to the fact that the engineers building this particular stretch of railway faced insurmountable odds and yet were able to complete the task in two years for 1,700,000 rupees, a negligible escalation of sorts – something that may be hard to achieve and even believe in the present day.

### The much-awaited trip to Darjeeling

A visit to the DHR has always featured on my priority list and I had the good fortune of fulfilling my dream in the winter of 2017. I was visiting the western part of Sikkim with my friend, Nitish, and had planned this trip a month in advance. I was careful to keep sufficient time to explore the DHR heritage as much as possible, in the short time span that I had. We had reached Darjeeling from Pelling via Jorethang, after a steep uphill climb, on a bright and sunny winter afternoon. I had planned to do most of the local sightseeing on the same day and had kept the following day entirely free for DHR! Therefore, early next morning, after having a quick breakfast, I made my way to the world-famous Darjeeling station. And what a sight it was!! By the time I reached the station, the warm winter Sun had already illuminated the Kanchenjunga range, which appeared to be basking in its



Gearing up for the morning services...

Photo courtesy: Subhadyouti Bose

glow. Without wasting much time, I started taking photos of the station premises as well as rolling stock kept around the station. The station staffs were preparing for the 9:15 AM departure of the joyride service from Darjeeling to Ghoom. Because of this, the station premise was chock-a-block with tourists, mostly Indians and some western. Apart from tourists who had come to enjoy a ride on the steam-powered engine, there were some elderly gentlemen who were also taking photographs of the engines and other rolling stocks. It felt nice to know that there are other people like me who have a keen interest for railway-related stuff. However, more on this a little later....

After admiring the steam-puffing little locomotives that haul tourists and general public (occasionally) from Siliguri to Darjeeling and enjoying spellbinding Himalayan vistas over a hot cup of tea, I peeked at the adjoining locomotive trip shed. Treading cautiously inside the shed, I found locomotives like Mountaineer (road number # 786), Iron Sherpa (road number # 805), as well as a few other unnamed locomotives - the

Century old work-horses resting inside the trip shed

Photo courtesy: Subhadyouti Bose





A busy morning @ Darjeeling Loco Trip Shed

Image courtesy: Anamitra Bose

unsung heroes who go about their work quietly without garnering much attention from anybody except perhaps ferroequinologists like us. By this time, the joyride service was almost ready. The coaches were placed at the platform; the passengers (i.e., the tourists) were ready to board while the loco that was going to haul them was being shunted towards the tiny rake.

Soon, the locomotive arrived at the platform to take charge of the joyride service and enthrall everybody with its poise and grace, definitely a sight to behold for anyone who loves steam-powered trains! As I took position to capture the moments leading up to the scheduled departure of the joyride, I noticed those two elderly gentlemen that I mentioned a little earlier. They definitely looked to be in their 70s and did not have the usual touristy demeanour. Instead, I did see them jump with joy more than once as the locomotive was being shunted towards the platform, a sure sign that they were indeed rail enthusiasts! After capturing a few shots of the locomotive that had now been coupled to the coaches, I decided to have a small chat with them and know more about them.

I went up to the two gentlemen who, by now, had also spotted me taking photographs of rolling stock and other railway paraphernalia which made my job easier to strike up a conversation with them. After a brief exchange of pleasantries between me and my friend and the two gentlemen, I got to know that one of them was from the USA (whose name, unfortunately, I do not remember now!) while the other person hailed from England. The octogenarian Englishman was fit enough to jump at least a foot in air every now and then as the engines tooted to warn people off the tracks! He also handed me his visiting card, through which I was able to remember his name – Mr. John Clemmens, from the Darjeeling Himalayan Railway Society (DHRS), based in England. He also revealed that he comes to Darjeeling every winter around Christmas and spends a few days watching the tiny workhorses doing their jobs. He was happy to meet a fellow ferroequinologist and we took a couple of pictures with



Author with DHRS members @ Darjeeling station

Photo courtesy: Subhadyouti Bose

the mighty Kanchenjunga and the Darjeeling station building completing a majestic background. I must say, never have I met such an ardent steam lover in my life who visits Darjeeling every year without fail just to watch and soak in the ambience created by the steam engines!

### The Route to Darjeeling

In the earlier days, it was a cumbersome process to travel from Calcutta to Darjeeling via Siliguri. Travelers had to board a train from Sealdah station, located in the eastern periphery of the former capital city of the nation. A short four-and-a-half hour ride would then bring the passengers on the banks of the Ganges at Damukdea Ghat, now in Bangladesh. The passengers would then have to disembark and board a ferry for a twenty minute ride that would take them across the Ganges and deposit them at Sara Ghat, nearly twenty one kilometers (or, thirteen miles) from Damukdea Ghat. The nearest major station on the northern bank of the Padma river (local name) is Ishwardi junction. For many years, the railway authorities of those days were trying to bridge the river at this point but without much luck. The reason attributed to the repeated failed attempts was the fact that the river at this location appears more like a sea as well as fact that the shifting pattern of the river causes much erosion of the river banks, which in turn made it very difficult in those days to construct a proper station in the vicinity of the banks, much less a bridge at this location! However, after five years of construction time, the Ganges was finally bridged (stretches almost two kilometers) at this site and was named in the honour of Lord Hardinge – the then Viceroy of India. The architect of this majestic structure that still stands more than a hundred years after its construction was Robert William Gales, who was conferred with a knighthood for achieving this herculean task. The rest of the journey from Sara Ghat to Siliguri via Parbatipur junction and the Chilahati border (present-day Indo-Bangladesh border) would be completed by daybreak. After a

short breakfast stop at Siliguri, travelers would then have to complete the last part of the journey on the two-feet (610 mm) wide narrow-gauge mountain railway to Darjeeling. Compared to the difficulties and the many break-journeys the travelers had to face, the journey till Siliguri from Sealdah is covered in less than ten hours nowadays. Apart from the legendary Darjeeling Mail, this route is also served by the prestigious Shatabdi Express that reaches New Jalpaiguri, a satellite station of Siliguri, in around eight hours.

### Departure from Siliguri

As the morning service from New Jalpaiguri to Darjeeling begins to chug out, one can already feel the cool Himalayan breeze caressing them. Almost the entire route hugs the Hill Cart Road, crossing it as many as 132 times and tackles the associated gradients along the road route although at a few places the tracks drift away from the main road. The line was constructed keeping in mind the transport of tea leaves to the plains and then further towards England and other prominent markets of the British Empire with uphill transport of essential commodities like rice, tea seeds etc. However, these days, most of the tea produce is transported by road, leaving mostly tourists and some local passengers to use this heritage line to Darjeeling. However, the route initially (till August 1880) was upto Kurseong, located 55 kilometers from New Jalpaiguri. It was fully extended upto Darjeeling the following year and ran almost full capacity from here on, transporting both people and cargo. The official dates of opening of various sections under the DHR route to Darjeeling are as follows: Siliguri to Kurseong – 23<sup>rd</sup> August, 1880; Kurseong to Sonada – 1<sup>st</sup> August, 1881; Sonada to Jore Bungalow – 5<sup>th</sup> April, 1881; and the final stretch from Jore Bungalow to Darjeeling on 4<sup>th</sup> July, 1881. In 1885, the line got extended to the Bazaar at Darjeeling from the present station for facilitating goods traffic which was abandoned by 1980.

*Darjeeling Passenger all set to depart from New Jalpaiguri*

*Photo Courtesy: Anjan Roy Chowdhury*



*Siliguri Junction NG Platform*

*Photo courtesy: Rudranil Roy Chowdhury*

### Tackling the gradients

As soon as the hustle and bustle of Siliguri is left behind, the gigantic Himalayas come into view, beginning with the foothills at first. Just 9 kilometers from Siliguri is Sukna, located at the base of the mighty mountains that the little locomotive plans to climb! Situated at an altitude of 1527m (5010 feet), Sukna is the gateway between Siliguri and Darjeeling. Though a small town, it is a source of immense natural beauty. The serene town of Sukna came under the limelight after DHR extended its railway route and built a railway station and museum in Sukna. Some important landmarks around the town are the Forest Department campus, Mahananda Wildlife Sanctuary, the Sukna Cantonment etc. Sukna is surrounded by dense forests of the Terai where elephants, leopards can be found even now. Mahananda and Teesta rivers run through this town. Sukna is probably the only place where you see the wild elephants lazily walking around the civilized areas, fearlessly. An observant traveler would notice a change in vegetation as the train ascends the gradients after Sukna – luxuriant tropical

*Sukna Station & Museum*

*Photo courtesy: DHRs Archive*





Meandering through the greens...

Photo courtesy: Ratrri Sarkar Roy Chowdhury

vegetation giving way to pines and firs and numerous other trees covered with the occasional moss and lichen. The air is crisper, reminiscent of cold mountain breeze and heralds the arrival of cooler climes, soothing many a parched travellers' souls. Right after Sukna is Rongtong – a small hamlet nestled in the lap of nature boasting of its greenery and aesthetic pleasure being located only 18 kilometers from Siliguri Junction and only a few kilometers from Sukna. It is quite often visited by the people residing in the plains and also by the tourists who aim to visit Darjeeling. The tall and mighty Himalayan range, together with verdant tea gardens and larks tuning to the melodious songs, creates a magic of serenity and unmatched thrills. A soft breeze makes the leaves fall on the tracks beside the road which makes it look so ethereal and mesmerizing that one cannot stop from clicking a picture of this mystic landscape. Just after Rongtong, the gradient starts and in order to make the job a little easier for the locomotive, a series of loops were constructed between Sukna and Gayabari. The four zigzag reverses (also known as the 'Z' reverses) help the locomotive climb a series of gradients, each slightly steeper than the other. The reverses are designed in such a manner that the train enters a section and reaches a dead-end following which the guard jumps out and switches the points so that

DHR Toy train @ Rongtong Station

Photo courtesy: DHRS Archive



Welcome to the hills....

Photo courtesy: Rudranil Roy Chowdhury

the train can now push the carriages over the next section, thereby gaining altitude and ascending a particular gradient that may have been difficult to traverse in without the presence of these reverses. A few kilometers after Rongtong, the going gets even more tough for the little iron horse hauling a few coaches up a steep gradient. The local passengers know this mode of transportation up the hill is not the fastest but the locomotive literally chugs its heart out on some of the steepest slopes. Needless to say, the speed does not exceed 16 kilometers per hour (or, 10 miles per hour), but to the weary traveller coming from the hot, humid and dusty plains down below, this is enough! To him, the towering pines and conifers conjure up images of a winter wonderland as Darjeeling is known to be snowed out every few years. Less than an hour after departing from Siliguri, the train has now climbed up steadily across numerous slopes and loops, so much so that the temperature has now dropped at least a degree or two, owing to the change in altitude. The journey between Rongtong and Chunbhatti is even more charming. The hills become even more beautiful and the ridge on the sides become more visible and attractive. From here, the Sepoy Dhara Tea Garden can be clearly seen which is the first of many tea gardens producing Darjeeling Tea and is a part of the list that has procured the

Curving along the Hill Cart Road....

Photo courtesy: Rudranil Roy Chowdhury



rights to use the G.I. (Geographic Indication) tag for Darjeeling Tea on their product. In a straight line distance, Rongtong and Chunbhatti are less than a kilometer apart, but by rail or road, they are separated by 8 kilometers. As mentioned earlier about the loops of DHR and not mentioning a particular loop would be a sacrilegious affair. Yes, it's the Batasia Loop which we will discuss later. But DHR has more interesting anecdotes about its other loops especially the one at Chunbhatti where one can experience a double loop. From Chunbhatti to Tindharia, it was another six kilometers journey through beautiful jungles. This small stretch has two Z-curves in a very short span and this makes the journey even more interesting.

### Tindharia Town and Workshop

Tindharia (840m/2756feet) is an important stop on the route. During the construction of the DHR, a workshop was sanctioned at this location and completed in the year 1881. The town itself was envisaged as a railway town. The location was chosen due to the availability of ample land as well as the fact that the location was more salubrious compared to the heat and grime of Siliguri, which was a major issue for the mostly British employees on the payroll of the DHR, more than a hundred years back. Primarily, this workshop was built towards maintenance of locomotives and other rolling stock operating on the DHR. However, the setting up of a proper workshop started after the turn of the century and it acquired its present state in the year 1915. Unfortunately, with passage of time, Tindharia lost most of its glory after the extension lines constructed by the DHR, namely the Teesta Valley Railway (operating between Siliguri and Kalimpong Road) and the branch line to Kishanganj were closed. In its heydays, the Tindharia Workshop used to employ nearly 700 workers, including officers and peons. From the 1930s, the DHR started to reduce its services on the main line to Darjeeling as well as the branch lines to Kalimpong Road and Kishanganj, though the period of the Second World War saw a dramatic surge in traffic which included transporting military personnel and supplies to the numerous camps around Ghoom and Darjeeling. However, during the same time period, the workshop at Tindharia was

DHR Workshop Layout @ Tindharia

Photo courtesy: Sanjoy Mookerjee



Toy train near Tindharia

Photo courtesy: Sanjoy Mookerjee

being used to manufacture and maintain components for broad gauge railway for elsewhere in India, thus steadily reducing its importance as a dedicated narrow gauge workshop. The cessation of freight operations on the DHR by 1993, acted as a final nail in the coffin, regarding the eminence of this once prestigious workshop. Repairs and maintenance work on the rolling stock began to be undertaken at either Siliguri or Darjeeling, almost nullifying the relevance of the Tindharia workshop. But fortunes have turned around for this esteemed workshop again as it has started maintenance of the entire fleet of locos and carriages of DHR including performing periodic overhauls (POH) in full swing. Kudos to the workshop for keeping the century old machines alive, till date.

The steepest gradient of the entire route from Siliguri to Darjeeling lies between the Tindharia and Gayabari stations. At a particular location, the track needed to climb a particular slope in such a way that a huge loop had to be constructed in order to allow the locomotive and its load of coaches to ascend the loop and tackle the gradient. Technically known as Loop 4 in railway parlance, this loop is also commonly known as Agony Point, perhaps named so because of the agony the locomotive suffers while climbing this loop. The very fact that a small steam engine back then and a diesel operated one today is able to traverse this loop

The Agony Point

Photo courtesy: DHRS Archive





on its own is evidence of the skill of the engineers who built this railway. In any hill railway, tunnels are used as a means to bypass through mountainous terrain to reach the other side and are a common feature. However, surprisingly enough, there are no tunnels on the DHR! This lets the traveler enjoy uninterrupted views of the valley below and the snowcapped mountains above along with the unique experience of witnessing the trains ascending and descending a series of hills.



Gayabari station

Photo courtesy: NFR website

After Tindharia, comes Gayabari station which was built between 1879 and 1881. Over the last decades, several major landslides took place in the stretch between Gayabari and Pagla Jhora (a perennial issue), severing all connectivity to the plains both by road and rail. These landslides repeatedly affected the normal operations of DHR. However, recently, the way engineers are able to tame the difficult and unreliable stretch of land at Pagla Jhora is commendable indeed.

Steaming on towards Darjeeling—

Photo courtesy: Subhadyouti Bose



Photo courtesy: Rudranil Roy Chowdhury

### Kurseong town

Meanwhile, our tiny loco has huffed and puffed its way up to Kurseong (1477m/4846feet); one of the major halts enroute Darjeeling. The station is designed in such a way that it necessitates a rake reversal once it reaches Kurseong from either end. This is definitely a boon for ferroequinologists as it gives us plenty of time to look around the historic station that was once housed inside Clarendon Hotel before a proper station building was constructed. In fact, the headquarters of DHR are now situated at Elysia Palace in Kurseong, after being moved from Darjeeling in 1915. For the weary British officer, a hundred years back and a traveler headed to Darjeeling, Kurseong acts as a soothing balm to frayed tempers and nerves. In pre-independence days, many people from Calcutta and its surrounding parts used to head towards Kurseong when the doctor prescribed them to move to a place with a more favourable climate compared to the hot saucepan like plains of Bengal. Since then, many well to do businessmen and government officers purchased land in and around Kurseong and used to come here to escape the summer heat. Some, like me, also prefer Kurseong to Darjeeling due to the solitude that it provides as compared to the hullabaloo of the ever busy Darjeeling town. Those staying here can not only enjoy fantastic views of the Kanchenjunga but also engage in some tea-tasting, as the region around Kurseong plays host to numerous tea gardens owing to the altitude, perfect climate and availability of fertile soil that helps to grow the Darjeeling variety that has earned a fame for itself around the world!

### Kissing the clouds at Ghoom

Around twenty minutes later, the locomotive has been reversed and attached with the rake and stands ready to depart from Kurseong towards its final destination, Darjeeling. But before it can reach the last stop, it needs to cross one last hurdle, the highest point on the route, Ghoom. Perched high at an elevation of 2257m (or, 7407 feet) from



Huffs and puffs....

Photo courtesy: DHRS Archive

the sea level and just six kilometers short of Darjeeling, residents of Ghoom literally live above the clouds. Between Siliguri and Ghoom the altitude gain is nearly 7000 feet, thereby exemplifying the toil of those tiny NDMs (and steam locos earlier) in order to climb this dizzying height. The railway station at Ghoom enjoys the tag of the 'Highest Heritage Railway Station in the World.' There is also a museum (opened in November 2000) present in the station premises that houses interesting railway artifacts, some of which date back to almost the inception of the route! The present entrance to the museum was once a part of a small locomotive shed (possibly a satellite shed of the Darjeeling shed) as well as a warehouse. Unfortunately, both the steam shed as well as the godown were a part of the 1999 UNESCO listing which were unceremoniously demolished just a year later after getting the coveted recognition from UNESCO. If only we paid a little more attention towards preserving invaluable heritage of not just DHR but this country as a whole! Also present at Ghoom is a locomotive fondly called as Baby Sivok, is a prized possession of the Ghoom museum.

Ghoom Station Complex

Photo courtesy: Subhadyouti Bose



Baby Sivok

Photo courtesy: Subhadyouti Bose

Prior to commissioning of the museum at Ghoom, Baby Sivok was plinthed outside Siliguri railway station from 1957 upto 1999, after which it was refurbished at the Tindharia Workshop and has been on display at Ghoom ever since. Although the name plate attached to a side of the engine has the year 1881 inscribed on it, it is not the exact year the locomotive was manufactured. As per sources, it is said to have been turned out much later, in the year 1913, by Orenstein and Koppel in Germany. However, a small metal board placed below the headlights indicates that the loco was built in England by M/s Sharp, Stewart and Company in 1881, thereby creating some uncertainty over its year of manufacture. Moreover, Baby Sivok was used during the construction phase of the Teesta Valley branch line, possibly gaining its moniker from the Sivok railway station situated on the banks of the Teesta river.

As the toy train continues its journey towards Darjeeling from Ghoom, a distance of approximately six kilometers, the downhill gradient helped the train to gain little speed this

All set to start-off towards the last stop from Ghoom...

Photo courtesy: Anamitra Bose





Batasia Loop

Photo courtesy: Anamitra Bose

time. But this kept me thinking, about the amount of effort the little locomotives have to exert in order to climb the steep slope on their way towards Ghoom. The nearly 600 feet elevation difference between Darjeeling and Ghoom may not sound much, but for a small locomotive, it's an uphill task of dragging two or more coaches trailing it. This is the very reason that the Batasia Loop (as mentioned earlier), located just a kilometer outside Ghoom, was constructed in the year 1919. With this, a steep grade of 1 in 20 between Ghoom and Darjeeling was eliminated and it is truly one of the many engineering landmarks of this route. On a clear day, one can enjoy both the DHR as well as the majestic Kanchenjunga and perhaps a glimpse of the highest mountain in the world (if one is lucky enough) as well in the background. Also, at the loop is a war memorial dedicated to the brave Gurkha soldiers who laid down their lives while protecting India and her freedom. The Gurkha soldiers hail from these parts of the hills as well as from neighbouring Nepal. The war memorial was opened in the year 1995. In the middle of the loop is a garden, the centre of which has a Cenotaph and a statue of a soldier paying obeisance to his fallen comrades.

