

CHAPTER IV

MODERNISATION IN SOUTHERN RAILWAY

The greatest single contributing factor to the remarkable progress of our country is the rapid means of transport. For business proposes, inter national trade, efficient administration of large scale organizations and good government, means of rapid contact between people are absolutely essential. After the inauguration of first railway line in South India many changes have taken place in railway services. Being the public utility service it had to march with the times and can not stand back. Southern Railway in its long run tried not only to go with the times but to go ahead of time.

MODERNISATION IN COACHES

In the initial stages wooden coaches, similar to horse driven carriages of that age were used¹. The first railway coaches in South India had a timber under frame and body, four wheels, outward opening doors and longitudinal seats of 40 to 60 passengers with little hip depth or knee room and weighed from 8 to 15 tons. There were no lavatories in the compartments and little protection was offered from rain, storm, heat etc². They also had no lighting. But in the beginning of the 20th

century the wooden bodies were built up with steel frames. But now a days Southern Railway's light weight rolling stock designs have been evolved in mild steel, stainless steel or even aluminium - alloys incorporating the features of improved riding facilities and security to passengers³.

Modern Railway coach in South India offers safe and relaxed travel providing better room, more comfortably inclined seats, efficient external and internal lighting, door catches, fans, sleeping bunks, glass and ventilator windows, lavatories with stainless steel pans, wash basins, mirrors etc. They are sprayed with limpet asbestos for heat insulation and have safety features against telescoping and fire hazards. Some trains have vestibule coach also⁴.

The riding comfort depends exclusively on a good bogie construction. The bogie is the part which is most liable to wear and tear. It may be noted that the actual weight of the coach is approximately 7 tons and the axle load is reduced by nearly 2 tons and there fore smaller wheel diameter can be adopted without any disadvantage. Modernization in Southern Railway leads to the emergence of IRS (Indian Railway's Light Weight Steel) Coaches. These IRS coaches bring safe and comfort journey to the passengers⁵.

MODERNISATION IN SLEEPERS

When the British started railways in South India wooden sleepers were used for the running of trains. But later due to the shortage or the diminishing of the wood resources, steel and cast-iron sleepers were used. It had experienced that cast iron sleepers were not suitable for high speeds. Therefore later concrete sleepers are being used by Southern Railway. These concrete sleepers have great advantages in comparison with wooden sleepers for their longer duration and easy maintenance⁶.

MODERNISATION IN BRAKE

Perfect braking system of the train is very important for the safe and trouble free operation. The vacuum brake has always found favour on Indian Railways and Southern Railway, also been found capable of dealing it with the normal length of the trains. Recent developments in industry have led to a great increase in the length of freight trains and the development in the vacuum brake is taking place to meet the requirements of the longer and heavier trains⁷. Similar improvements have taken place in the vacuum brake equipment of Southern Railway's passenger trains.

'Westinghouse Vacuum Controlled Straight Air Brake' was used in the locomotives of South India in early period. In this arrangements the locomotive compressed air brake is divided into two separate systems, one controlled indirectly by the driver's vacuum brake valve and providing an air brake application on the locomotive in proportion to the vacuum brake application on the train, the other, under the direct control of the driver's independent brake valve and providing a straight air brake for the locomotive completely independent of the train brake⁸.

'Gresham's Patented Improved Augment Vacuum' brake is another development in this concern. In this layout the exhauster is connected to an exhauster pipe and connection is made from this pipe to the vacuum train via, a two pipe driver's brake valve. The exhauster pipe is also connected to the vacuum chamber side of the brake cylinders via a non- return valve incorporated in a variable vacuum relief valve. When the brake is released, the exhauster pipe is connected to the vacuum train pipe through the brake valve and the vacuum in the two pipes is therefore the same.