### The Branch lines of DHR

#### i) Teesta Valley Railway

Apart from the main route to Darjeeling from Siliguri via Tindharia and Kurseong, a spur existed from Siliguri (present-day Siliguri Town railway station) to a place called Kalimpong Road (also known as GielleKhola which was located 3 kilometers or 2 miles from the present-day Teesta Bazaar) that traversed thick tropical forests and went past the Teesta river on its way to the terminus station. This route was in existence from 1915 to 1951 and its rather abrupt closure was due to severe flooding along the route in the monsoon of 1950. Snapshots of a timetable from 1943 show that the route was then served by a solitary service that originated from Siliguri at 6:40 AM and reached Kalimpong Road at 9:55 AM after crossing seven stations en route, viz, Siliguri Road Junction, Sivok Forest Sidings, Sivok, 13.5 miles, Kalijhora, Rilly Sidings and Riyang (for Mangpoo)



Steam Joy ride @ Batasia Loop

Photo courtesy: Anamitra Bose

before turning back towards Siliguri at 4:00 PM, reaching Siliguri four-and-half hours later at 8:30 PM, covering a distance of around 46 kilometers (29 miles).

The branch line to Kalimpong Road was planned to be extended upto Kalimpong, which could not materialize due to terrain issues beyond the terminating point. Passengers bound for Kalimpong were able to avail a ropeway service after disembarking at Kalimpong Road.

In an effort to rejuvenate the now abandoned route, railway authorities have decided to re-lay the tracks and connect Sikkim to the rest of India by rail, by broad gauge this time. The foundation stone of this project was laid by the then vice president of India, Mohammad Hamid Ansari, on 30th October, 2009. To accomplish this task, a new branch line is now proposed to start from Sivok station (Darjeeling district of West Bengal) located on the left bank of the Teesta and connect the town of Rangpo located in Sikkim (East Sikkim district), just beyond the border with West Bengal. The length of the new alignment is around 45 kilometers (14 miles). Several tunnels, 14 to be exact and bridges (14 major and 8 minor) are proposed to be constructed in an earthquake-prone region regarding which the local villagers are a bit apprehensive. Most of the route alignment (nearly 39 kilometers) is designed to be under tunnels which would even house some stations within them. The four stations that have been proposed between Sivok and Rangpo are Riyang, GielleKhola, Teesta Bazar and Melli. The project that was initially planned to be completed in five years has now exceeded its deadline by seven more years owing to the difficult terrain through which the line is being constructed as well as protests from villagers who are unwilling to part with their land for this crucial railway project that is ultimately planned to connect Nathu La (61 kilometers/18.5 miles from Gangtok) located on the border with China.

#### ii) Branch line to Kishenganj

Besides the extension to Kalimpong Road, a separate branch line was constructed in 1915 that connected Siliguri in West Bengal with Kishenganj in Bihar. The Kishenganj route was



Siliguri MG Platform

Photo courtesy: Rudranil Roy Chowdhury

initially built in NG alignment and provided a connection with Barsoi and Katihar, which was converted to MG by the late 1940s. After the conversion of the old NG line to Kishenganj, the MG alignment was slightly altered such that the tracks stopped merging with the main line at Panchanai Junction and directly entered the then newly created Siliguri Junction. Due to this, trains bound for Assam had to reverse at Siliguri Junction before continuing their journey. In addition to this, the reversal also solved the problem of "directional asymmetry" that the Assam Railway suffered from. The Kishenganj line used to branch out from the now non-existent station of Panchanai Junction, located around 6 kilometers (or, 4 miles) from Siliguri junction, which is the present-day Siliguri Town station. Today's Siliguri Junction is located at a new location and was built in connection with the Assam Rail Link in the late 1940s. For all intents and purposes, the present-day Siliguri Town was the main station for Siliguri and was known as Siliguri junction.

The distance between Kishenganj and Siliguri was around 112 kilometers (70 miles) and had 22 big and small stations en route, such as, Matigara, Bagdogra, Naksalbari in West Bengal, followed by Thakurganj in Bihar, Aluabari Road (back in West Bengal), Dhantola and Panjipara among others. As per the 1943 timetable referred to above, the route was served by three daily services, with one of them connecting Siliguri to Kishenganj that left Siliguri at 8:00 AM and reached Kishenganj at 2:17 PM. Along with this service, there were two other services, one of which originated at Thakurganj at 6 in the morning before reaching Kishenganj at 8:50 AM while the other one departed Siliguri at 5:20 in the evening and was a passenger service that ran only upto Thakurganj, reaching its destination at 8:35 PM. On the other hand, the direct service to Siliguri departed Kishenganj at 10:40 AM and reached Siliguri at 5 in the evening. This was followed by the curtailed service to Thakurganj that departed at 5:25 PM which reached its destination at 8:15 PM.

### Connecting the rest of the country

The Siliguri-Kishenganj DHR branch line used to provide connectivity to passengers headed further south towards Katihar and Barsoi and onwards to Manihari Ghat, thereby establishing a connection with areas south of the Ganges. By 1949, as the Assam Rail Link began to be built, this line served as an alternate link to the north-east, since the main route to Calcutta via Haldibari, Parbatipur went to East Pakistan after independence and subsequently, Bangladesh. Post conversion of the line from NG to MG in 1948, the control of the line was transferred from DHR to the Assam Railway (which earlier belonged to the Bengal and Assam Railway). In order to re-connect the isolated north-east frontier with the rest of the country, a new meter gauge line was constructed via Cooch Behar, Alipurduar and Bongaigaon after bridging vast rivers of the Dooars like the Teesta, Jaldhaka, Torsha and Sankosh. This new route was formally opened to the public on 26<sup>th</sup> January, 1950 and just two years later in 1952, Assam Railway and DHR (including the Oudh and Tirhut Railway) became a constituent of the newly created zone of North Eastern Railway on 14<sup>th</sup> January of that year. 6 years later, another zone was carved out of the older one – the present-day North East Frontier Railway, on the 15<sup>th</sup> January, 1958.

### The legacy of the locos

The tougher terrains and steeper grades of the DHR has always had a paramount impact on the deciding factor which governs the class and genre of locomotives to be deployed to run the line. The earliest locomotives built for the route were the 'No. 1' Class ones built in 1880 by M/S Sharp, Stewart & Company – a UK based firm. A total number of eight locomotives were acquired which unfortunately proved to be incapable of working the line. Hence, a new breed of engines became the need of the hour and they came up with the 'A' Class iron horses. These locos proved to be far more

'A' class locomotive @ NRM

Photo courtesy: Samsubhra Das





'B' Class locomotive @ DHR

Photo courtesy: Subhadyouti Bose

successful and eight of them were built in between 1882 and 1883. A saddle tank and a coal bunker were added soon after. Within years of opening, DHR was facing a huge leap in freight services owing to the ever-growing demand. Upgradation of tracks and locomotives looked imminent to cater to the spiraling needs. Thus, tracks were revamped and the 'A' Class locomotives were augmented with larger 'B' Classes which are still in use today. The same makers introduced this longer, more powerful locomotive although still with the same distinctive 0-4-0 arrangement – well tank plus saddle tank, outside valve gear, long boiler and bunker in front of the cab. The first of the 'B' Classes was delivered in 1889. These locos were initially named as No. 3 Class but soon rechristened to 'B' Class. The design proved to be a big success which paved the way for gradual phase out of all the 'A' Classes, barring two, by 1910. The last member of the 'A' Class was withdrawn from service in 1954. The success of the 'B' Class prompted the authorities to induct further batches which included the ones built by the Baldwin Locomotive Works (BLW) of Philadelphia, Pennsylvania, USA – one of the largest and most influential manufacturers

Iconic 'B' class of DHR all steamed up @ Darjeeling

Photo courtesy: Anamitra Bose



DHR 'B' class steam locomotives lined up @ Siliguri NG Trip Shed Photo courtesy: Rudranil Roy Chowdhury

of steam railroad locomotives in the world, as these continued to get manufactured until 1927. M/s Sharp, Stewart & Co. which later became the North British Locomotive Company along with the BLW, USA and the Tindharia Workshop, turned out a total number of 34 'B' Classes. The trademark design did not witness much change over the ages though gradual modifications were carried out from time to time for enhancement of performance. Later in 2003-04, the Golden Rock Railway Workshop at Tiruchirappalli (formerly Trichy) assembled two locos utilizing some parts from other withdrawn 'B' Classes.

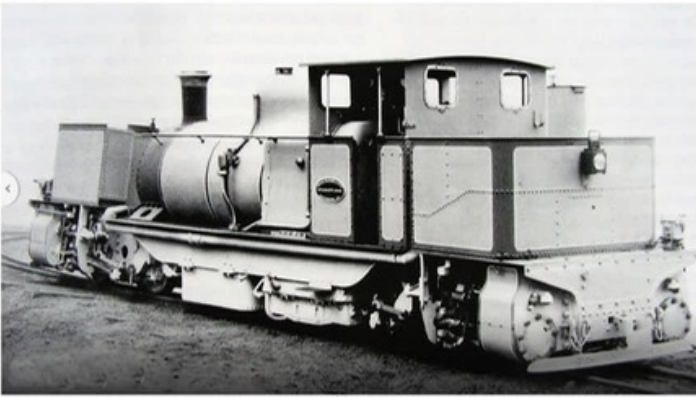
In 1914, the North British Locomotive Company delivered two 'C' Class Pacific 4-6-2 locomotives to meet the requirement for the company's new branch line to Kishanganj which was completely different to DHR's main line, running across the much less demanding terrains with fewer curves and no steep gradients.

Going back to the scenes of 1911, the unique 'D' Class 0-4-4-0 Beyer-Garratt was inducted into service. It was specially designed for the hills and was said to be capable of towing the loads of two 'B' Classes. But the 'D' Class did not find much success and could never stand the test of time like the 'B' Class. Its haulage capacity exceeded the length of the

DHR 'C' class locomotive for Kishanganj Branch

Photo courtesy: DHRS Archive





Garratt - the only 'D' class loco of DHR

Photo courtesy: DHRS Archive

Reverse (Zig-zag) head shunts and sidings and once hastened a wagon off its rails while negotiating a tight curve. It was thus put to service on the Kishenganj branch, though its gluttony for coal made it rather non-viable which ultimately ended its run on the 30<sup>th</sup> November, 1954.

The first brush with Diesel locomotive in DHR dates back to 1941 when the management placed an order for a Bo-Bo diesel locomotive from the Walford Transport of Calcutta which had the experience and expertise of manufacturing smaller diesel locomotives for other narrow-gauges of the country. Those modern looking, 165 HP, six-cylinder, General Motors engine equipped, locomotive was fitted with Westinghouse air brakes. But lack of adhesion during trials became a bane for the tiny workhorse. The power to weight ratio along with the mechanical gearbox of the loco could not live upto the demands of a steeper terrain as it could only haul a couple of coaches on a dry track. Relentless trials and subsequent modifications followed until 1945 but desired results could not be achieved. Ultimately, in 1950, the locomotive was abandoned and returned to Calcutta.

Experiments with locomotives were further carried on within DHR and this time it was more about the element of style rather than substance as a 'B' Class locomotive, No. 28 to be specific, was rebuilt as a 'streamliner' taking inspiration from some of the mainline express locomotives from the 1930s.

DHR Walford Diesel Locomotive

Photo courtesy: DHRS Archive



The streamliner loco @ DHR

Photo courtesy: DHRS Archive

The very concept of a 'streamliner' here was thrown out of gear as any gain of momentum from the reducing air resistance at a snail's pace of 25 kmph was anything but infinitesimal and inconsequential. Thus, it met the fate it was designed to. The dream of running a 'streamliner' fell flat on its face in two years' time.

With the passage of time, steams began to get obliterated from the scene and their place was taken up by the diesels – this phenomenon was no exception for the smaller gauges of the nation as well. Replacing the highly successful 'B' Class steams with a modern alternative was quickly gaining ground. Notwithstanding the previous setback with the Walford diesels in DHR, Indian Railways dug deep to find a suitable option. That's where the NDM6 Class diesel locomotives came to the scene. Introduced in 2000s, these locos were built by the Suri and Nayar (SAN) Engineering & Locomotive Co. – a Bangalore based firm. The locos are 4-wheeled, 2-axled, air-braked units, weighing about 17.5 tonnes each with Suri and Nayar Voith hydraulic (model L2r2zU2) transmission with 2-stage reduction in final drive gearbox and fitted with a 6-cylinder Kirloskar-Cummins NTA

NDM6 class Diesel loco of DHR

Photo courtesy: Rudranil Roy Chowdhury





A diesel hauled DHR Toy train @ Batasia Loop

Photo courtesy: Subhadyouti Bose

855L engine, having 335 HP continuous output. Besides, they are capable of achieving a maximum speed of 30 kmph – a marked improvement from the steams in use. Such locos were first used in the Matheran Light Railway (MLR). The first two SAN made locos that were used in DHR were supplemented by another pair after getting transferred from Matheran in 2006. This loco interchange between MLR and DHR has scripted history between the two farthest lying hill railways of the nation sharing the same gauge. Earlier, in 2001, when MLR had decided to bring back the old age charm of steams in the lines of its counterparts, DHR handed over a 'B' Class, viz. No. 794 to Matheran for the said purpose. By 2016, another two locos joined the diesel fleet of DHR by virtue of direct allotments. This class of locomotive proved to be immensely successful and now operate almost all the services including some of the 'Joy Rides' leaving the steam locos restricted to the 'charter' services only.

#### Problems that have plagued DHR over the years

Coming back to DHR, once the Batasia Loop has been safely negotiated and done with, Darjeeling remains just a few

DHR 'B' class @ Neral Loco Shed

Photo courtesy: Somsuhra Das



DHR Toy train near Ghoom

Photo courtesy: Subhadyouti Bose

kilometers away on a downward incline that gives some respite to the now panting and tired locomotive. On this short stretch, the brave little locomotive knows it is really close to home and will finally get a chance to cool its heels, listen to other locos present at the shed and discuss about how their day was and admire the magnificent Himalayan range that looks to be within striking distance from the vantage point at the Darjeeling loco shed. However, the going has never been easy for DHR since its inception. There have been numerous instances when normal life for DHR had been thrown out of gear due to reasons outside its purview of control. As for example, a series of earthquakes have wreaked havoc over the entire region, starting from the 1897 Assam earthquake (magnitude of 8 on the Richter scale), followed by one in 1934 in Bihar (magnitude of 7 on the Richter scale) and the Sikkim earthquake of 2011 (magnitude of 6.9 on the Richter scale) whose effects were distinctly felt in and around Darjeeling as well. Since Darjeeling sits on an active zone where earthquakes and tremors are felt quite frequently, these incidents will continue to happen in future

Landslide near Pagla Jhora

Photo courtesy: The Economic Times



as well but the authorities need to take pre-emptive action and possibly need to retrofit some structures that are likely to be damaged in the event of a major earthquake in future. Apart from tremors, extreme weather events like cyclones and excess rainfall have also hit the region hard. In 1899, a severe cyclonic storm hit Darjeeling that caused widespread rain and also caused a major landslide that caused a lot of damage to DHR property. More recently, in 2009, another storm hit the hilltop town that forced the closure of the line for three months. However, this spurred major repairs to the station building as well as the loco shed. Another event the following year caused a landslide near Pagla Jhora during that year's monsoon season which caused the section between New Jalpaiguri and Kurseong to close for a few weeks.

Tindharia is another location that has been constantly affected by bad weather and geological disturbances. In the monsoon of 2011, excessive rainfall had caused a major landslide that disturbed the stretch where the tracks overlapped with the Hill Cart Road. It took several weeks to repair this portion of the route and bring the DHR service back on track. Yet again in 2012, severe monsoonal rains caused damage to the Tindharia workshop this time around. This forced the authorities to transport some engines and coaches to Darjeeling by road in order to run an extra joyride service as well as allow the Kurseong-Darjeeling daily passenger service to resume. The damage that occurred in 2012 forced the engineers to change the alignment at Tindharia in 2013, which enabled a curtailed service to operate upto Gayabari in January of 2014. After a new loop was constructed at Mahanadi station on March 2014, services were able to run upto Kurseong.

As if all such external disturbances were not enough, DHR also suffered from political unrest in the area caused by Gorkhaland protestors while demanding statehood. Time and again such protestors have blocked normal train services and have gone to the extent of damaging heritage buildings and other DHR property. One such act of vandalism by protestors set fire to the historic Sonada, Gayabari and Kurseong stations, which forced DHR to close the line from June to December (a time of peak tourism and revenue generation) of that year. It was estimated that DHR suffered a loss of nearly ₹3 crores as many tourists cancelled their advance reservations and DHR had to refund them. Moreover, a huge sum of money had to be spent on the renovation of the damaged portion (including the historic station buildings) of the three stations mentioned above. Such cowardly acts not only cause DHR to incur huge losses but also put the country on the whole to shame in front of the international community, especially UNESCO, who have expressed concern regarding the unfortunate incidents of violence and arson on DHR property. The World Heritage Centre (WHC), on behalf of UNESCO, has expressed displeasure over the events and has urged the government to protect such

priceless heritage and prevent any such attacks of same nature in future.

In spite of such myriad problems, both natural and man-made, that DHR has been facing since inception, it has risen like a phoenix from its ashes every single time, and I hope that it continues to do the same for another hundred years and more.

### Epilogue

The traveller after spending over seven hours on a train must be feeling quite tired by now. But, as soon as he steps off the train and onto the platform and sees Kanchenjunga at an arm's length and breathes the fresh mountain air, would definitely feel as if his tiredness and fatigue has vanished into the thin mountain air! One cannot help but admire and bow down to the ingenuity of the British engineers and all the workers who were involved in the design and construction of this mountain railway, considered a work of art by many. Connoisseurs of railway heritage, like myself, continue to live with expectations that this line shall continue to operate till eternity and its glorious history preserved for posterity. Pressing problems like political chaos, annual natural calamities like severe occasional downpours and its associated issues like landslips, washouts and the occasional earthquake have become chronic and also the fact that the younger generation does not quite connect with the DHR the way it should have been, rings alarm bells for the survival of this small wonder. If the administration remains committed to the legacy bequeathed to us by the pioneers of railways in India and, if the present generation is made to realize the essence and value of heritage that is associated with DHR, then it will go on chugging along the steep slopes of the Himalayas and sustain the romanticism that is associated with railways and hills, a joy that is indescribable to those who are yet to enjoy it through their own senses!

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Darjeeling Station

Photo courtesy: Subhadyouti Bose





# Machine, Mist and Mountain

**Narayan Das**

Analytical minds simply cannot understand the grace of pure and irrational infatuations. Nor can they discern the romance of Darjeeling Himalayan Railway (DHR), a secret courtship between the lofty mountains and the feats of engineering, between unconquerable nature and the British enterprise. This very romance once not only changed the face of Darjeeling and not only made it look different, but reorganised the way people here thought, lived and conquered the misty mountain. Intriguing fact is that after the DHR was carried to Darjeeling the real estate business boomed and within three years the number of Europeans houses more than doubled. An unconfirmed tale tells that two property agencies in Calcutta started giving paid consultancy in the matter of procurement of land here exclusively for the Europeans.

It is the weather of Darjeeling that contributed to the enigmatic, romantic existence of DHR. Generally from May onwards, one can see from a distance the puffs of fog climb up the ravines and gorges to obliterate the picturesque views until they extend their tentacles over the whole hill station like a grey dust cover. Then the coils of vapour get condensed and starts falling down eventually. Day in and

day out, it continues to drizzle through murky fog, turning everything wet and dripping and casting a thin film of moisture over every object. One will surely not miss the rain-drenched trains stranded at the stations, with their whole body glisteningly pebbled with bright water drops.

With the retreat of Monsoon, tourists again start to arrive in droves and the Queen of the Hill springs to life from the temporary solitude. Again, the ribbons of smoke start billowing out from the 'Toy' trains in greater frequency. Again, the tourists taxis around Darjeeling station with 'SIGHT SEEN' board are seen to spring into action. Again, the small carriages (steam engines pull two bogeys while the diesel versions draw 3 or 4) begin to traverse between the densely, irregularly grown cluster of tenements of different shape and size and the unending flow of vehicles. The band of young, animated, tech-savvy tourists are seen peeping through the windows to capture pictures which they will boastfully post on their social media pages. They hate to lose an opportunity for an ostentatious profile. Technology is, after all, changing exponentially and so is the concept of glitz and glamour. Some others, though less enthusiastic of technological expression, stare with amazement at the



Image provided by author.

unfamiliar surroundings and the profusion of beauty outside. The oldies on the train still talk about the song sequence from the Bollywood hit *Aradhana*, shot on the Hill Cart Road along the DHR track, where Rajesh Khanna, from a hoodless jeep, serenades Sharmila Tagore sitting at toy train's window – with “*Mere sapnoki rani kab ayegi tu*”. The ecstasy reaches its peak when it reaches Batasia Loop.

Historically, Batasia (meaning in local language - *airy space*) Loop was planned to neutralize the effect of a steep gradient. The entire area looks like an elevated valley consisting of about 50000 square feet that provide a 360 degree view of the snow-capped peaks of the Eastern Himalayas, including the majestic Kanchenjunga. The place also houses a war memorial at the centre and a beautiful garden and the railway track moves in a circular motion around the garden. The trains halt at the loop for about 15 minutes and the throng of awe-struck, mesmerised passengers rush out to their dream spot without forgetting their tools of photography. The loop has witnessed a number of non-movie remakes by the passionate and pre-determined couples of another Hindi blockbuster *Dilwale Dulhaniya Le Jayenge* in which Kajol, apparently oblivious of the inquisitive surroundings, struggled to clutch the hand of Shah Rukh Khan who was standing at the door of a train compartment. Such irresistible inclinations of different sorts, however, do not thwart the enjoyment of nature at a distance that rules



Image courtesy: Anamitra Bose

the onlookers and provides serious occupation for the painter's brush, the photographer's camera and the poet's pen.

During March, the mountains turn bright, resplendent green. Rhododendrons, Magnolias start blooming against blue skies and the mighty Kanchenjunga glows in the horizon all day long. The carriages again start meandering in greater numbers with train-load of elated tourist. The evening passengers of the train would not miss the shimmering line of the road; tiny lights of the moving vehicles along the dark slope, the dim twinkling light of the distant villages will appear to them as luminous fireflies, swarming around the scented foliage.

No attempt can afford to meaningfully and interestingly describe the splendour of the DHR without digging into the history of the British Raj and the numerous contrasting stories and the deeply etched reminiscences—sublime and sordid, humourous and rueful. Taking the railway line from the plains of Siliguri to an elevation of more than 7000 feet above the sea level was not a cakewalk in 1879, when the very proposal was accepted. Gillanders, Arbuthnot and Company was selected to construct the Darjeeling Steam Tramway line (the name was subsequently changed to Darjeeling Himalayan Railway Company) which spans about 89 KM. It is noteworthy that the construction of mountain railway was a remarkable innovation in India. Low cost construction and safety of the line were the matters of utmost consideration at time. These essentials were secured by utilizing the existing Hill Cart Road due to which it was termed as a *Tramway* initially.

The great saga of the DHR cannot be said to be complete without the stories of the grandiloquent journeys of the Viceroy to Darjeeling. The imperial life of the Viceroy was nothing short of fascinating and intimidating. The opulent and extravagant lives they lived could be a wild dream for any king or queen under the British colonies. A single hunting expedition would require 1500 bearers to say the least. Whenever a viceroy would proceed to a summer retreat, he was followed by all the important officials that run the country. For example, When Lord Amherst moved to



Image courtesy: Sanjit Nandi (DHR)

Shimla in the summer of 1827, thousands of local hill men were conscripted to carry luggage of the Viceroy and his entourage and render menial services and, interestingly, the figure would not reflect the services of hundreds of horses, elephants as well as their caretakers that were pressed into service.

It is, however, not well documented as to how many officials and servants and how much baggage accompanied Viceroy Lord Lytton's 1880 trip to Darjeeling. By then, the railway line has been laid up from Siliguri to Tindharia and Lord Lytton was to inaugurate it. It was assumed to be the honour (or burden!) of Tindharia's people to greet and salute the Viceroy of India. All the people in and around the villages were instructed to remain present at the railway station in their traditional attires and with their musical instruments. Imperial orders were issued to assemble early in the morning and to shout slogans like "Long live Queen Victoria", "Long live Lord Lytton", lining along both sides of the road, and no one was to head homewards till the Viceroy passed through. The semi-metalled road was spotlessly cleaned and magnificent arches were erected at directly visible points with welcome notes for the Viceroy. As with other Viceroys, Lord Lytton and his entourage had too much luggage for his trip to Darjeeling. It was a satirical coincidence that the overburdened little loco named 'Tiny' (same loco was used during the construction of the line by the contractors). Naturally, from the very beginning 'Tiny' faced a tremendous challenge and after a short uphill journey it accepted defeat and surrendered. As a cumbersome result, people and properties had to be offloaded and scores of porters, bullock carts and horses had to be procured on an emergency basis for the onward progress of the offloaded folk and freight. Anyway, the official and private accounts of the time, however, conveniently evaded the issue that the engine (or, the people of India) could not manage to haul the Viceroy and his people and possessions (or, unnecessary imperial burdens). Meanwhile, the unfortunate local folks, stranded on the road, hungry and tired, had their opportunity to

scream their slogans only in the afternoon. The slogans brought an immense joy to them, not because they were bestowed with an opportunity, but because the pandemonium is over, and they could go to home and get on with their own business.

Incredible Stories of DHR are numerous – some of them are written, some of them are legends, verbally carried forward to the next generations, while some disappears into the darkness of oblivion. The locomotives, carriages, tracks may have been out-dated, but the appeal is eternal. This idyllic, nostalgic charm perhaps brought it the World Heritage Site status in 1999 by UNESCO. In an unfortunate recent development, however, UNESCO questioned the state of conservation of the DHR and the recurrent occurrence of current questionable maintenance may lead to withdrawing of the World Heritage tag from one of the oldest railway system of the world. At the time of inscription, DHR ran through lush green forests, wonderful loops with wide spaces on the both sides of the track, and the journey commanded an unobstructed view of the distant mountains. 'Insufficient maintenance', volatile political situations, serious encroachment on regular basis, mindless, unplanned dumping of wastes and lack of specially trained staff may be the reason for this sad state of affairs. Does the increasing irrelevance have led to the diminishing heritage value? In an age, when the construction of bullet train routes is going on in full swing, has such a narrow gauge, low speed railway system lost its charm? Or, is it a matter of general lack of concern as it is no longer a socio-economic lifeline in the Darjeeling hills? Can we afford to lose the prestigious World Heritage status and face embarrassment before the world? Don't we need a proper implementation of a comprehensive conservation management system to save this 140 year old heritage? Such questions spring up. The answers lie in the womb of the future.

Cover photo and this image provided by the author.





# The DHRS Story

**Paul Whittle**

## **The Story Begins**

With its current world-wide fame it is now hard to believe that less than thirty years ago the DHR faced a very uncertain future. It had been taking a battering from the annual monsoons and hardly a year passed without sections of the permanent way being devastated with major disruption to the service. Investment had been lacking and the rolling stock was in very poor condition. Indeed, three of the venerable 'B' Class locos were put up for disposal, although widespread criticism led to the sale being cancelled.

In 1994, concerned enthusiasts and local residents (led by Sherab Tenduf, owner of the famous Windamere Hotel) met in Darjeeling to discuss a strategy that would enable Indian Railways to see a viable future for the line as a living museum. The direct result was the formation of the DHR Heritage Foundation and a network of interested groups and individuals known as The Friends of the DHR.

Against this background Indian Railways recognised the

potential of the line and committed to its future. Indeed, in June 1997, representatives from the Ministries of Railways and Tourism came to Britain to gain first-hand experience of the success of preserved heritage railways. Their programme included a visit to the narrow gauge Ffestiniog Railway, the original inspiration for the construction of the DHR. By coincidence it was only months later that the Darjeeling Himalayan Railway Society (DHRS) was founded in London by David Barrie, still the Society's Chairman today.

Just two years later, the DHR was given the ultimate accolade of being designated a UNESCO World Heritage Site - the very first industrial WHS in South East Asia and only the second railway in the world to be so recognised.

## **The Story Today**

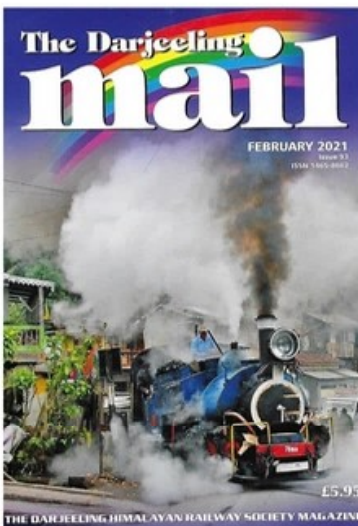
With over 600 members in more than twenty countries, the DHRS is truly international. From the outset, our stated mission has been "To promote awareness of, interest in, and support for the Darjeeling Himalayan Railway". Naturally we



David Barrie, Chairman DHRS and Mathew John, Secretary Railway Board signing MOU on 30th Sept 2007.

do that in friendly liaison with Indian Railways, both with the Heritage Directorate in Delhi and with senior management in Northeast Frontier Railway (NFR). Underpinning the relationship is a Memorandum of Understanding (MoU) signed in London in 2007 by the Chairman, DHRS and the then Secretary, Railway Board.

Other key rail relationships are our twinning with the Indian Steam Railway Society (ISRS) and our links with the rapidly expanding Rail Enthusiasts' Society (RES). In addition, we are pleased to be supporting the Indian Railfans Club for their DHR-themed conference at Siliguri in early 2022.



#### The Darjeeling Mail

On formation of the DHRS in late 1997, establishing a high-quality members' magazine was seen as a clear priority and the first, appropriately named, issue was published in February 1998. Mixing current news reports with articles about the DHR and the Darjeeling area, the much-admired magazine will shortly reach its centennial issue – and remarkably still under the expert eye of its original editor and designer David Charlesworth some 23 years later!

#### DHR India Support Group

Based in Siliguri and founded in 2001 by the late Rajendra Baid, a successful and respected local businessman, the Group's valuable support for the DHR continues under the leadership and commitment of Vivek Baid.



Golden Rock built 'B' Class No 01 'Tindharia' stands at Siliguri Junction on return from Rangtong. Image courtesy: Martyn Bane.

#### Photo Archive

Thanks to contributions/bequests from members and many others, the Society has access to what is most likely the largest collection of DHR images in the world. We continue to provide help for organisations such as the BBC, film producers, authors and newspapers, the National Rail Museum in Delhi and for the recent Indian Railways Google Arts and Culture project.

#### Darjeeling Railway Community Support (DRCS)

Founded in 2007 this is a UK registered charity with strong links to the DHRS. It provides a wide variety of support for needy communities along the DHR route, ranging from equipment and funds for improving local schools to relieving hardship during the current Covid pandemic. Its web site is at: [www.darjeelingrail.wixsite.com/drcs](http://www.darjeelingrail.wixsite.com/drcs)

#### Environmental Support

Despite the focus on rail heritage, the DHRS has never been solely a 'railway society'. For many years, we have provided funding to the Darjeeling-based Federation of Societies for Environmental Protection (FOSEP) for planting schemes along the DHR and a wide range of other environment-related activities. Extra funding for basic foods and PPE was provided to alleviate hardship from the current Covid pandemic. FOSEP's web site is at: [www.fosepdarjeeling.org](http://www.fosepdarjeeling.org)





'B' Class No 804 approaches Darjeeling with a Darjeeling Tours charter on Mar 2020. Photo: DHRS

### Tours

The DHRS was first to charter tourist trains on the DHR, providing valuable extra revenue to the railway and local shops, hotels and tourist attractions. Our associated travel company, Darjeeling Tours Ltd, (DTL) is still the biggest charterer of trains on the line. The DTL web site is at:

[www.darjeelingtours.co.uk](http://www.darjeelingtours.co.uk)

### Heritage

The Society has frequently provided expert advice on the conservation of the DHR's historic structures. As a corporate member of the UK Heritage Railway Association we are well placed to access guidance and support on any aspect of railway heritage. In recent times, we have provided significant technical input on the maintenance of locos, carriages and track to UNESCO for the DHR's Comprehensive Conservation Management Programme (CCMP).

### Hosting Visits

We have regularly facilitated visits by senior officers of Indian

Director DHR and his visiting team at Porthmadog (Ffestiniog and Welsh Highland Railway) on 16 Oct 2018.



School Children special about to depart for Ghum from Darjeeling on 15 Nov 2014. Photo by Paul Whittle.

Railways visiting the UK. This has included visits to heritage steam railways and engineering facilities. In 2018, we hosted visits from the steam heritage shed at Rewari and a four-man team (Director DHR plus three supervisors) from the DHR itself.

### Support for Schools

As the future guardians of the DHR and its unique heritage, local school-children and students have a key role to play. Since 2005 and in partnership with the Inner Wheel Club of Darjeeling, the DHRS has sponsored DHR-themed school competitions covering drama, essay, painting and photography. Several thousand school children have benefited from the programme which includes a 'Joy Train' ride and a visit to the DHR Museum at Ghum.

### Engineering Support

In 2011, the Society responded to a request from the Director DHR to improve the performance and reliability of the 'B' Class steam locomotives which were causing concern. Two highly experienced steam locomotive engineers,

'B' Class No 806 under test at Tindharia Workshop during the first visit of the DHRS team in Aug 2011. Photo by David Mead.





DHRS Engineering Director, David Mead, with workshop staff at Tindharia on 11 May 2019.

including our Director of Engineering, made an initial four-week visit to Tindharia in August 2011, guiding workshop staff in general aspects of steam locomotive maintenance and significantly improving the performance of 'B' Class No 806. A second visit in November 2011 continued that work and significantly improved the performance of 'B' Class No 791. At all times, the DHRS team worked in partnership with the Tindharia management and with a high emphasis on skill transfers and machining excellence.

Further visits followed in late 2015 and the Society remains committed to respond to requests for support. Most recently, in May 2019, our Director of Engineering facilitated a three-day training workshop for DHR staff.



The DHRS Schools Programme prize-giving at Raj Bhavan, Darjeeling on 3 Nov 2006. Photo by Hugh Rayner.

### The Future

In its 140 year history the DHR has faced all manner of challenges – major landslides, competition from road transport, a politically sensitive region and the effects of the current pandemic. No doubt it will face more challenges in the years to come, but with the support of all our friends and partners in India, the DHRS will certainly hope to be part of the continuing story of this world-renowned and unique hill railway.

The author, Paul Whittle, can be contacted at [pro@dhrs.org](mailto:pro@dhrs.org)

'B' Class No 787 plinthed at Siliguri Junction Station. Built by North British, Glasgow in 1913. Image courtesy: Martyn Bane.





# Up the Line to Darjeeling

**David Charlesworth**

During the production of 'Halfway to Heaven', the first full history of the DHR, Terry Martin and I soon realised he was uncovering more problems than he was solving – hence publication of the two subsequent volumes of 'Iron Sherpa'. I was quite involved in those first books and almost every other book on the DHR since 1999 and I really thought we had covered everything.

However, the Darjeeling railway still exists as a working railway and things do wear out, get washed-out and need repairs. As a result, nothing remains the same and the DHR is constantly changing. As a heritage site, what is vital is that as much as possible is recorded, preserved and anything that is essentially new built to maintain the the ambience of the original.

Every quarter 'The Darjeeling Mail', the magazine published

by the Darjeeling Himalayan Railway Society, has thirty-two blank pages that have to be filled and as the editor, designer and producer I can assure you that this is not an easy task. After almost 100 issues it is certainly not getting any easier as anyone who has ever tried to produce a magazine or book will confirm. To help fill these pages, the idea of a series detailing a complete "trip up the line" was put forward a few years ago. Although this was tremendous hard work it was a great success. A magazine series allows theories to be published and feedback from readers is encouraged: in this way, errors can easily be identified, corrected and printed in the next available issue. The result is a continuous 'work-in-progress' and in the case of "Up the Line" it was spread to almost ten years. Indeed, so steady was the progress at one stage it was pointed out to me that at the rate I was covering the route, and how far I had got, I might not live long enough to complete the job! Point taken, an extra effort was made to





Jan 8<sup>th</sup> 1980. Thokar Siding (Selim Hill) just above lost Loop 2. # 795 (left) and 787 (right) with Coach 75. Photo by John Gillham.

reach Darjeeling as soon as possible and this was done a couple of years later.

Filling the void now left in The Darjeeling Mail is another problem and another story, but following many requests from readers, The Darjeeling Himalayan Railway Society Board (DHRS) decided to fund the publication of 'Up the Line to Darjeeling' as a high quality book.

The DHRS produces books that no regular publisher could ever do and it was felt that this latest book would sit well as a companion to the recently released 'Incredible Darjeeling 'B' Class' by David Churchill and my small book about Adrian Shooter's 'No 19'. A great idea indeed, but regardless of feelings, a Sales Officer and a Treasurer cannot justify the production of something that they expect will lose money. So production costs and marketing are closely governed by the expected volume of sales – and the retail price in a fairly specialist marketplace. Eventually, when everything is considered, a cover price is decided upon and the cost of producing the book has to fit within it. My job, once again as the author, designer and the producer was to do just that. There is no doubt that the book could have contained much more material - but it had to fit a budget.

The maps in the book are the most accurate ever published

Thokar Siding (Selim Hill) near old loop number two. Looking downhill in November 2018.

Picture by David Charlesworth



Thokar Siding (Selim Hill) near old Loop # 2. Looking downhill in 1979.

Picture DHRS Archive.

on the line and I am now confident that the sites of all the lost loops and sidings, details of the gauge conversions, and the 120 plus level crossings have now been located. If you have been on the Darjeeling railway and are now struggling to catalogue your photographs, this book will be a great help!

The method of research changed remarkably over the years. When I started the series Google Earth was available but it did not cover India: this came soon afterwards but it was minimal, poor quality and still had large blank areas. Only in the final few years did Google Earth really come into its own. The final instalment of the series came after UNESCO India, working on the DHR's Comprehensive Conservation Management Plan (CCMP), had completed their mapping. I will always be grateful and deeply honoured that Indian Railways in Delhi allowed me to use copies of their research. Their GIS mapping and the hours given to the job, with technology that neither I nor the Society could ever afford, prepared me well for the task of writing and producing the book. It was also an honour that the UNESCO/CCMP Team had extensively used my Up the Line series, back issues of the Darjeeling Mail and hundreds of emails to help them with their detail. Since the CCMP project started in 2016, it has been a valuable partnership with wonderful highly-skilled and talented people that it has been my immense honour to

Thokar Siding (Selim Hill) near old Loop # 2. Looking uphill in November 2018.

Picture by David Charlesworth.



know and call friends.

Other methods of research were asking questions, walking sections of the line and making countless trips up and down the entire length. I even borrowed a Royal Enfield 350 motorcycle during one research trip. When I asked a friend living in Salbari if my paragraphs about the history of Dagapur and Salbari were correct, he replied *"I didn't know any of that, thank you. We Nepalese are not very good at keeping records"*. After over 35 years of studying and trying to understand the DHR, there was no surprise in that – life has not always been easy in Darjeeling, the Hills and Siliguri. Having time to record facts and study history is often a luxury and a privilege and it is only now that things are changing for the better.

A key element has been unearthing and recording the history of this irresistibly fascinating railway and there is still much more to discover. Time moves on far too swiftly. We have to accept that friends and acquaintances with immense knowledge may now be gone, so it is important that we work even harder to reach those that are still here. It is through such people around the world, in addition to India, that we

now have what is probably the largest collection anywhere of images and reference material about the DHR. Some of the difficulty in finding historic locations on the line is well illustrated with Thokar Siding, which is the name of the village. It was called Selim Hill Siding for some time as it is just around the bend from there, but the exact location was a mystery even though the Society had pictures – it took several trips before I could locate it. Even local people could not identify the site so it would have been impossible without the language skills of my good friend Prasenjit Singha, a former front desk manager at The Cindrella Hotel, Siliguri. The siding is actually just above the present Reverse No 1 and a short distance up the road from the site of the lost Loop No 2 tunnel. The last known record of the siding in use is from a picture dated 8 January 1980.