The Electro- Pneumatic Brake is another step in this system⁹. The Electro- Pneumatic Brake

is an electrically controlled air brake and this control gives instantaneous response and great reliability. The brake is controlled from a brake controller in the driver's cabin, this energizes wires throughout the train to operate E.P. Valves on each coach. This controller provides very sensitive control and the brakes can be graduated on or off at will.

MODERNISATION IN COMMUNICATION

For the smooth, safe and speedy movement of trains, prompt and reliable means of communication is very essential. As overhead wire communications were found susceptible to a lot of failures because of wire thefts and calamities of nature, it was found essential to install more reliable means of communication. Southern Railway had been developing its own facilities by employing microwave, with super high frequency and channeling system. This modernization of telecommunication has improved the effectiveness of train operations¹⁰.

MODERNISATION IN LEVEL CROSSING

One of the most vulnerable spots on a railway is a level crossing. The protection of level crossing is vital for the railways and also for the road users. Provision of lifting barriers, interlocking of gates, adequate communication and pre-warning facilities have been progressively introduced at busy level crossing gates outside station limits, by Southern Railway¹¹.

MODERNISATION IN SIGNALLING

India's first railways were built and staffed by engineers from Britain. The association

formed then between the railways of the two countries has continued right up to the present day and some Indian Railway technicians still go to Britain for training. Over the years Indian Railways have developed features of their own and signalling is one of the aspects of modernisation. The term signalling is understood to include not only visual indications to the train crews, but also the general control of train running.

Railway signalling is a system which is used to prevent trains from collision. Being guided by fixed rails, trains are uniquely susceptible to collision; furthermore, trains can not stop quickly, and frequently operate at speeds that do not enable them to stop within sighting distance of the driver.

The earliest rail cars were first hauled by horses or mules. A mounted flagman on a horse preceded some early trains. Hand and arm signals were used to direct the “train drivers”¹². The most common form of mechanical signal world wide is the Semaphore signalling¹³. To enable trains to run at night, one or more lights are usually provided at each signal. Typically this comprises a permanently lit oil lamp with movable coloured spectacles in front that alter the colour of the light. The driver therefore had to learn one set of Indications for day time viewing and another for night time viewing. Foggy and poor visibility conditions gave rise to flags and lanterns. Wayside signalling dates back as far as 1832, and used elevated flags or balls that could be seen from a far. The simplest form of operation is the time table operation, it is to run the system according to a time table. A fixed schedule is drawn up with which every train crew must be familiar. Trains may only run on each section of track at their scheduled time, during which they have ‘possession’ and no other train is permitted to use the same section¹⁴. When trains are running

in opposite directions on a single track rail road, meeting points are scheduled, at which each train must wait for the other at a passing place. Neither train is permitted to move before the other has arrived. The display of two green flags (green lights at night) is an indication that another train is following the first and the waiting train must wait for the next train to pass. In addition, the train carrying the flags gives eight blasts on the whistle as it approaches. The waiting train must return eight blasts before the flag carrying train may proceed. The time table system has several disadvantages. First, there is no positive confirmation that the track ahead is clear, only that it is scheduled to be clear. The system does not allow for engine failures and other such problems. Another problem is the system's inflexibility. Trains can not be added, delayed or rescheduled without advance notice.

With the advent of Telegraph in 1851, a more sophisticated system became possible because this provided a means where by messages could be transmitted ahead of the trains¹⁵. The telegraph allows the dissemination of any time table changes, known as train orders. These allow the cancellation, rescheduling and addition of train services. Train orders allowed dispatchers to set up meets at sidings, force a train to wait in a siding for a priority train to pass, and to maintain at least one block spacing between trains going the same direction. The introduction of electrical telegraph made it possible for staff at a station or signal box to send a message to confirm that a train had passed and that a specific block¹⁶ was clear¹⁷. This was called absolute block system. Fixed mechanical signals began to replace hand signals from 1830s. These originally worked locally, but later it became normal practice to operate all the signals on a particular block. When a train passed into a block a signalman would protect that block by setting its signal to danger. When an all clear