Understanding some of the history enhances the enjoyment of a visit wherever you go. *Up the Line* was published in the sincere hope that it will improve knowledge of this remarkable hill railway by filling many gaps and correcting past errors, while hopefully not creating too many new ones!

Cover Photo Courtesy: Anamitra Bose

DHR Steam Joy Ride near Ghoom. Image courtesy: Rudranil Roy Chowdhury.





# Heartlands of Uttar Pradesh *through the*

The then Uttar Pradesh working MG network from Shahjahanpur to Bahraich via Pilibhit, Mailani was covered in a solo trip which gets published in 3 subsequent episodes while the Nanpara - Nepalganj Road branch line was done three and a half years later which would feature in our 4<sup>th</sup> quarter. Here we begin our MG journey with the first leg from Shahjahanpur to Pilibhit.

**- Somsubhra Das**

The glory days of the vast Uttar Pradesh Meter Gauge (MG) network were behind us when legendary MG trains like Nainital Express, Kapilavastu Express, Rohilkhand Express, Bundelkhand Express, Gokul Express, Mathura Express, Marudhar Express and Sanctuary Express used to frequent the tracks. Those were the days when the MG alignment drew importance in sync with its big brother and the erstwhile largest state of the Union used to be an MG bastion. The simple fact about the MG network, stretching from Shahjahanpur connecting Tanakpur, Lalkuan, Bareilly and Kasganj via Pilibhit on one side while Sitapur, Lucknow, Gonda and Gorakhpur via Mailani on the other side, not very long ago, speaks volumes about the huge expanse and faith galvanised with trustworthiness that our railway system had on the smaller gauges. Even a 2'6" narrow gauge direct connection which was better known as the Powayan Light Railway (PLR) under the Rohilkhand and Kumaon Railway

(R&KR) connecting Shahjahanpur with Mailani via Powayan existed decades earlier. With the passage of time though, the wider gauge has flexed its muscles and has made the MG an outcast from a better part of the country. The remains of the fragmented network were only a pale shadow of its illustrious past. Yet, the surviving vestiges were alluring enough to push me to undertake the journey across the whilom United Provinces.

Chalking out a plan, to cover the lion's share of the existing network while keeping an eye on the time-constraint factor was challenging enough. My partner in this venture was Subhadyouti Bose - the first of our many MG trips together! The journey gets a completely different proposition when you are in the best of company. Later on, we were joined by fellow railfan Mr. Somjit Sanyal for fulfilling his desire of undertaking an MG tour - a maiden one for him. Sheer

excitement and exhilaration were overwhelming us as we got our travel authorities booked on the Lalkuan SF Express from Howrah. We set our sights on Shahjahanpur to start things off. Back then in 2016, MG was operational in the Shahjahanpur-Pilibhit, Pilibhit-Mailani, Mailani-Sitapur and Mailani-Bahraich stretches (along with the Nepalganj-Nanpara branch line). The Sitapur-Mailani MG section was in its last few days with services brought down to a solo one from Bahraich only.

Deboarding at Shahjahanpur was not possible as our train didn't have a scheduled halt there. Still, we stayed up for the better part of the night and kept ourselves ready with slight hopes of an unscheduled stop in and around Shahjahanpur. But it was of no avail. The train thundered past our primary destination in the wee hours of the day and we were left with no option but to skip ahead by 71 km and get off at Bareilly Jn. We purchased separate tickets for our journey back to Shahjahanpur before we boarded a late running and filled-to-capacity Chandigarh-Lucknow Superfast Express. Those 70 minutes travel in the general compartment felt like 7 hours as we shoved and jostled in order to cram ourselves in the packed coaches. Sanity was restored only after we got down at Shahjahanpur. Later on, we freshened ourselves up as the rising sun announced the arrival of an interesting day ahead!

As evident from the name, the city derives its nomenclature from the famous Mughal Emperor and has its origin going back to the early 19th century. The city also happens to be the birthplace of some eminent freedom fighters like Ram Prasad Bismil, Shaheed Ashfaqullah Khan among others. Some protagonists from the Kakori train-robbery of 1925 hail from this city as well. Shahjahanpur is also known for its connection with the 1857 Uprisings and Ahmadullah Shah - the man behind the fall of the company's forces in and around Lucknow and Awadh regions, has his head and body buried at two different places in the city. The city also draws much attention due to its carpet industry.

A quaint Shahjahanpur MG platform

Photo by Somsubhra Das



Our power for the morning service to Pilibhit

Photo by Somsubhra Das

Soon, we hopped out of the station looking for the MG counterpart. A bit isolated and deserted small premises was holding on its own. Some fruit vendors were selling their stuff and a lone person was vending the MG tickets from an almost obscure counter. A set of another two counters with guardrails, closed then, implied the significance of the MG network in its heydays. Some not so busy souls were roaming around the ground level platform. We scampered to catch a glimpse of the locomotive in charge of our train. Some watched in utter dismay as to what we were upto! But it wasn't exactly their faults as the way we manifested our exuberance while spotting and photographing the MG workhorse was enough to baffle the common folk. YDM4 # 6503 hailing from the Izzatnagar Diesel Shed was at the helm of matters - the assigned loco in sky-blue livery with a yellow stripe had a striking resemblance with the ones of Narkatiaganj Diesel Loco Shed (DLS) in Bihar. Shahjahanpur MG station looked miles away from the hustle and bustle associated with its BG counterpart - birds chirping amidst rich foliage offering generous shade evoked a sense of romance and old age charm.

Cruising through the thickets

Photo by Somsubhra Das





Holy smoke billows out...

Photo by Somsubhra Das

After soaking in the ambience, we positioned ourselves in the first and the last compartments to add different perspectives to our photos. This decision, though, became the source of a rather hilarious incident that took place a little later in our journey. Soon the customary hoot and the jerks ensured we were off to Pilibhit on the first service (6:30 am) of the day!

Negotiating a huge turnout from Shahjahanpur, we ran moderately till our first stop – Shahbaznagar. The entry and exit of the station were guarded with semaphores which looked to be in great shape. No points for guessing that steams used to be the principal motive power in these stretches with frequent water filling points – later diesels took over the reins. The juggernaut of our YDM4 leading a 12-coach consist continued through minor grades post Shahbaznagar as we skipped past Khiria Khurd, raising a mini dust storm to flutter a plethora of dried leaves into the bright morning sky. A couple of MACLs around looked so much out of place in the semaphore territory. The speed was appreciable if not blazing, keeping in mind the vagaries that an MG travel brings with it. But all the factors of uncertainty had taken backseat by then as we rushed past the fields and open grounds. Elephant grass and towering trees offered some diversity of landscape. The little red-brown boxes looked straight out of those bygone days of the Indian Railway when passenger coaches used to don the maroon-red livery instead of the contemporary ICF blue. We progressed further with no substantial boarding or deboarding enroute.

Coming back to the eventful incident, as we were cruising past Areli Halt and Dhakia Tiwari, the train came to a sudden screeching halt, literally in the middle of nowhere! Before I could make anything out of this unanticipated pull up amidst barren fields, I found the passengers being surrounded by a large gang of Travelling Ticket Examiners (TTEs). Absence of TTEs for checking tickets had been a foregone conclusion for us – deriving from the earlier

instances of other smaller gauge services. But who knew an unexpected turn of events was awaiting us? A ticket checking frenzy befell us!

The TTEs seemed to be in a belligerent mood as they began to look for ticketless passengers as if there was no tomorrow. Soon some passengers, including Somjit and I, found ourselves cordoned off for an apparent heinous crime – travelling without ticket! The treatment meted out drew parallel with the one meted out to persons charged with homicide. Funny ways to tackle things! I was able to shake myself up from this quick turn of events to present my case, along with Somjit's, in order to get away from being labelled and categorised as clandestine travellers. Soon things took a different turn. We were made to get off the train under the stringent vigilance of RPFs with a solo chance to prove our innocence as our tickets were with my friend who was at the other end of the train. The RPFs behaved as if there lay no provisions in Indian Railways to pay fines for ticketless travel and getting jailed seemed to be the only penalty as I shoved the hands of a rather over-enthusiastic RPF constable off my shoulders. Meanwhile, trying to connect Subhadyouti over the phone wasn't working and the drama continued until we met a few coaches ahead. Subhadyouti was also anticipating this fracas and was making way towards us in an attempt to connect. Upon his arrival, our tickets were checked and finally the TTEs gave us reprieve, although they looked a bit crestfallen as it seemed like they had lost a chance to extort a large sum of money from us in the name of fines.

While we understand our responsibilities, which include buying proper journey tickets, making the TTEs understand that was one hell of a task. But as the TTEs relented, the RPFs didn't; they exactly didn't want to believe that we were authorised passengers. I also started to get under their skin by glaring at their frustrated faces. The personnel who made me feel like a quising couldn't resist anymore as he blamed

The old age set up at Nigohi

Photo by Somsubhra Das



us for not carrying tickets with ourselves which gave rise to all this ruckus. I politely replied, "That's none of your business....". Looking at the lighter side of things, we felt like a band of outlaws holding up a train amidst jungle-raj. With well over 20 minutes lost and unauthorized free mongers taken to task with fines, the wheels began to roll again.



The customary token exchange

Photo by Somsubhra Das

After things settled down a bit, the crave for fulfilling our gastronomic demands had attained a new high. We had had nothing since morning and with no vendors around, we were left with no option but to bide our time as our train swarmed past thickets and groves. Finally, something was there - the big, hot and crispy samosas - right from the hinterlands of Uttar Pradesh. They were absolutely delish! The bare minimum price ascertained the way of life of locals there. We gobbled up quite a few of them served with green chillies. Tasting local flavours while travelling has always been our way of things and this was no exception either.

Soon, we munched our way into Nigohi where we were looped for the first crossing of the day. We were joined by

The first crossing happens

Photo by Somsubhra Das



Milk cans hanging from the window grills, a common scene of rural India

Photo by Subhadyouti Bose

many simian families who took charge of the low-lying platform. The corresponding morning service to Shahjahanpur, from Pilibhit, arrived in no time and was mostly occupied with milk vendors with milk cans hung over the window grills - a common sight of rural India. Post Nigohi, we were snaking along the sugarcane fields across the blue vistas often interspersed with *Kash* blossoms signifying the advent of autumn. After dropping by Vazeerpur Halt, Zindpura, Chak Safaura Halt and Mighauna, we reached Bisalpur - another station with an abundance of big trees. Up next was Sherganj followed by Bhopatpur - where the second crossing was done. The remaining 20 kilometres of journey had 2 more interregnums - Pauta Halt and Pratabpur. Most of the stations enroute had characteristic smaller sheds with benches. Another striking feature that we came across was the demarcation of distance in kilometres of subsequent stations on either direction at nearly every station premises.

The unique signage

Photo by Somsubhra Das



As the mercury soared, our consist huffed and puffed into Pilibhit through a giant curve. We were guided by a strange



Bisalpur – a station enveloped in trees and their blossoms. Image courtesy: Somsubhra Das



Image courtesy: Somsubhra Das

Meeting the second slated crossing. Image courtesy: Somsubhra Das



Iron horses milling around Pilibhit

Photo by Somsubhra Das

combination of signalling system – semaphores with colour light route indicators stacked above. Seldom have we witnessed such a unique combination before. We slowly crept into the platform surpassing a rake of MG Accident Relief Train (ART) parked on the side-lines. With a couple of YDM4s freely milling around, the connecting service to Mailani was announced as ready to depart. But we decided to stay back for the next scheduled departure instead, to explore the station arena. Stepping outside the station premises, we were confronted with a humongous 35 Ton MG Steam Crane – plinthed for display. The single-storey station building looked quite elegant from outside.

Pilibhit carries the sobriquet of 'Bansuri Nagari' or the city of flutes. Producing flutes and good quality rice has been the forte of this city. Pilibhit presented itself as a key MG Junction with the capacity to handle a myriad of trains and passengers. The buzz was completely different from what we had witnessed at Shahjahanpur. Announcements about trains, the noises made by the diesel guzzlers and the bawl of daily travellers summed up the scene. Men and women with all sorts of belongings stacked in sacks, buckets and gunnies, some with infants clinging from lap thronged the station area. Transportation of livestock by trains in passenger coaches is also common in these parts which only reaffirms the fact that railways is truly **the lifeline to the nation**. Food stalls selling local sweets, samosas, chips, puri-sabji, aloo-tikkis and tea were having field day. We indulged ourselves in some fresh, mouth-watering fast food. The station seemed to offer a level playing ground to all of its visitors across all caste and creed.

Pilibhit also was markedly different from other operational MG junctions like Talala in Gujarat, in terms of its importance and location. As many as four lines used to get fanned out from here – Tanakpur (north-bound), Mailani (east-bound), Bareilly (west-bound) and the south-bound Shahjahanpur. But BG had begun to spread its wings and



The humongous 35 Ton MG Steam Crane plinthed outside the Pilibhit station

Photo by Somsubhra Das

the Tanakpur branch had fallen prey to gauge conversion while the MG connection to Kasganj, Bareilly and Lalkuan via Bhojipura had already been lost forever. We saw platform heights being raised and MG lines being uprooted – not the greatest of scenes to admire from an MG lover's point of view. But one must understand that change is perhaps the only constant in this crazy world where electrification happens before doubling and busy MG alignments are sacrificed for the sake of so-called development. Progress has many facets like operational-ratio, maintenance etc. along with saving time at change-over points but more often than not it's the people commuting in these trains who find themselves being pushed to the brink and are always at the receiving end of such weird execution of questionable decisions. Such paradigm shift of approach from the highest chair has created instances like that of Bodinayakanur (in Tamil Nadu) where MG services were closed for gauge conversion over the last ten years and passenger services are yet to get revived. The substantial part of the MG network of north Bihar has also met a similar fate!

Trying to make both ends meet by selling the product of Bansuri Nagari

Photo by Somsubhra Das







The lone warrior from Ghagra Kacheri. Image courtesy: Somsubhra Das



The semaphore-colour light combo determining the path for onward progress. Image courtesy: Somsubhra Das



The train of YDM4s lined up for condemnation

Photo by Somsubhra Das

Back to the station scenes, we spotted a train of YDM4 locos, a dozen of them, queued up for condemnation. Bushes and grasses have had a luxurious growth around them. The site presented moments of desolation amidst all the scurry around. A palpable sense of loss prevailed us as we saw those poor machines stranded in the sun for getting scrapped. We photographed each one of them so that they remain alive through our lens in our memories in years to come. We came across a similar heart wrenching scenario at Mailani later in the day.

Next, we landed ourselves up at the cynosure of some live machines, yes, the Diesel Trip Shed (DTS) which hosted the IZN horses – just meters away from the platforms. A busy workshop with maintenance of locos in full swing perhaps didn't reflect the dull future of smaller gauges. To add to our joy, we came across a solo workhorse with CI shed marking. Chapra Kacheri (CI) used to be the satellite shed of Narkatiaganj serving the then vast North Bihar and UP MG network with not so prominent holdings though. We didn't

A fascinating looking Portable Grid Load Works vehicle @ Pilibhit Diesel Trip Shed Photo by Somsubhra Das



Locos under service inside the trip shed

Photo by Somsubhra Das

expect to see a Chapra Kacheri loco in our wildest dreams as the Bihar MG network then was completely isolated and survived by a truncated Laukaha Bazar-Sakri stretch which was powered by the mini giants from Narkatiaganj DLS. Though the trip shed looked equipped to handle varying issues of locos, major overhaul works were still carried out by the Izzatnagar Workshop and the same modus operandi continues till date. We saw a unique Portable Grid Load Works vehicle eked out from the SHF of a BG Alco fitted with small wheels. Also, legions of destination boards, some newly painted along with some older ones lay stacked on the walls. Never mind the sweat, never mind the heat, we were so engrossed in witnessing scenes that minutes seemed to fly away in seconds!

Meanwhile, our train had been berthed and to our utter surprise it was already packed to the hilt to make us realise that our journey to Mailani won't be a smooth sailing one – unlike our morning safari. We managed to board and sit on the doorplate with double occupancy as we could not afford to miss a single aspect of our ride despite knowing the fact that we had to get off at every halt to let a smoother disembarkation and embarkation. Off we went as our day had certainly not ended. Our journey across vast swathes of countryside accentuated with semaphores and token exchanges, lush green paddy fields and sylvan glades continued which will be depicted through the pen of Subhadyouti Bose over next chapters in the upcoming issues. Do stay tuned for the next part....

Cover photo courtesy: Subhadyouti Bose



EXCLUSIVE



# EIR Early Days : 1841-44

Part - I

P K Mishra

## The Idea:

EIR owes its origin to Sir Macdonald Stephenson, who thought of a railway in India and had commenced collecting materials and other details for the introduction of railways, as early as 1841, which led to the establishment of a system of railways in British India, the most gigantic, the most ambitious, and the most interesting problem which the enterprising genius of the age had propounded to the world.

Stephenson would term Railway as the great modern instrument of civilisation —*the detached links of that extended chain which, at no distant date, shall connect the remotest ends, and exercise a humanising and irresistible influence.* -- **Elementary and practical instructions on Railway by M. Stephenson.**

In the first official communication with Government, Stephenson underscored the military & commercial objectives of introducing railways in the country, with Fred. Jas. Halliday, Secretary to the Government of Bengal, on 15<sup>th</sup> July 1844, , calling the project of establishing railroads

*in India as one of paramount importance to the best interests of the country, and calculated in a military as well as a commercial point of view to be productive of the most beneficial results, - Government Gazette, Fort William, 24<sup>th</sup> August 1844.*

Mr. Stephenson would later admit in his evidence before the Committee of the House of Commons in 1858, that the project of a railway in India first had occurred to him in 1841, but it was not till the 2nd December, 1844, that he first made any recorded official proposal on the subject. – **Railways in India by Edward Davidson.**

Mr. Stephenson, who was the Secretary in London of the Comprehensive Steam Company in 1835, came armed with a strong letter of acknowledgement of his services in the cause of steam communication with India and a piece of plate of the value of 200 guineas, which he had received from Peninsular and Oriental Company. Stephenson during deposition in 1858 stated that for last 24 years, he had been engaged on railways, or similar works, connected with India

and it was year 1835 when he became first engaged in carrying out steam communication with India.

As early as 1841-2, having already access to the East India Company and the Board of Control by his steam communication business, Stephenson urged powerfully on them the extreme desirability of taking steps for the introduction of railways, which, he said, were more urgently needed in India than in more civilized countries. Railways, he declared, would transform the most costly, slow and uncomfortable, into the cheapest, most rapid and most convenient method of transport in those widely-spread states. He made little or no impression upon them and they hesitated to embark in what appeared to them a grave risk. -- **Graces Guide**.

In 1842, he established an office in London, to supply the information required by engineer officers in the East India Company's service, and to facilitate their availing themselves of the Court's permission to travel and inspect the public works of England, at the Court's expense, with a view to their application to the service of the East India Company on their return.

Simmond's Colonial Magazine had reported in 1845 that the first impulse was given to the view which the Bengal Government took of the principle of introducing Railroads into India, by Mr. Stephenson, a gentleman who had for some years previously been engaged in collecting statistical data, and otherwise exerting himself in the promotion of the measure; under an impression that Government assistance, in some shape, was essential to the success of his enterprise, he awaited giving publicity to what had been done until the Government was alive to the importance, in a national point of view, of such an under taking. It was the untiring effort of Stephenson that 'Railroads in India' became something more than "vox et præterea nihil".

On the 1st of January, 1844, he published a pamphlet on the subject, together with a sketch-map of the principal lines on which, according to the best information then available, the construction of railways appeared likely to prove beneficial to the country and to shareholders. Neither the public nor the Government manifested much interest in the subject.

John Bourne C.E., one of the official surveyor of East Indian Railway company and an authority of steam engines, had recorded in his book 'The Railways in India' that the East Indian Railway had its origin in the exertions of Mr. Stephenson, who, after acting as secretary of the East Indian Steam Navigation Company, and devoting many subsequent years to subjects connected with the development of the resources of India, proceeded to Calcutta, and, after conferring with the government there on the subject of Indian railways, and collecting a large amount of important information bearing upon their commercial and engineering features, returned to England to press the subject upon the consideration of the authorities at home.

### The Official Recognition

On the retirement of Lord Ellenborough, the Governor General of India, who had withheld his encouragement labouring possibly under the mistaken impression that other public works were more immediately needed; Mr. Stephenson addressed Mr. Wilberforce Bird, the Deputy Governor of Bengal, and Governor-General ad interim, stating that no pecuniary aid would be required from the State, and that no concession was solicited beyond the free grant of the land, and the appointment of two or three official directors to consolidate the undertaking and to give confidence to the public. -- **Quarterly Review 1868**.

Sir George Larpent, the Chairman of General steam Navigation Company, had called upon Governor General in connection with steam communication in India to ascertain the views of Government and solicit a charter or act of incorporation from the Government. The Governor General admitted the importance of any undertaking which improved the communication with interior but he questioned the practicability of Railways generally in India and rather favoured strongly Rajmahal Canal and had sent his strong recommendations to home authorities that it should be carried out. -- **The Indian Mail 1844**.

Mr. Bird, Governor-General ad interim, took up the question with great heartiness, providing the requisite degree of encouragement and countenance on the part of the Government, and the project was energetically advocated by the liberal and enlightened Secretary of the Bengal Government, Mr. Halliday, as well as by the most influential of the local journals.

Mr. Stephenson was informed, in reply to his communication that the Deputy-Governor was deeply sensible of the advantages to be gained by the construction of railways along the principal lines of communication throughout the country, and was anxious to afford any well-considered project for that purpose his utmost support.

This communication, which was promulgated in the official Gazette, was the earliest recognition of the importance of the enterprise by the public authorities.

Governor General of India had also recorded in the minutes that subject of Railway communication in India was first laid before the supreme government by Mr. Macdonald Stephenson. -- **Minute by the Governor General of India, dated 28th February 1856**.

Select committee in its report had recorded that the first Indian Railway project was broached in the latter end of 1844, by Mr. MacDonald Stephenson, who submitted to the India House a scheme for a line from Calcutta to the north-west of India, based upon minute information and statistics collected by himself on the spot; and, almost simultaneously, Mr. Chapman submitted a scheme for a railway from Bombay towards the interior; a Company was also formed in 1845 for the construction of a railway from Madras to

Arcot. -- **Report from the Select Committee appointed to inquire into the Causes that have led to the Delay that has occurred in the Construction of Railways in India.**

### Media Campaign

Soon after arriving in Calcutta, his talents having attracted attention, he was asked to undertake the editing and management of the leading daily paper, *The Englishman*, and gladly accepted the task, as offering considerable facilities for his plans.

He utilised this opportunity to acquire local information, and create a public opinion, which he called as a necessarily preliminary step, in a country in which the construction and uses of a railway were scarcely known or appreciated. He started publishing in the native as well as in the English local journals, the reports of the various European Railway Companies, with statements of their expenditure and income, the traffic in goods and passengers as well as the general effect which had been observable in every district through which a line of railway had been laid down.

In the article 'Progress of Public works in India', published in Newspaper '*Englishman*', Calcutta, on 1st Jan, 1844, Mr. Stephenson explained that the general description simply indicated the great lines requiring in this country especially, to be protected by military force, which was of necessity increased or diminished in proportion to the facilities or difficulty with which their transport from one to the other part was effected.

Articulating the aims of proposed railway enterprises, Stephenson stated that the first consideration was as a military measure to provide better security with less outlay, of the entire British territory and the second objective was to provide the means of conveyance from the interior to the nearest shipping ports of the rich & varied productions of the country, and to transmit back manufactured goods of Britain, Salt, in exchange. -- **Englishman, 1st January 1844.**

Stephenson had suggested earlier in the *Englishman* in 1843, that it might form part of a line of railway either to Mirzapore or to Rajmahal at the option of the East India Company.

### Correspondence with Government of Bengal

Mr. Stephenson wrote to the secretary of the Bengal Government, Mr. Halliday on 15th July 1844 to ascertain as to what extent the cooperation and support of the Government would be granted in the event of one or more lines being undertaken by private capitalists. He clarified, that no pecuniary aid would be required from government. The undertaking was to remain under the direct control of the Government which would appoint either a certain proportion of the directors of the prospective company or a superintending committee. Emphasizing the importance of the undertaking, Mr. Stephenson again wrote on July 20,

1844, with reference to his earlier communication on 15th July, that in lieu of soliciting that the ground for the railway be given to the Company by the Government, he had to request that a Charter or Act of Incorporation might be granted, with powers to purchase the land required by the Company, for public objects, under the regulation in force for that purpose (No. 1 of 192i).

The Government of Bengal, deeply sensible of the advantages to be gained by the construction of Rail-Roads along the principal lines of communication throughout the country, expressed keen interest and willingness to support any well considered project.

Mr. Halliday, Secretary to the government of Bengal replied on 8th August 1844, that in the present state of the law it would not be in his power to authorise a Rail Road Company to treat for the purchase of land, as for a public object, under Regulation I. of 1824; but he would have no objection, in the event of the formation of a Company with sufficient capital to accomplish this object in view, to apply to the Legislature to make the provisions of that enactment applicable to such purposes.

The Deputy Governor of Bengal deeming the establishment of railroads through-out the Presidency of Fort William an object of great public importance published the above Correspondence on 24th August 1844 in government gazette for general information, which led to intense public debate and considerable media coverage.

Stephenson acknowledged in his report the role of William Wilberforce Bird, Esq., Deputy Governor of Bengal in the undertaking which was calculated to bestow more substantial and lasting benefits upon British India, in every point of view (politically, morally, and commercially), than had been conferred by the introduction of any previous measure of amelioration or improvement.

### Commercial Viability

Mr. Stephenson, on 15th August 1844, requested principal mercantile houses of Calcutta and leading businessmen like Baboo Mutty Loll Seal, Dwarka Nath Tagore, M/S Gillanders, M/S Leach & Kettlewell, M/S Livingstone and others to give their opinions on commercial viability of the railway communication between Calcutta and Mirzapore. He also sought details of conveyance used and trade being carried out in existing trade routes. He wrote: Commercial viability of each line was to be decided based on statistical and authentic documents containing details of items produced like opium, indigo, sugar, rice, grain, etc and items required in the region like saltpetre, shell lac, drugs, minerals, metals, spices, salt etc. -- **Railway communication throughout India by Stephenson.**

Baboo Mutty Loll Seal, whom 'The Hindu Intelligencer' had described as the 'richest and most virtuous Babu of Calcutta', had estimated that every year, goods worth ten to

twelve lacs of rupees imported by sea were sent from Calcutta to Mirzapore, while expense on conveyance being around 4% of invoice value. He wrote to Stephenson that they would willingly pay something more if goods were to be carried by Railway.

He said that with an industrious and thriving population, numbering about 100,000,000— a large, active, and daily expanding internal traffic—cheap land and labour, with most of the necessary materials for construction on the spot, at prices equally low — and perfect security for person and property; it was certain that a more promising field than Bengal for the investment of railway capital could not be found.

The transportation of coal from Raneegunge coal fields to Calcutta was extremely costly and risky affair those days. Mr. Dwarka Nath Tagore had stated that the coal sent to Calcutta from the present United Company's Mines in Burdwan, would of itself pay a very handsome dividend upon a line laid down between Calcutta and Burdwan. He was even willing to raise one third of the capital, if construction of Railway in the coal fields was undertaken immediately. Mr. Tagore mentioned that twenty lacs of maunds of coal were produced but present collieries were capable of producing fifty lacs of maunds of coal and around twenty percent of coal was lost in the transit. Coal Company was willing to pay ten rupees per hundred maund for transport of coal to Calcutta. -- **Enquiries for Mr. Dwarkanath Tagore.**

The similar view was expressed by Captain J. Anderson of Bengal Engineers who thought that a single line from Calcutta to the coal mines, passing Burdwan, would give an ample remuneration on the outlay. He estimated that about 2,000,000 maunds, or 74,064 tons of coal was transported by the Damooda river to Calcutta in favourable seasons; but he had no doubt that, were there a railway, double that quantity would be conveyed yearly.

For want of proper transportation facilities, colliery owners were unable to bring coal down a direct distance of 75 miles in less than two seasons by the circuitous route of the Damooda and, one house had lost three out of eleven lacs of maunds in the transit in one year, from boats sunk, and other causes incidental to the existing treacherous means of transport. While coal could be quarried from a depth of between ten and twenty feet at the cost of about half of an anna per Maund, but the cost of transportation of coal from mines to nearest river ghats of Damooda and the Adjye ranged from three-quarters of an anna to one anna per maund. From these ghats on the Damooda to Ompta, the charges were around 8 rupees per 100 maunds. From Ompta to Calcutta, charges were four rupees per 100 maunds. Boats in the Damooda in a good year made six trips, but four and five were more common. The boats could come from Ompta to the mines only in July, August and September, and what had been dug during the whole year

must remain at the ghat till those months. The uncertainty of the navigation by the river Adjye was so great, that the coal owners could not venture to enter into contract for the supply of coals in Calcutta. They were obliged, therefore, to keep a depot at Calcutta, and meet the demand from supplies brought down as opportunities might offer, and stores.

### Traffic in Bengal presidency

Mr. Stephenson discovered that the imports and exports of Calcutta amounted to £16,570,000 in one year, of which should pass through the rich and productive district of which the chief portion had been received from or is conveyed into the interior. The traffic which passed the Jungypore toll on the Bhagurettee river, in one year amounted to 83,493 tons down, and 95,373 tons up the river, and of passengers 31,950 down, and 26,428 upwards, excluding opium traffic.

The traffic by the Soonderbunds could be carried in nine months only that too by a long circuitous route while the trade via the Bhagurettee could only be carried on during three months of the year, except by vessels drawing less than eighteen inches draft of water.

On the Allahabad and Cawnpore road, to which it was intended hereafter to continue the lines, the year's traffic amounted to 107,613 hackeries or carts, 172,377 camels & bullocks and to 63,720 coolies employed in the transport of goods and merchandize and 38,619 carriages of various descriptions. About 122,751 horses & camels engaged for conveyance of travellers, and 266,052 foot passengers.

The sugar alone which passed the north - west frontier on its way to Calcutta, in the first six months of 1842, amounted to 64,507 tons and upwards of 18,000,000 acres in the north-west provinces under cultivation, there were 577,035 acres of sugarcane.

The traffic between Hooghly and Burdwan, taken for a consecutive period of nineteen months amounted, for one year (1843) to 73,000 foot passengers, 25,080 loaded hackeries, 17,155 empty returning hackeries, 64,415 loaded bullocks, and 339 Government daks.

The trade between Burdwan and Calcutta, in salt alone, amounted in one year to 12,962 tons, and in sugar and goor to 18,518 tons, of which three-fifths were sent by land and water, and two-fifths by land, at a cost elsewhere referred to, and estimated at about three pence per ton per mile.

The transport of merchandize between Calcutta and Mirzapore, averaged by water costs 47s. per ton, and by land it costs £10 16s. to £13 10s. per ton. The former occupying an average of six weeks, the latter seven weeks, in the transit.

G. Ashburner, Esq. (M/s. Macintyre and Co. Calcutta) wrote on, 2nd September, 1844 that the official returns from the

Jungpore toll-house showed that 181,000 tons of merchandize passed annually between Calcutta and Benares, and the districts above that point by water. The expense of the river route, including insurance and interest during the time occupied in transit, amounted to about two pence per ton per mile on goods of the value of £40 per ton, or somewhat more than the minimum charge on a Railway.

435,000-foot passengers passed annually along the military road, and between 30,000 and 40,000 by conveyances of various kinds. By the river route the number of passengers in 1840-41 was 58,378, occupying 14,591 boats. These returns showed a larger traffic, and a greater number of passengers, than were to be found on any of the great thoroughfares of Europe, previous to the introduction of Railways. He opined that it could be a viable proposition in view of large existing traffic and if Railway could be constructed for £5,000 per mile, instead of from three to four times that sum, as in Europe.

M/s. Gillanders, Arbutnot & Co., Calcutta replied that they were all interested in the encouragement of measures tending to improve and develop the resources of this country, and, were favourably disposed to the railway system. They felt that a Railway could scarcely compete successfully with properly constructed steamers, plying upon the river from this to Allahabad; but perhaps a concentration of traffic at Rajmahal might be sufficient to make a line of railway pay from that station to Calcutta. -- **Letter to Stephenson dt. 27th August, 1844.**

W. W. Kettlewell, Esq. (Messrs. Leach, Kettlewell and Co.), Calcutta, opined that cost per mile of construction of Railway line, through a considerable portion of the line which appeared to offer the greatest inducement, would scarcely (even calculating on the additional cost of rails) exceed that of the cheapest line in any country into which Railroads had been introduced. -- **Letter to Stephenson dt. 28th August, 1844.**

They suggested that a line from Calcutta should, provided there be no natural impediments, touch the coal districts, and be carried on to Mirzapore the great mart & Bengal raw cotton, British cotton goods, woollens, metals, and other goods as it was the centre of the great sugar-growing districts, and had several saltpetre, lac dye, and shell lac factories. To Mirzapore, and through Mirzapore to the north, a large proportion of the metals, probably three-fourths of all the woollens, and at least two-thirds of the aggregate of the cotton goods and yam imported passed. Transit of goods could be carried from July to the end of November, the navigation of the rivers during the other seven months of the year being so tedious and expensive as to preclude parties making extensive missions during them.

Livingston, Syers and Co, Calcutta, were not so sanguine of the advantages to be obtained in a mercantile point of view till the lines had created an independent employment for

themselves, which, in a country possessed of resources like India, they might naturally be expected to do in a few years. In a military point of view there was no question of the advantages that would attend a railroad, the Government would of course reap the chief benefit and through it the community at large, taking the revenue derivable from this source into consideration. - **Letter to Stephenson dt. 28th August, 1844.**

Railways laid along the principal lines of communication between the stations throughout the country would, at least, be a safe mode of investing a capital from the first. Allan Duffell and Co, Calcutta, wrote on 31st August, 1844 that the vast intercourse between this city and Mirzapore, the great central mart for imports and exports, would alone give an immense and valuable traffic to such a road.

M/s. Cockerell and Co. were of the opinion that there could be no doubt that, as regards the commercial interests of Bengal, and those of the public, any line of railway would be of advantage, and they believed that there were lines, the advantage of which would be very great. For instance, from Rajmahal to Calcutta certainly and probably the longer line between Calcutta and Mirzapore. - **Letter to Stephenson dt. 30th August 1844.**

C. J. Richards, Esq. (M/s. Gisborne and Co.), Calcutta, considered railways here though very tempting to the view, as very doubtful investments, and that they should be entered on with great caution.

Bengal Chamber of commerce also supported the proposition and replied on September 14, 1844 that the introduction of well-planned lines of Railway in India would be very advantageous. Calcutta trader association stated that the Committee were unanimous in their belief that a Rail- road upon some eligible line, taking in its course the most important stations up to Mirzapore, could not fail to realise great advantages to the country, and be the means of developing products and resources that were yet unknown, in addition to the facility that it would give to the transit of merchandise and produce up and down. -- **From the Calcutta Traders' Association. Calcutta Trades' Room, 7th Sept, 1844.**

M/s. Kelsall and Ghosh, (Baboo Ram Ghopaul Ghosh) replied that the commercial benefits that were likely to arise from the safe and rapid transit of goods and passengers by locomotive power on railways were unquestionable, and almost incalculable. They felt that if a judicious line was selected, say hence to Allahabad, in as straight as economy would direct, embracing all important places in its course, say the coal mines near Burdwan, Benares and Mirzapore, with probably a branch to Patna, embracing Gyah ; and the business put under efficient and honest management, the chances of profit seemed so favourable as to justify them in recommending their friends to contribute to what they deemed an important step, namely, the expenses of a minute scientific survey of the proposed line, and of

collecting all the statistical information available. The reasons which induced them to view the project favourably were: cheaper cost of railways in India as compared with Great Britain, and the existence of an extensive trade between Calcutta & the Upper Provinces, which was sure to increase with the facilities of railway communication, provided, the charges were reasonable. While they admitted that the majority of the people could not afford to travel in a railway train, they maintained that the number of those who could were by no means small. The social relations between the Lower and Upper Provinces were almost nil, but the mercantile relations were extensive and extending; and so far, as mercantile pursuits were concerned, the up-country people were noted travellers.

The only serious objection would be on the part of the females; but even this stronghold of native prejudice would be successfully undermined by the civilising influence of steam and it would tend to produce changes on the political, social, moral, and religious condition of the millions who inhabited this vast territory under British rule.

Colonel Warren, C.B., Town Major, Fort William wrote that there could not be two opinions upon the subject. He regarded their introduction as likely to effect such a change throughout the whole country and to confer such incalculable benefits upon both the Government and the public, that no cost (within reasonable limits) could be too great to accomplish the object.

He had no hesitation in stating that the advantages of Railway, in a military and political point of view, were infinitely beyond what, upon a cursory examination of the subject would be supposed, and would be cheaply purchased at almost any price. -- **Letter to Stephenson, Town Major's Office, 17th Sept, 1844.**

The practicability of receiving intelligence from distant parts of the country in as many hours as at present it required days, and even weeks, to accomplish, and of sending instructions, with troops and stores, in the same brief period, were considerations which could not be too highly estimated. Troops could be kept at more distant and healthier stations than at present, and much loss of life from sickness would by this means be spared. Stores would not to the same extent be required at the various depots, and the loss by decay and the destruction incidental to the climate would also be avoided.

He assured Stephenson that no undertaking had ever been brought forward for the benefit of India which, for the real and substantial benefits to be derived from it by all classes, could at all be compared, in his opinion, to the introduction of railways upon the principal lines of road throughout the country. -- **Colonel Warren, Town Major's Office, Fort William, 17th Sept. 1844.**

Lieut. C. Handfield, of the Buffs, who had led troops through that part of the country, and that less than a year ago, wrote

to Stephenson on Sept 9th, 1844 that as a military measure, the importance of being able to transport troops, stores, &c. had been already so fully evidenced in England, that there could be but one opinion upon the subject.

C. Vignoles, in a letter to Mr. Stephenson, wrote on 23rd November, 1844 that he had carefully perused papers, and examined the documents relative to the proposed establishment of a Company for the introduction of Railways in India generally, and for at once commencing operations upon the great line between the capital of Bengal and Mirzapore. He had already given considerable attention to the matter, and collected much practical information upon the subject. Results of his own investigations fully bore out and confirmed the statement and references contained in the Report, and although without personal observation, or a complete and accurate survey of the country, he would be unable to pronounce with confidence the cost per mile of Railways in India generally. He considered that the line selected as the first work to be undertaken is unexceptionable, on account of the remarkably level character of the country through which it passes, and as offering no engineering difficulties, while the trade appeared from the returns to be such as to warrant the expectation of a very ample remuneration for the outlay. -- **C. VIGNOLES in a letter to Mr. Stephenson, London, 23rd Nov, 1844.**

Dr. J. McClelland member and secretary coal committee was not very enthusiastic about the proposed Railroads in India. He remarked that with regard to Railroads, the objection to a long line at the commencement would probably consist in the greater period of time that must elapse before any return could be expected and the uselessness of one portion of the line until the whole be completed.