message was received, the signalman would move the signal into the clear position. Before allowing a train to enter a block, a signalman must be certain that it is not already occupied¹⁸. When a train leaves a block, he must inform the signalman controlling entry to the block. Even if the signalman receives advice that the previous train has left a block, he is usually required to seek permission from the next signal box to admit the next train. When a train arrives at the end of a block section, before the signalman sends the message that the train has arrived he must be able to see the end of train marker on the back of the last vehicle. This ensures that no part of the train has become detached and remained within the section. The end of train marker might be a coloured disc (usually red) by day or a coloured oil or electric lamp at night. If a train has entered the next block before the signalman sees that the disc or lamp is missing, he will ask the next signal box to stop the train and investigate¹⁹.

In the very early days of railway signalling, white light for clear and red light for danger were used²⁰. Green was originally used to indicate caution. But subsequently green light replaced white for clear²¹.

Automatic train control was first adopted on a wide scale in London Underground Railways. But in India, in 1946 an automatic train control committee was set up in Bombay headed by Sir George Cuffe, General Manager of the Bombay - Baroda and central India Railways. Two types of inductive systems and a contact ramp system²² were tested. All three types proved technically successful but the inductive system was found impracticable because of line side pilferage and the ramp system was regarded as inferior technically to others. Further experiments were postponed.

Another major step in the field of signalling is route signalling and speed signaling. Under route signalling a driver is informed which route the train will take beyond each signal. This is achieved by a route indicator attached to the signal. The driver uses his route knowledge, reinforced by speed restriction signs fixed at the line side, to drive the train at the correct speed for the route to be taken²³.

Under speed signalling the driver is not informed which route the train will take, but the signal aspect informs him at what speed he may proceed. Speed signalling requires a far greater range of signal aspects than route signalling, but less dependence is placed on driver's route knowledge.

Next step in the field of signalling is cab signalling. Cab signalling is a system that communicates track status information to the train cab (driving position), where the train driver can see the information. The simplest systems display the track side signal aspect, while more sophisticated systems also display allowable speed and dynamic information about the track ahead. In modern times, a train protection system is usually overlaid on top of the cab signalling system to warn the driver of dangerous conditions and to automatically apply the brakes and bring the train to a stop if the driver ignores the dangerous situation²⁴.

MODERNISATION IN LOCOMOTIVES

Metre Gauge Steam Locomotives

In 1872 metre gauge as a standard gauge for British India was well established. Among the

metre gauge state Railways, Rajputana-Malwa Railway was the pioneer. Lord Mayo can be said to be the author of metre gauge Railways in India. South Indian Railway Company was the first railway company choosing metre gauge extensively for their lines²⁵. They converted substantial lines built on broad gauge alignment into metre gauge.

In 1879 about 400 locomotives had been put into service on metre gauge system. Rajputana-Malwa Railway owned 136, South Indian Railway owned 106 and other state Railways owned 149. The fleet of South Indian Railway included 24 numbers of 0-4-2 design, 78 numbers of 0-6-0 design and 4 numbers of 0-6-0 T design. The expansion of metre gauge was very rapid from 1879 to 1899²⁶.

After the First World War new metre gauge designs were developed²⁷. YA (9 ton axle load 4-6-2) YB (10 ton, 4-6-2) YC (12 ton 4-6-2) YD (10 ton 2-8-2) and YE (12 ton 2-8-2) were the original classes. In 1940 South Indian Railways had four metre gauge electrical locomotives running between Madras Beach and Tambaram²⁸. The Y classes were designed for India and were commonly known as Indian Railway Standard Locomotives. During the Second World War large number of class WD 2-8-2 type were imported from U.S.A. Only a small portion was received for the Southern part of the country.