He suggested that Stephenson should direct his energies to, and fix upon, some definite piece of road between two important points, and within a moderate limit, such as the road at Bombay: say, for instance, from Cutwa to Sicrigully,; or, a road from Agra to Allahabad, , such limited designs would find ready support, and could be carried out successfully in comparatively short periods of time, and in his opinion, be altogether devoid of risk and uncertainty. He stated that he would prefer the rivers as far as they were open and navigable to either, and where they were not so, these should be connected and improved by means of railroads or other means of communication. -- **Letter from Dr. J. McClelland, Member and Secretary Coal Committee.**

R. N. C. Hamilton, C.S., Resident at Indore, and Agent to the Governor General, on Special Commission to Siraa and Bhawulpore, who had written a paper on railroads in the Doab, which was published in the Meerut Observer, as far back as 1834, in an address to Stephenson on Sept 5, 1844, suggested a rail road from Hodal to Delhi, on which an experiment about commercial viability could be undertaken. One of the earliest proposals to establish a Railway from Calcutta to Benares and Delhi was examined by Mr. Joseph



Locke, one of the most eminent English civil engineers, in the year 1840-41, at which period, however, the indisposition of the Government to afford that assistance and cooperation which was subsequently conceded, prevented any active measures being undertaken by the parties who had interested and exerted themselves in the promotion of this important object. Mr. Locke was the unsung member of the great quartet of British railway engineers of the first half of the 19th century, the others being George Stephenson, Robert Stephenson (George's son), and Isambard Kingdom Brunel. Locke was the principal assistant to George Stephenson in laying out the Liverpool and Manchester Railway, the world's first railroad. Mr. Locke stated on 22nd February, 1841 that he had carefully perused the documents relative to the feasibility of establishing a Railway from Calcutta to Benares and Delhi. The reports of Capt. Thomson and Lieut. Guthrie furnished very satisfactory information of the nature of the country through which the line would pass—the route having been surveyed by them some years ago for the purpose of making a road between the river Hooghly and Delhi. There was sufficient evidence for believing that a line might be found on which locomotive engines might be used, without having recourse to stationary power with inclined planes. He remarked that the crossings of the river Soane and Jumna appeared from the description somewhat formidable, and a question would arise whether it may be necessary to raise the railways high enough to avoid the highest waters; and, if so, whether it be practicable to lessen the width of these rivers. With the exception of these two rivers, and the passing of the Summit ridge, there did not appear to exist a single difficulty. The sketches of the country and the details furnished by Captain Thomson and Captain Drummond, showed that the works of art necessary for a railway were exceedingly light, and that the cost of those works in India was very much below what it would be in England.

Considering the amount of population, the immense number of pilgrims which frequented the cities on the line, the amount of traffic in goods, the payments made by Government for the transmission of troops, together with the existing inefficient means of communication, He was of opinion that a much larger amount of revenue, than stated, might reasonably be expected. -- **Joseph Locke, London, 22nd February, 1841.**

### Travails of Travelling

Communication before the introduction of Railways in India was characterised by slow speed and uncertainty. Journey between Burdwan and Calcutta, a distance of about seventy miles, occupied between four and five days; the hire of a hackery and pair of bullocks from Burdwan to Hooghly for the trip, a distance of forty miles, would cost 2 rupees 8 annas, and to Calcutta from four to five rupees.

Travellers between Calcutta and Benares proceed in a variety

of way viz. :

1st. On horseback, or rather on tatoes., which required a pony to be purchased at Rs 15, feeding the animal required another Rs 8 while allowance to syce was Rs 7. Journey by horseback would take 15-18 days between Calcutta and Benares.

2nd. In carriages, of which there were three kinds - namely, the Chuckra, the Ekka, the Rutha. The hire for a chuckra, which would carry three persons, was Rs 25; for an ekka, for two persons, Rs 30; for a rutha, carrying four persons, 60 rupees. The charge for crossing rivers and other expenses amounted to Rs 8 in addition. Journey by wheel carriage would take 15-22 days.

3rd. On foot - It was difficult to arrive at the expenses exactly of a journey on foot a small sum for protection and accommodation was paid every night at the Serais for foot passengers, but the allowance for the journey among natives, when a messenger was sent on foot was Rs 10, which included wages, food, and all charges. It took 18-20 days to reach Benares by foot from Burdwan.

4th. By Boats - A boat of six oars, capable of taking from six to ten persons, costs for the passage Rs 60. The toll is Rs 3, and the sums paid to Chokeydars to prevent detention, and for other contingencies, were estimated at Rs 12. The expense, therefore, exclusive of food, by boats, might be estimated at 75 rupees for from six to ten persons. It would take 30 to 45 days to complete the journey.

5th. In palkees or dhooleys. — In this mode, by taking eight bearers, about fifteen miles were accomplished daily. it was attended, however, with considerable danger from robbery; and natives who adopted it generally took a couple of followers as a guard. It took 15 to 18 days to complete the journey.

6th. By Dawk the charge was half a rupee per mile or about Rs 22. To the above charges must be added the expense of food and other contingencies, which varied from two annas to Rs 5 per diem. Journey could be completed within 5 days.

7th. By steam-boats, one could reach Benares in 15-25 days.

### The Traffic Survey

Stephenson approached high government officials like Captain A. S. Waugh, Surveyor General of India, Captain Goodwyn, Garrison Engineer and Civil Architect of Fort William, W. Green, Secretary to Military Board and E. Wilkinson, Supervisor of Customs and wrote letters to the principal mercantile houses of Calcutta and to some of the influential local residents. Mr. Stephenson had requested J. B. Higginson, Esq., Mirzapore, Government Place, Calcutta, on 2nd Sept., 1844 to kindly furnish the most authentic, full, and recent returns of the quantities and description of freight which passed both upwards and down, through

Mirzapore, Benares, or Allahabad, and which, when a line of Railroad was laid down, would probably be conveyed by that means. He collected data about the annual Traffic between Burdwan to Hoogly, which was about 73,000 Foot Passengers; Hackries 7,360; Laden Bullocks, 3,650; Private Palankeens 730; Public Dakks from Hooghly along the great Trunk road 335; during 1843. For conveying goods from Calcutta to Mirzapore, expenses were 35 to 40 rupees for each hackery, carrying 12 maunds, besides eight rupees for a chaprassee, and by water, 250 maunds would cost 150 rupees. Expense of conveyance from Mirzapore down the river to Calcutta, for cotton was from 1 rupee 4 annas to 1 rupee 8 annas per bale of four Calcutta maunds, or three Mirzapore maunds. It took six weeks or two months for goods to reach Mirzapore from Calcutta.

A journey by land from Calcutta to Benares would cost 150 to 200 Rupees with twelve bearers. A gharry would cost 100 rupees, and if in a palanquin 125 rupees, besides 35 rupees for a banghey to carry eatables. Similarly, river journey between Calcutta and Benares would cost Rs. 180 to 200. It would take eight days by dakand from six weeks to two months by other means to complete the journey.

Mr. Higginson replied on September 10th, 1844, that he could not doubt the success of a Railroad between this place and Calcutta, even should it have to contend with greatly improved steam communication by river. The traffic was very great and was yearly increasing, and he fully believed the natives would readily avail themselves of the saving in time and money which such facilities might afford them; as they had shown already, by availing largely of the Company's steamers.

The object of all these communications was to collect information about the existing traffic in goods and passengers in the Bengal Presidency. With one or two exceptions, the response from almost all these people was encouraging especially in respect of the line of railway in Northern India as suggested by Stephenson.

Captain Goodwyn, Garrison Engineer and Civil Architect of Fort William opined that there was an enormous existing traffic, which was constantly on the increase, and the almost incredible number of passengers of all descriptions, who now travelled by the tedious and insecure means of hackeries and bullock carriages, and who would most assuredly avail themselves of the security, rapidity, and comparative economy, at which they could be conveyed by railway.

Conveyance of military stores, troops, officers, and mails, was expected to offer enormous benefits to government from financial and military view.

Captain A. S. Waugh, Surveyor General of India remarked that the proposed line, if completed as far as Benares or Allahabad, would be of immense advantage to the Government in a military point of view. It would facilitate and cheapen the transport of stores, and of troops, and

would save all the losses in both personal and material, which were annually occurring by the accidents on the river. He further stated that Railways would also be highly beneficial to the best interests of the country by diffusing wealth and intelligence, where all is now poverty and ignorance. The beneficial influence on the native country gentlemen, and upper classes in the provinces, would be of rapid effect, but many years would elapse before the lower classes, such as agricultural labourers, would feel any improvement. The tendency, however, to raise prices in the Upper Provinces, which would follow from the opening of such an outlet for produce, would, in tune, ameliorate the condition of all classes, and diffuse wealth generally.

With regard to passengers, there will doubtless be an immense increase of travellers among the higher and wealthier classes, European and Native; but it would be long before the third-class trains, carrying labourers and artisans, will be brought into requisition. The benefit to the country generally, and the great advantages which would accrue to the state in a military point of view, might induce the Government to lend support to the scheme, and without such support it would be impossible to raise the necessary capital because there was not sufficient local wealth; and, on the other hand, European speculators could not be expected to embark in the scheme without the guarantee of the Government.

Railroad from Calcutta to the Burdwan coal mines, would doubtless be a very profitable speculation, but the advantages derived therefrom would be entirely local, and confined to certain classes. Consequently, Government in entering into such an undertaking would not proceed upon the same high political grounds, upon which the question of the long line is based.

#### **Preparation of Railway Map**

In January 1844, while in India, Mr. Stephenson published a Railway Map of India, showing the general direction of the most desirable and practicable lines, and commenced a series of papers on the subject. This map was circulated in England early in 1844, and gave rise to other schemes being brought forward. The map embraced such lines of Railroad, as, should the adoption of this mode of conveyance, ever became general, would constitute the principal branches.

Mr. Stephenson's general view was to connect the three presidencies with each other and with the Central and Northern Provinces of India, commencing operations on the line from Calcutta to Delhi, and gradually developing the great system as circumstances permitted. -- **A letter to Hon'ble M.P. Lord Russel.**

His direct Bengal line, stretched from Calcutta to Mirzapore, Agra, Delhi, Loodheana, and Ferozpoore, with minor branches to Poonah, Meerut, and Lucknow, in all some 1,300 miles of iron road. From Mirzapore he struck down the valley of the Nerbudda to Bombay; from Bombay

he swept with a gentle curve of iron through Sholapooore, Hydrabad, by Raja Mundry, Vizagapatam, Kuttack, back to Calcutta. Nor did his designs cease there. From between Hydrabad and Sholapooore, he branched off to Madras; from Madras he coursed westward to Arcot, Seringapatam, and Calicut, and southward he 'an through Trichinopoly, to TinniVolley, almost in sight of India's southernmost point, Cape Comorin. The scheme of triangulating the country with Rail Roads was to cost fifty million pounds. -- **The Colonial Magazine and East India Review 1849.**

### Selection of route

After examining the statistical returns of the traffic in goods and passengers, as well as the cost of conveyance between Calcutta and Mirzapore, Mr. Stephenson was convinced that the extent of the trade was sufficient to justify measures being taken to improve the means of transport by laying down a rail-way between these two places, which should pass through the rich and productive district of Burdwan.

He selected the line between Howrah and Raneegunge as the first line to be constructed primarily due to large number of collieries and the uniform & gradual inclination of the road from Howrah to Raneegunge, which presented advantages which were rarely to be obtained upon a line of equal length.

Mr. Stephenson had suggested that the line to the Burdwan collieries would form a part of the plan, in the first instance, irrespective of the direction adopted for future line. The issue of alignment of the route: whether after passing through Burdwan, the direct trunk road to Mirzapore, or the more circuitous route along the Valley of the Ganges, was still to be decided. Armed with the opinions of experts, Stephenson expected that £ 6,000 per mile would suffice to complete the entire distance, taking the level parts of the country as well as hilly districts and rivers into consideration; but he suggested increasing the amount to £ 8,000 per mile, to cover every contingency.

### The Criticism

Mr. Stephenson had proposed a railway communication from Calcutta to Mirzapore, but recommended confining the first attempt to connecting Calcutta with Burdwan, leaving the remainder of the line to be carried out at a future period, when more precise information as to the most eligible mode shall had been collected. -- **Allen's mail 1845.**

A plan to connect Calcutta with Burdwan seemed to be regarded as too contracted to be entertained. "Englishman" commented that a railway from Calcutta to Burdwan was like a steam line from here to Aden instead of to Suez or from England half across the Atlantic and back again instead of affecting the whole voyage.

Whether one looked upon it as a commercial, a military, or even a pleasure route, only the complete railway line was the one wanted, and which no other could supersede or compensate the want of. Mirzapore was the junction of the

great markets of the north-west provinces with the port of Calcutta, which commerce required. Calcutta to Mirzapore line could convey troops and stores expeditiously and certainly to the frontier as demanded by government. It was the facility of visiting all the holy places, the shrines, the fairs, and other great resorts of piety, curiosity, or leisure, which was wanted by the people. Of these three great objects, there was not one that would be attained by a railroad terminating one hundred and forty miles from Calcutta, and passing through the coal district, the paper commented.

There was no lack of traffic between Mirzapore and Calcutta to afford constant employment to such a rail, and the only question was one of comparative cheapness. It was to this line of communication, therefore, that first attention should be devoted, and not to a contracted line which terminated in nothing. The proprietors of coal mines would find no difficulty in raising capital to construct branch lines from their collieries to the trunk rail, which would run the length of the presidency from Mirzapore to Calcutta, the **Friend of India** paper commented.

**Allen's mail**, defending the decision quoting example of Great Western Railway, wrote that the objections rested upon a misconception of the real circumstances of the case, Mr. Stephenson's deference to the opinions of those likely to support him had confined his proposed operations to the Burdwan line, in the first instance, not as a complete work, but as a beginning-as the means of showing, on a comparatively small scale, the practicability of introducing railroads in India, and thus preparing the way for the accomplishment, at a future period, of the entire line of which this was but the preliminary and experimental portion. The extent of the dividend on this branch was not a matter of much moment, as it was clearly understood to be but the opening of a magnificent system of communication throughout India.

### Return to England

He left Calcutta, in September, 1844, for the purpose of submitting his report and correspondence to the consideration of the capitalists of England. He had obtained much information from the officers in the service, as well as from native merchants - collected, wherever practicable, authentic data respecting the levels, and nature generally of the country to be traversed. Mr. Stephenson had taken with him, a considerable bulk of private correspondence, containing statistical and other preliminary information, and the opinions of merchants and other practical persons.

As soon as the government appreciated the importance of the measure, promised their co-operation, and gave both private and public assurance of their earnestness and sincerity, he returned to England to obtain the confirmation of approval, and the necessary official intimation of the intention to support and protect the undertaking on the part

of the East India Company and of Her Majesty's Government, as well as to complete the arrangements for establishing a Joint- Stock Company, having been engaged between three and four years upon it, and spent a considerable sum of money .

He had received all the encouragement which a government well could give in the infancy of any under taking, more than the Bengal government ever gave before to any private individual, and besides, the promise of a charter or act of incorporation, and an application to the legislature for the same power to itself to take land for a railroad, which it had to take land for public works.

### Challenges and obstacles

The common fate of voluntary projectors, in their endeavours to obtain the attention of government, was, for days, weeks, months, years, to dance attendance in the lobbies of the offices, and at last fail to obtain a hearing. It was mainly owing to the perseverance of Mr. Stephenson that the project was carried successfully through the difficulties it encountered in Leadenhall street, and in the mercantile circle in London. Those obstacles were of the most serious character.

Twenty years before, when the scheme of railroads was for the first time faintly set before the public in England, the idea of a conveyance which should travel twice as quick as the mail was considered perfectly absurd, and it was remarked, that we should expect the people of Woolwich to suffer themselves to be fired off on one of Congreve's ricochet rockets as trust themselves to the mercy of such a machine going at such a rate scarcely less fanciful were the objections now raised to railroads in India. The natives, with their stereotyped habits, it was affirmed, would never take to this novel mode of conveyance; and, if they did, they would be smitten down by the tropical heat, the white ants would devour the sleepers in a twelve month, and not only the carriages, but the rail itself would be swept away by the floods. Neither were English capitalists prepared to risk their funds upon a doubtful enterprise at the distance of half the globe, over which they could exercise little control, and which was too likely to fall a victim to local jobbery and speculation. It soon became evident that, without a direct guarantee from the State, the establishment of railroads in India was altogether hopeless. But although the proposal was encouraged at the India House by Mr. Shepherd, by Sir James Hogg, and by Mr. Melvill, some of the most influential of the Directors, and more especially Mr. Tucker, the leader of the Old India party, scouted the idea of any such innovation.

The letter of Mr. Bird, however, appeared to have produced a favourable effect; and the Court, feeling that the question could no longer be shelved, determined to send out an able engineer to conduct investigations on the spot, and to make a report to Government.

### Proposal to Court of Directors

On the basis of fairly enthusiastic support in India, Mr. Stephenson, on his return to England towards the end of the year 1844, made a proposal to the Court of Directors for building a railway line from Calcutta to the Burdwan coal districts. He put his observations on the practicability a railway line in Bengal in the form of a printed report along with the correspondence that he made in India on the subject. After returning to England in the year 1844, he had entered into communication with the leading commercial houses connected with India, who formed themselves into a Committee on the subject. All these gentlemen concurred in the vast importance of the undertaking in a political, commercial, and social point of view; but after much and anxious deliberation, all equally agreed in the conclusion, that the object was too vast and too distant, and the returns too uncertain and remote, to admit of any well- grounded expectation that the capitalists of this country would be induced to invest money in it without direct pecuniary assistance from the Government of India. It was said that the projector of such a scheme as this, the ex -secretary of an East India Steam Navigation Company - a Scotch engineer of the name of Macdonald Stephenson, had imbibed the spirit of the alchemist of olden times.

Court of Directors wrote to Government of India (Governor General of India in Council) that general principles had been framed to regulate construction of Railways in India and they had received applications of Mr. Stephenson dated 2nd & 13th December 1844 (with enclosure) and proposals of Sir G. Larpent, Chairman of the proposed East Indian Railway Company and Mr. Stephenson dated 30th December 1844 & 28th January 1845. This communication would be first formal acknowledgement of proposals by Board of Directors of East India Company for constructing Railways in India and would set in motion set of events which would finally result in ushering Railway revolution in the country.

This is the first chapter of an exclusive 20-part series on the history of East Indian Railways by P. K. Mishra. The author's painstaking detailing on the various stages and aspects of evolution of EIR will surely keep us engaged as they get published through our upcoming issues.



EXCLUSIVE



# Calcutta Melbourne Tramjatra

2nd Contact : 1997

The Calbourne Tram

- Roberto D'Andrea

The Melbourne Calcutta Tramways Friendship was up and running again when Roberto D'Andrea and Mick Douglas arrived in Calcutta in late September 1997, just a year after the first Calcutta Melbourne friendship tram ran out of Belgatchia Depot, and six months after the 'W' Class Melbourne Calcutta Bondhu Friendship Tram had tracked the Melbourne tramways for a couple of months in February-March of 1997, out of the South Melbourne and Malvern Depots. Since the Victorian Minister for Transport, Robin Cooper, had launched the Bondhu tram earlier in the year, this 'mark of respect' for the Calcutta Tramways Company (CTC) to be recognized 'internationally' meant the CTC enthusiastically embraced the tram festival tradition. With the CTC and Government of West Bengal sanction, Calbourne rolled out of Belgatchia Depot on the 8th of October 1997. Launched by the then Transport Minister for the Government of West Bengal, for a period of two months, Calbourne toured on all of Calcutta's tram routes and visited all workshops and depots.

The Calcutta Melbourne Tramways Friendship had now linked the Calcutta's Tramways with the Melbourne Tramways. We were now rare surviving tramway friends. Upon arrival in Calcutta, Roberto and Mick prepared for a meeting with the CMD of the Calcutta Tramways Company (CTC) with our tram activist friend Dr Debasish Bhattacharya. We then met with Chairman Cum Managing Director (CMD) of the CTC, Mr Dilip Chakraborty, in the CTC head offices in central Calcutta, presented Calbourne and after some hours went with the CMD to the Writers' Building, for a meeting with the then Transport Minister, Shri Subhas Chakraborty. Armed with the necessary permissions, our next stop was the Nonapukur Tram Workshops to select a CTC tramcar.

After meeting the Nonapukur Workshops' 'Works' Manager', Mr S. K. Mitra, we chose the recently renovated CTC tramcar #609 for decoration. The white with blue stripe livery and modern looking design was a handsome tram to work with.



Calbourne's home depot is South Melbourne Depot's sister depot, Belgatchia. We were back amongst trammie friends and in a tram depot we knew well. Mick and Roberto co-designed Calbourne with Belgatchia Depot Trammies and they were the inspiration for the 'material and 3rd eye designs'. In a truly collaborative way, we worked day and night, designing and painting Calbourne. On the night before launching Calbourne, Mick and Roberto slept inside the tram under mosquito nets.

#### CALBOURNE DESIGN

Tram passengers entered Calbourne through two big eyes painted around both the first and second class cabins. They depicted the Hindu Goddess Durga's material eyes and like human eyes, these two large doorway eyes see the material world. When passengers were traveling inside Calbourne, Durga's 'bindi', or third eye designs made on oval shaped wood, connected passengers with a harmonious spiritual world- "The Mother Earth - Clean Air - Free Flowing Trams", a world where love, friendship and tramways dominated. The

'bindi' designs on the third eye artworks were done by Belgatchia trammies in Bengali, English, Hindi and Urdu. Calbourne's interior was colourfully adorned. **Long Live Trams, Two Rare Tramway Survivors** was painted inside the tram and in the advertising spaces were side by side photos of tram passengers, trammies & the trams that track their way through our parklands, along narrow tram streets that form busy shopping strips, in front of colonial parliamentary buildings & zoos & huge cricket stadiums. From Kidderpore to Carlton, Behala to Bundoora, Rajabazar to Richmond, Kalighat to Collingwood, Lenin Sarani to Lygon St & along Mahatma Gandhi Road to St Kilda Beach. The photographic exhibition inside of Calbourne was about us, the peoples and trams of two rare surviving tramways.

#### CALBOURNE'S PERFORMING TRAM CONDUCTORS

Melbourne Tram Conductor and Driver Roberto D'Andrea joined with CTC trammies and stayed onboard the Calbourne tram for eight weeks. "I have been gifted some beautiful tram opportunities in life but none of them come close to this





one - dressed in CTC and Melbourne tram uniform and be given permission to perform as an CTC conductor in Calcutta!". A chance to tram conduct in another tram city, that has conductors at a time when we were about to lose our jobs in Melbourne. Was it the last great act of a Melbourne conductor only months before our last clipping of tickets, call of "fares please" and a ring of the connies bell in Melbourne? So, with a spring in my step, eight beautiful weeks of meeting and greeting tram passengers, clipping them a friendship tram ticket and showing them around the tram like a tour guide. The new Melbourne designed friendship tram tickets with the **MOTHER EARTH - CLEAN AIR - FREE FLOWING TRAMS** stamped on the them looked like a daily ticket, were a gift from a connie.

Calbourne covered all CTC tram routes and visited all depots including the Nonapukur Tram Workshops. All this took place during the Durga Puja Festival. A Hindu celebration for the goddess mother Durga that sees millions of Calcuttans on the streets.

Tram conductors from both cities gave passengers specially designed daily tickets: The Mother Earth, Clean Air, Free Flowing Trams was printed on each of the tickets, one side

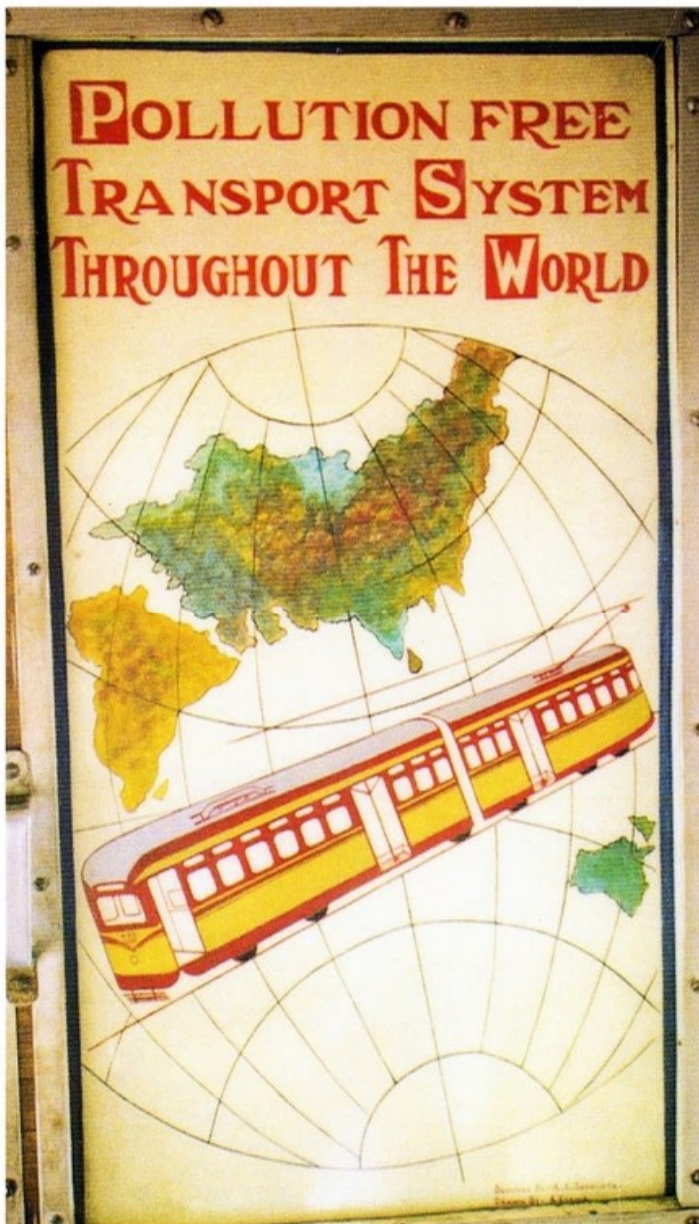


with smiling 'W' Class Tram and, the other with a handsome Calcutta tramcar.

**MELBOURNE CALCUTTA TRAM TECHNICAL EXCHANGE**

Before leaving Calcutta in 1996, some senior CTC officials and trammies requested that we conduct a tram technical exchange. So, in the lead up to the Calbourne Tramjatra, Roberto was given permission to collect information on how the Melbourne Tramways operates. While the biggest issue for trams in Calcutta being the poor condition of tram tracks, I brought with me detailed information on how Melbourne maintains and lays new tram track. This information came via Massod from the MET's track department at E Gate. Of all technical information taken to Calcutta from Melbourne, the tram track information was enthusiastically received, and which helped improve tram track renewal in the first decade of the new millennia. I also brought information on how Melbourne builds and maintains its 600 V DC overhead electrical system and information on the various models of trams that ply the tram tracks of Melbourne. This technical tram information from Melbourne was a gift as a part of the tramways friendship and through the eight weeks that we spent in Calcutta, the knowledge was shared with senior CTC officials to help encourage tram renewal in Calcutta.





### CALBOURNE'S 8 WEEK TOUR, DEPOT BY DEPOT

As a part of the Calcutta Melbourne Tramways friendship, the Calbourne tram was given permission from CTC to run out of all tram depots and ply on all routes. "Another great privilege for me has been the opportunity to be a trammie and work alongside CTC trammies at all depots and the Nonapukur Workshops. To convey my gratitude, I brought along tram maps and tram photos from Melbourne and Calcutta that we presented to each depot" said Roberto.

Belgatchia Depot's Calbourne tram tracked along College Street and Rabindra Sarani in the narrow alleys of the north. We often 'layed up' at the Shyambazar Terminus goompty and when on Rabindra Sarani in Galiff Street line and Bagbazar. Calbourne also tracked along the tram 'right of way' on APC Bose Road through the Maniktolla Junction,



winding our way towards Mahatma Gandhi Road and the Howrah Terminus.

Rajabazar Depot. Calbourne often tracked along the Mahatma Gandhi Road from the depot to the Howrah Bridge Terminus. One of my favourite tram routes through a famous old area was Chitpur. From the Esplanade and BBD Bag, Calbourne tracked on route 17 to the peripheries of the newer suburb of Bidhan Nagar, a long tram route partly funded by the World Bank and this was another one of my favourites.

Next, we went to the Kidderpore Tram Depot situated near the docks. From here, Calbourne tracked the beautiful parkland tram-line through the Maidan on Route 36. From the Esplanade, Kidderpore Depot trams track the longest of the CTC's tram-lines to Behala and Joka on Route 37. Calbourne journeyed this long line which terminated in what was then a lush green rural setting at Joka.

Next in the itinerary was the Tollygunge Depot in South Calcutta. Calbourne tracked the Tollygunge - Ballygunge line along Rash Behari Avenue, route 29, which ran past Kalighat Depot to the Esplanade via

## City's tribute to Aussie trammies

STATESMAN NEWS SERVICE

CALCUTTA, Oct. 8. — The Calcutta Tramways Company today returned a compliment to the trammies of Melbourne. The Melbourne-Calcutta tram rolled out of the Belgachhia tram depot this afternoon, more than eight months after the Calcutta-Melbourne tram did the rounds in the Australian city.

It was flagged off by Mr Subhas Chakraborty, state transport minister, a few minutes after 3 p.m. But it was more a labour of love of the CTC's employees, especially those at the Belgachhia depot.

They got the tram ready for the journey in less than four days by burning the midnight lamp. Work on the tram continued till more than two hours after midnight today.

The tram — number 609 — is now enjoying a fresh lease of life. It was damaged in a collision last year and has been on the roads since 23 January, Netaji's birthday, this year, after extensive repairs at the CTC's workshop.

But the freshly-painted tram showed no sign of the "injury" or the road-weariness entailed by an uninterrupted nine-month run on the city's ill-maintained tracks.

The gleaming white, the eyes of the goddess painted in blue and messages from the Australian trammie, Roberto d'Andrea, and Michael Douglas, a lecturer at the Royal Melbourne Institute of Technology, whose idea the exchange of tram-culture is, hid the tram's chequered history.

The tram, carrying a photographic exhibition of trams and the life around it in Melbourne, will initially run on route 1 — between Belgachhia and Esplanade — and route 2 — between Belgachhia and Dalhousie.

It would then run on other routes in the north, a CTC official said. Later still, it may be allowed to get a run of the city's southern routes.



Mr Robert d'Andrea, an Australian trammie, and engineer Michael Douglas with passengers on the footboard of the Melbourne-Calcutta tram on Wednesday. — The Statesman





via Alipore and the Maidan. The architecture around Kalighat has a 1920s art deco and California Bungalow feel. Tram lines around here have a 'right of way' reservation.

From Kalighat Depot, Calbourne did the shorter run to the Esplanade via Alipore, the Zoo and the Maidan, retracing its steps on route 30.

Next for Calbourne was the Gariahat Depot route along the Syed Amir Ali Avenue past Park Circus Depot to AJC Bose Road. Calbourne took a left turn at Moulali Junction tracking along Lenin Sarani where the tram line runs along the kerbside in each direction to and from the Esplanade. In those days, Gariahat Junction linked the depot to the Ballygunge Terminus for route 25 Ballygunge to Esplanade via Gariahat Depot.



Trips were made to the Nonapukur Workshops to include a visit to the tram building and meet maintenance trammies. The workshops house a fascinating tram building and maintenance areas that still do everything from melting metal to electrical, wheel and body shop repairs.

And finally, Calbourne tracked to the Park Circus Tram Depot. In 1997, of all the tram depots in Calcutta, Park Circus reminded me most of the South Melbourne Depot that harboured some really eccentric trammies and were the hub for many tram routes that originated from here. The Park Circus trams tracked many of the inner north and inner south lines. The route between Elliot Road and Nonapukur Workshops and Rafi Ahmed Kidwai Road is especially quite narrow. A beautiful tram line that turned left at Wellington Junction into Lenin Sarani and onto the Esplanade Terminus.

*This concludes the second part of Calcutta-Melbourne Tramjatra series of Roberto D'Andrea. His Tramjatra memories of events held in Calcutta and Melbourne as a part of an annual tram festival held alternatively in India and Australia. Please stay tuned for the next part in the upcoming edition of Rail Canvaz.*

*All photographs provided by the author.*



# DHR Through Images



All photographs provided by the Darjeeling Himalayan Railway Society (DHRS)

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All photographs provided by the Darjeeling Himalayan Railway Society (DHRS)

# DHR Through Images



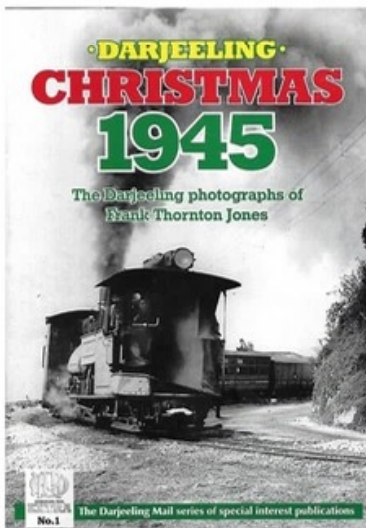
All photographs provided by the Darjeeling Himalayan Railway Society (DHRS)

# From The Bookshelf

## Highlights from the DHRS Library of Publications

**Paul Whittle**

Since its formation in 1997 the DHRS has published a wide variety of books, booklets and DVDs about the DHR. Here is a glimpse of just a few examples:



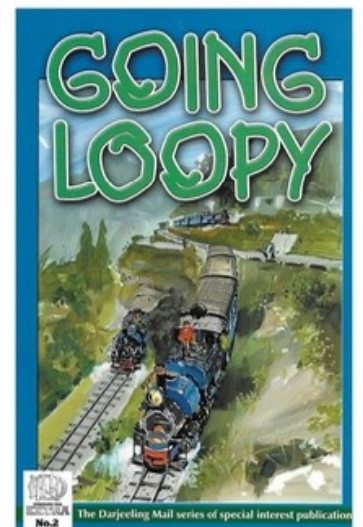
### **Darjeeling: Christmas 1945**

Although Darjeeling had long been a garrison town, the advent of World War 2 led to the area being designated an 'R&R' (Rest and Recuperation) centre for servicemen on leave or recovering from wounds or disease. The demands placed on the DHR were truly staggering; in 1943-44 alone the DHR (which then included branches to Kishanganj and the Teesta Valley) carried 769,000 passengers and 150,000 tons of freight.

Extra services sometimes ran at very short notice, and for the sick or wounded the DHR constructed a five-carriage ambulance train, the sides painted white with prominent red crosses. The booklet's author, Frank Thornton Jones, was serving in the RAF and these are his rare photos from a visit to Darjeeling in 1945.

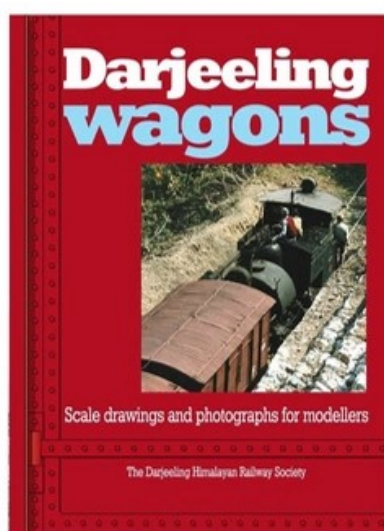
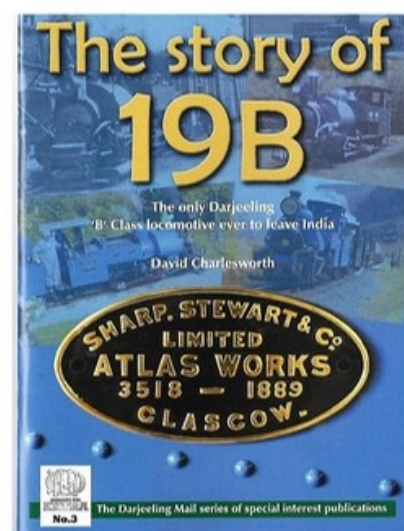
### **Going Loopy**

As originally constructed in 1879-1881 the DHR was effectively a tramway, laid alongside the existing Hill Cart Road, and built in the belief that the gradient would be practicable for steam traction. Sadly, this was soon found to be wrong and loops and reverses (or zigzags) were constructed for trains to surmount the steep gradients in rising from 398ft to 7,407 ft, over little more than 40 miles. Over the years the annual monsoons have frequently played havoc with the DHR, washing away long sections of track and forcing engineers to relay the formation, often in new locations. As a result, the number of loops (now 3) and reverses (now 6) has also been subject to change and this detailed guide gives the full and intriguing story of 'the railway that will not keep still'!



## The Story of 19B

It was only in 2000 that the first diesels entered service on the DHR and of all the British built steam locos just one has left India and returned to the land of its construction. 'B' Class no.19 was built by Sharp Stewart & Co, Glasgow and arrived on the DHR in 1889. Withdrawn from service in 1960 it narrowly escaped scrapping, being bought by an American enthusiast for his private railway and later put on display at the Hesston Steam Museum (Indiana, USA). Here the loco again narrowly escaped destruction in a disastrous fire of 1985 and had to be bulldozed out of the rubble of the loco shed. Finally, in 2003 19B arrived back in the UK and extensive restoration has been carried out based on the private railway of DHRS President, Adrian Shooter with two replica DHR carriages built at the works of the famous Ffestiniog Railway. After Indian Railways replaced the 1855 Leeds-built boiler of 'Fairy Queen' in 2016, 19B now has the oldest locomotive boiler in the world. Certainly, it is also the most widely travelled member of its class!

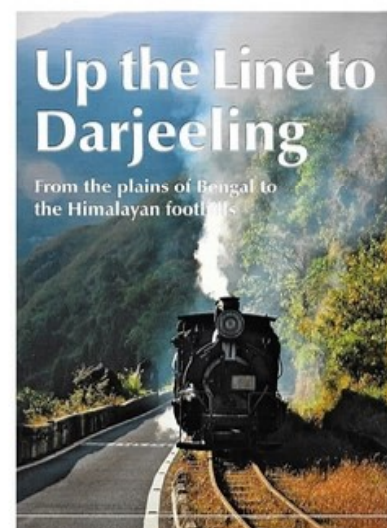


## Darjeeling Wagons

Although it also had a strategic military purpose, the DHR was constructed primarily for freight. Up the hills to Darjeeling went foodstuffs (especially rice), coal and machinery whilst downhill came the considerable output from the scores of tea estates. At its busiest time during WW2 the DHR had a fleet of over 600 freight wagons. With increasing road competition this had reduced to 379 in 1971 and to a mere 64 when commercial freight services ended in 1992. Sadly, few survived scrapping but of those that remain, and thanks to encouragement by the DHRS, the DHR has restored a small fleet of covered vans and flat-bed wagons. These are now used on special occasions and for recreating 'old time' scenes for photographic charters, the first of which ran in late 2016. The book comprises 7mm scale drawings and illustrations and is a must for any keen modeller wanting to feature the DHR on his layout!

## Up the Line to Darjeeling

This latest addition to the DHRS library was based on an immensely popular ten-year series in the Society's journal – the 'Darjeeling Mail'. From 2016, the series was also a valuable reference for UNESCO India's Comprehensive Conservation Management Plan (CCMP) plan for Indian Railways. This four-year working relationship resulted in Indian Railways giving the Society access to their work and research. The maps of the line are the most accurate ever published and include details of lost loops and sidings, gauge conversions, and the innumerable level crossings. (See also the separate article by the author, DHRS Editor David Charlesworth).

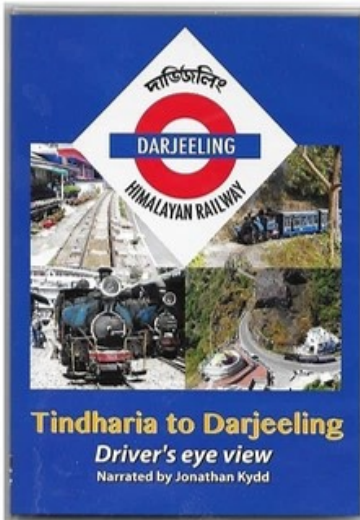
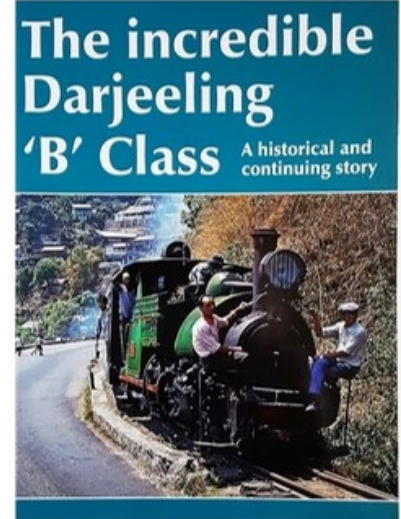


### The Incredible Darjeeling 'B' Class

It is hardly coincidence that the loco plinthed in front of Indian Railways' HQ at Rail Bhavan is a DHR 'B' Class. For whilst these were not the earliest type to work the route, the enduring image of the DHR is of one of these diminutive locomotives fighting its way up the hills, its five-man crew (driver, fireman, coal breaker perched on top and two sanders on the front buffer beam trickling sand onto the rails to maintain adhesion) working flat out at a top speed probably little more than 10 miles an hour!

First built in 1889, the design endured almost unchanged until the final example was delivered almost forty years later in 1927. Aside from UK manufacturers, three locos were built by Baldwins (USA) and another three were assembled from spare parts at the DHR's own workshop at Tindharia. Indeed, there is also one loco built by Indian Railways' Golden Rock Workshop as recently as 2004.

One unusual feature often remarked upon is the open-backed cab design; the surprising explanation is that the very earliest locos were expected to run back-to-back in pairs. In the event this proved impractical, but the cab design endured in all the later types. All this and much more is covered in the book including the bizarre streamlining of loco no. 28 in 1942, and the locations of all surviving examples of these iconic and truly remarkable locomotives.



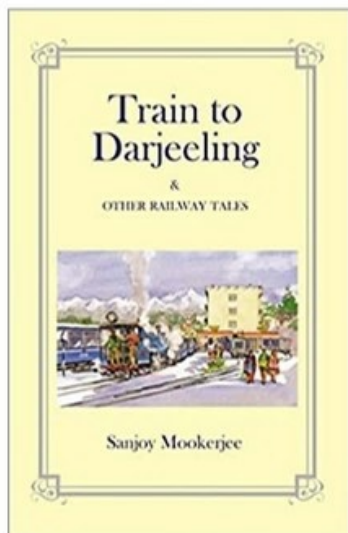
### Tindharia to Darjeeling – Driver's Eye View (DVD)

For the first time we can all now enjoy a driver's view of much of the DHR's stunning route. Filmed in glorious clear sunny weather in 2020 we ride aboard a 'B' Class steam-hauled charter train departing halfway up the line at Tindharia. The loco-mounted high-definition camera is backed up by some impressive drone footage and the narration includes points of interest and the DHR's remarkable history. A planned second DVD will cover the rest of the line.

All the above items and many more are available from the DHRS on-line shop at [www.dhrs.org](http://www.dhrs.org)



*All the images of book covers were provided by DHR Society.*



# TRAVELLING ON NOSTALGIA EXPRESS

**Author:** Sanjoy Mookerjee

**Year of publication:** 2020

**Publisher:** Towards Freedom, Kolkata

**Pages:**106

**Price:** Rs. 280/-

*a book review by*  
**Atulya Sinha**

The conversation inevitably takes a professional turn when a seasoned railwayman sits down for a cup of tea! Reading this book is like having a relaxed conversation with the illustrious author Mr. Sanjoy Mookerjee, who served in the Indian Railway Accounts Service and retired as Financial Commissioner (Railways) after a distinguished career of 38 years. Now he is a dedicated rail enthusiast striving to preserve the country's railway heritage.

The author's passion for the Railways began at a very early age. This is how he describes his arrival at Sealdah station en route to Darjeeling, at the tender age of seven: "As we inched towards the station through the city's crowded roads, full of hand-pulled rickshaws, trams, red coloured double-decker buses with symbols of snarling royal Bengal tigers painted on its sides, noisy & unruly motorcars, over-laden handcarts and smoke-belching lorries, each jostling with the other for space to move, I felt a lump deep down my throat. So, jumping out of our car, clutching my mother's hand, I gratefully scampered inside the station, to seek refuge from the chaos without, only to land upon a sea of humanity gorging out of suburban trains, pushing way anything or anyone crossing its path, as the 'Babus' of Calcutta went to work, while the big station clock proudly announced that the time was 8.30am."

What follows is an evocative account of train travel in India in the early 1960s, as seen by an impressionable child. He carefully guards his family's luggage, consisting of "leather bound suitcases and a couple of canvas 'hold-all' bedrolls secured by leather belts with brass buckles" apart from his favourite BOAC bag which he tucks under his arm. "How could I leave without a sneak preview of the



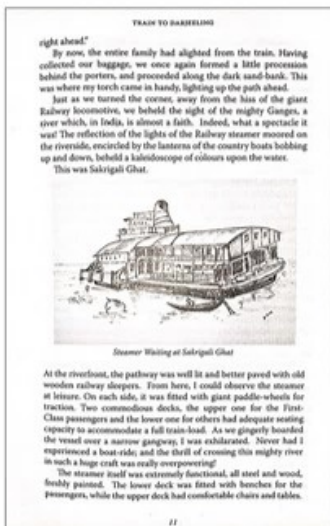
*Train to Darjeeling*

It was the autumn of '62. Kolkata, or Calcutta as it was then called, was decking up to welcome Goddess Durga. The schools had closed for their Pooja holidays and the travel bug had caught the adventurous Bengalis in right earnest! Hills being the favourite destination, why should I be left behind? So, on one such morning, I stepped into Sealdah Station, for my first train journey to Darjeeling, the Queen of Hill Stations. Having recently relocated to this overwhelmingly crowded metropolis from the relatively quiet habitat at New Delhi, and joining a new school in mid-session, I was fervently looking forward to a cool and peaceful holiday with my parents and the other. As we inched towards the station through the city's crowded roads, full of hand-pulled rickshaws, noisy trams, red coloured double-decker buses with symbols of snarling royal Bengal tigers painted on its sides, hooting motorcars, over-laden handcarts and smoke-belching lorries, each jostling with the other for space to move, I felt a lump of nervousness deep down my throat. So, jumping



steaming black and gold locomotive ahead, which had been assigned to haul us?" wonders the author, and begs his father to take him for a closer look. As they approach the Iron Horse, "I could see a big, curved, red-painted pipe, shaped like an elephant's trunk, disgorging water into the engine's reservoir. The wheels of the engine were of two sizes; those in the middle being twice as big as I, with spokes like that of the Ashok Chakra on our national flag, while the ones in front were much smaller and solid... Once in a while, with a short hiss, the engine would let out a burst of burnt-out coal through a chute below, while the tall chimney of the engine steadily belched out black smoke, which escaped through the slits on top of the platform shed. The animated atmosphere around the locomotive sent a feeling of wild excitement through me."

When the train halts at a small station, his mother offers him tea, which was forbidden at home. "I gingerly held the steaming earthenware cup with my handkerchief, inhaling its flavour, as I savoured the endearing sweetness of the beverage. This was hardly the tea they made at home. Rather, it had a pleasing aroma of dry earth, mixed with the rustic taste of jaggery used as sweetener. This was the first time that I had tasted this ultimate drink of India, nicknamed 'Kulhar-wali Chai'..."



Though written from a child's viewpoint, the details given in this chapter are historically accurate. In those days, the journey from Sealdah to Darjeeling used to take almost 24 hours, as it involved a Broad Gauge train journey from Sealdah to Sakrigali, a ferry ride across the River Ganges to Manihari Ghat, followed by a Metre Gauge train to Siliguri and – finally – a trip on the Narrow Gauge Darjeeling Himalayan Railway, the country's oldest mountain railway route. "Boarding the toy train at once transported me to fairyland!" remarks the author. "It was as if one of my life's greatest ambitions has been fulfilled."

The author's tales about his long Railway career transport the reader across the length and breadth of Indian Railways. "I still recall that day when I,

as a railway probationary officer, passed through those ornate gates for the first time, into the impressive precincts of the Railway Staff College at Baroda, sitting on the back seat of a noisy auto-rickshaw along with my regulation steel trunk and 'holdall' bag." Many years later, he had the opportunity of heading that hallowed institution, by then renamed National Academy of Indian Railways. In another chapter, he recounts his experiences while working as Divisional Railway Manager in remote Tinsukia, where – against all odds – he successfully set up a railway museum.

This book contains many interesting railway anecdotes, including one about a probationer who is compelled to share his berth with an unlikely companion. In another story, a brash young officer decides to meet a General Manager – with unexpected consequences! Yet another young officer



travels deep into the forests of the Terai, accompanying a British family who want to see the places where their ancestor had worked – but an unforeseen glitch arises. The visitors risk missing their flight, but for the resourcefulness displayed by Mr. Chatterjee, Station Master of Dudwa station. Another unforgettable character is Mr Robinson, "a burly, weather-beaten Anglo-Indian Permanent Way Inspector" whose track maintenance team works night and day to rescue the passengers trapped in a tunnel.

**TRAIN TO BARDELI**

the track inside the tunnel, since it was impossible to bring or utilize any machinery in the hilly terrain. In a rare display of synergy, the passengers chipped in under the able guidance of Mr. Robinson. Soon the lead locomotive in the line ahead was also set right.

Now the big question in everyone's mind was, "Will it hold?" The engine driver insisted that a trial run was necessary. So, the giant locomotive was uncoupled from the train and slowly made to move towards the tunnel exit, while the entire railway gang and the assisting passengers held their breaths. With prayer on their lips, the anxious crowd watched as the engine guffily rolled over the damaged track.

And to everyone's relief, the ground held fast!


Outside the tunnel, the fury of the downpour had also abated and the faint rays of the afternoon sun gave heart to one and all. It was at that point of time that our young engineers arrived at the site, utterly exhausted!

But there was no rest to be had. The job had to be completed since time was running out and sunset was only a couple of hours away. While the sleepless and hungry passengers waited anxiously, the train was gradually drawn forward under the watchful eyes of Mr. Robinson, his dedicated maintenance gang and our young engineers. The metallic screech of the wheels suddenly transformed itself into shouts of joy and relief from the railwaymen and the passengers alike, as slowly but steadily, the train emerged from the tunnel, victorious and proud! A fewish crowd of hush-sleeping, chipping, cheering and hugging ensued; women shed tears of happiness and thanked the Almighty for their deliverance. Children shrieked in unbridled glee at the sight of emerging daylight, completely forgetting their hunger pangs!


**RESCUE**

Our young engineer had never experienced such a sight before. In college, no professor had ever prepared him to face a situation such as this. He was simply overwhelmed!

After collecting his passengers scattered around the tunnel, the train finally trundled off towards its destination, leaving an eerie gloom behind. The stillness of the forest was punctuated only by the pitter-patter of raindrops on leaves. Each person sat rambling; some were silent, others smoking a wet 'bid' or cigarette which they had quietly preserved, dry and secure, within the folds of their work clothes, perhaps as a reward to themselves for a task well done!



*The Train Emerges Safe*




*The Railway Gangmen, after the rescue*


Mr. Robinson invited our young engineer into his tent for a cup of steaming, hot tea, which he had brewed himself for his 'boys'. They even gratefully accepted their boss's condescension acknowledging his endearing "Shubash", with disarming smiles, their faces aglow with pride! The PWI ordered one of his men to collect the rice, lentils and potatoes from the kitchen stores, so that 'Khichudi', a broth-like dish consisting of rice, lentils and vegetables can be cooked for the famished railwaymen. Promptly a fire was lit, using the spare kerosene available and the few remaining pieces of dry wood. A couple of antsy-looking chaps dived into the bushes in search of jungle fowl so that a fitting celebration dinner could be organized.

Only after his staff had drunk their tea, did Mr. Robinson take up his cup. Our young probationer took this opportunity to ask a question, the answer to which had been bugging him for a while.


**TRAIN TO BARDELI**



The first commercial passenger train in the Indian subcontinent, which ran between Bar-Barder (Bombay) and Thane on 16th April 1853 was operated by the Great Indian Peninsula Railway (GIPR). These Steam locomotives, built by Stephenson and Watt, hauled the train during its maiden run. The GIPR was also the pioneer of railway electrification when the electric locomotives were first introduced during the 1930s.




For a long time, the iconic WV Class of steam locomotives (W- broad gauge or wide gauge, V- passenger) was the mainstay of the Indian Railway's passenger operations. Due to its high speed capability (200 kmph), this locomotive with a distinctive, cone-shaped smoke and steam stack, headed most of the important mail/express trains during the steam era. Although of north-american design, in India, Chittaranjan Locomotive Works (CLW) in West Bengal began manufacturing them from 1963.




Travelling by a railway saloon or private coach is a fairly-rare experience. During the British era, high officials and Indian princes often had personal trains for their travel. The sketch above displays the saloon attached to a dedicated steam engine (built 1870), used for journeys by the British Prince of Wales during his visit to India. "Palace on Wheels" the first luxury tourist train in the country was originally created by using the classic saloon cars of India maharaja!


**LOCOMOTIVE**



As the name signifies, the Bombay, Baroda & Central India Railway (B&CIR) was one of the earliest railway companies in India, which started running trains between Bombay (now Mumbai) & Baroda (now Vadodra) from 1864. It was also the first railway to run suburban services upto Churni near Mumbai as early as in 1867.



The WDM-3 class broad gauge diesel electric locomotives are the mainstay of the Indian Railways. These are versatile and can work both passenger and freight trains. Originally imported from the American Locomotive Co. (ALCO) in 1962, the Diesel Locomotive Works of Varanasi began manufacturing them from 1964.



The picture shows the 18 gigawatts digital microwave tower installation. Prior to the advent of optical fibre cables, digital microwave technology was used extensively for train communication and control. Later its application was further expanded to other operations including computerized ticketing.

A special mention must be made of the wonderful illustrations that accompany the text of this book. There are some superb sketches by Mrs Sudakshina Mookerjee and other artists, apart from rare photographs, throughout the book. David Charlesworth's painting of Darjeeling station adorns the front cover.

This book can be enjoyed by readers of all ages.



Image courtesy: Anamitra Bose



## Photo Junction



AEB & DPWCS fitted Gooty (GY) WDG 4 # 12800 sneaking into Nagarcem-II tunnel with departmental rake. : **Sourav Dutta**



Mumbai - A life in a metro.... Where people do not even have time to wait for the platform to arrive...it's the daily race for livelihood... Dativali, CR Zone, Mumbai. : **Roshan Rajeev**



39123 NGA TMT advertised ERODE WAP-7 powering MYSORE JN - DARBHANGA ~ BAGMATI EXPRESS cruising through SGT, WHITEFIELD : **Nischay Shetty**



BHEL Manufactured Locomotive For CSPGCL Korba Numbered D2 Moves Light Towards Korba : **Praveen Mishra**



## Photo Junction



The staff special bound for Mettupalayam chugs past the tea plantations and the bridge powered by an X-Class Steam locomotive "Neela Kurinji" : **K Gautham Karthik**



Pleasant Monsoon Weather & Visakhapatnam WDG3A Twins Fully Succumbed To A Deep Slumber With A Loaded BOXNHL Rake At RAIR, While The Eastern Ghats Create The Backdrop ! : **Anwesh Anshuman**



Freshly overhauled 22783 AJJ WAP-4 powering MAYILADUTHURAI - MYSORE JN ~ THANJAVUR SF EXPRESS. cruising through PALHALLI HALT. : **Nischay Shetty**



Recently overhauled by HWH ELS - 30487 HWH WAP-7 banks on the sharp turn near BNXR with 02988 All SDAH Special. : **Anish Banerjee**



## Photo Junction



Green ALCo, Red LHB, Blue sky and the yellow fields and the hills..  
What more could you ask for! GOC WDG-3A duo with Pothigai express  
bound for Sengottai. : **K Gautham Karthik**



11339 + 11180 GTL WDM3D twins powering KACHEGUDA - MYSORE  
JN ~ FESTIVAL SPECIAL cruising through VARUNA CANAL LC :-  
MYSORE. : **Nischay Shetty**



Izzatnagar's School bus tackles the curve at Manigram with an empty  
BOXN from the Sonar Bangla Cement Factory at section MPS as it  
heads towards RPH. : **Souvik Pal**



Oxygen Express from Sanathnagar with oxygen-carrying trucks rolled  
on on the way to Rourkela with WDM3A duos from Maula-Ali in lead. :  
**Ankit Koranne**



## Photo Junction



Riding on the Nation's first Aerodynamic DEMU rake still serving the nation with pride on the land of red soils and iron ore. In frame, 78032 Down BADAMPAHAR TATANAGAR DEMU preparing to start the return trip towards TATANAGAR. : **Arkopal Sarkar**



On a busy rainy afternoon, 63104 Down LALGOLA SEALDAH PASSENGER arriving KRISHNANAGAR CITY JN. with a brand new RCF made MEMU rake. : **Aishik Bhattacharjee**



Once, the most busiest has now become lonely.... It's the rarest dream any mumbaikar would have dreamt of where trains are waiting but there are no people around...Mumbai Chatrapati Shivaji Maharaj Terminus : **Roshan Rajeev**



A Dakshineswar bound Metro descends from Baranagar Metro Station and heads towards the final station - Dakshineswar on the recently inaugurated extension of Kolkata Metro. : **Souvik Pal**



## IR helping the nation to breathe in the Second Wave of Covid-19



Photo courtesy: Sumit Pramanik

Indian Railways played a crucial role in India's battle against the Covid-19 by running **Oxygen Express** all over the country. In the second wave of deadly virus, when various parts of the country were gasping for breath, Indian Railways ran superfast Oxygen Expresses to meet the soaring demand for medical oxygen. These were mainly transported either through Ro-Ro (Roll On-Roll Off) services or through cryogenic tankers placed over wagons. As of 18<sup>th</sup> May, 2021 over 11,030 metric tonnes of oxygen has been delivered to over 13 states by IR. Most of the oxygen expresses originated from steel plants of Odisha, Jharkhand, Chhattisgarh and West Bengal. The challenge of quicker transportation of oxygen for medical emergency was splendidly met by the national carrier.

## Tunneling works completed in East-West Metro



Image courtesy: Arkapal Sarkar

On May 15, the entire tunnelling process of Kolkata's East-West Metro was completed. TBM 'Urvi' made a breakthrough at Boubazar, finally connecting Sealdah with the rest of the tunnel to Howrah Maidan – thus the west-bound tunnel was finally completed. This 800-metre stretch was the last portion remaining as it was left incomplete by abandoned TBM 'Chandi' which hit an aquifer in 2019, leading to massive damage to the whole area. With this achievement, the 16.6 Km metro corridor is in the final lap of completion. This feat was achieved by Kolkata Metro Rail Corporation (KMRC) following all Covid-19 protocols.

## ER Commissions Two FEDL stretches



Eastern Railway commissioned two more electrified double-line sections in this pandemic situation. The two sections are 10.36 Kms of Katwa-Gangatikuri and 9.36 Kms of Karnasubarna-Chaurigacha in the Katwa-Azimganj section. This major developmental project has nine bridges including a 200m bridge over river Ajay. Katwa yard was also remodelled and interlocking process was being carried out at four major stations namely Katwa, Gangatikuri, Karnasubarna and Chaurigacha. With this, the travel time between Howrah to Azimganj will be reduced to a fair extent.

## Indian Railways completes Arch Construction of Chenab Rail Bridge



Image courtesy: ANI

The arch of Chenab river bridge, world's highest rail bridge was completed on 5<sup>th</sup> April. One of the key bridges of the Udhampur-Srinagar-Baramulla Railway Link (USBRL) Project, this bridge was strategically very important and a technologically challenging task due to rough terrain and high altitude. The 1.315 Km long bridge was constructed at a cost of Rs. 1486 crores to boost the connectivity to Kashmir Valley with the rest of India. The bridge is 35m higher than the Eiffel Tower and 359 metres above the Chenab river bed, making it the highest railway bridge of the world at present. The overall weight of the arch is 10,619 metric tonnes and arch work was done by overhead cable cranes – a first time in Indian Railways. The bridge is made to withstand strongest earthquakes and windspeeds upto 260 kmph. The whole railway-link project is expected to be completed in next two and half years.

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