Broad Gauge Steam Locomotives

In 1850 most of the locomotives were small tank locomotives and its speed was 20 miles an hour for its passenger trains and 12 for its goods trains²⁹. Madras Railway Company purchased 0-6-

0 locomotives and a few 0-4-2 locomotives from M/s. Bayer Peacock, U.K. Perambur workshop also built nine locos. In 1859 Great Southern of India Railway Company built the broad gauge line from Nagapattanam to Tiruchirapally. Great Southern of India Railway Company procured 21 locomotives mostly of 2-4-0 or 0-6-0 design from 1860 to 1870. South Indian Railway took over the Great South Indian Railway and Carnatic Railway along with the rolling stock in 1874. After 1908 the new South Indian Railway procured a large number of broad gauge locos and 0-6-0 and 4-4-0 designs were their favourites. The colour scheme was generally a reddish brown for passenger locomotives and black for goods locomotives³⁰. The Golden Rock workshop near Tiruchirapalli maintained all South Indian Railway locomotives. The major other loco sheds of Southern Railway are situating at Basin Bridge (Madras), Podanur, Shornur, Quilon, Erode, Tondiarpet, Arakkonam, Jolarpettai, Bangalore, Renigunta.

The Second World War saw an enormous increase in traffic on Indian Railways and over 900 Broad Gauge engines were procured from America and Canada. After the war, a new 4-6-2 passenger locomotive was designed as a result of the research of several years, with boiler efficiency valve gear and the lateral reactions of locomotives at speed on different kinds of track³¹.

Diesel Traction Locomotives

In 1891, the first internal combustion locomotive was equipped with a small petrol engine built by Daimler, at Stuttgart. But the first successful diesel engine was built only in 1897. In 1924, the first high-powered diesel electric locomotive was completed for service in Soviet Union

and Professor Lomonosoff, the Russian Locomotive Engineer was mainly responsible for its construction³². In Germany this diesel locomotive was built by the Esslingen Maschinenfabrik and it was capable of undertaking the same duties the steam locomotive being built at that period. The application of the fluid coupling to automotive vehicles to give a smooth take up of the drive and eliminate clutch wear was first made by Harold Sinclair³³, who understood that it would be a valuable adjunct to mechanical transmission systems for diesel locomotives and railcars³⁴. In 1931, the first locomotive equipped with fluid coupling was constructed by Hudswell Clarke, a Railway Engineer in Germany. The efficiency of the diesel powered locomotive depends largely on correct fuel combustion. The factors governing this operation depended on the fuel injection system and sufficient high compression in the cylinders. If either of these factors is not correct, combustion will be incomplete with a subsequent loss of engine power, wastage of fuel, emission of smoke, uneven running, excessive vibration and engine noise. Smoke in a diesel engine is a sign of inefficiency³⁵.

The major development work in connection with diesel traction in Britain was carried out by the London Midland and Scottish Railway company. In 1938, an experimental three coach articulated diesel train was built. In India Kalka – Simla Railway was the first to introduce internal combustion engines for traction³⁶. In 1915 South Indian Railway procured three rail cars for their Metre Gauge section. These were built by M/S Motor Rail Ltd, Bedford, UK. Diesel locomotives run on all the Zones of Indian Railways³⁷. Southern Railway had five major Diesel Sheds at Erode, Golden Rock Thiruchirappally, Ernakulam, Tondiarpet and Krishnarajapuram.

DC Electrical Traction

Madras was the first city, where Electronic Tramways were introduced. The Madras Electric Tramway Company Limited was in charge of this traction work. The construction of the first track commenced in 1894 and the first tramway section was opened for use in May 1895. Its activities were expanded in 1904 covering a track of over 16 miles. The company used to carry 1,25,200 passengers but it had to close its operations in April 1953.

Indian Railway Board consulting engineers M/S Metz and Mc Lellan in 1927 concluded their investigations on the Madras hydro electric schemes with special reference to Railway electrification in South India. But they did not advise the extension of electrification to Madras because of high cost. In 1929 the South Indian Railway firmly resolved for the electrification of the Madras Suburban services³⁸. This contract was given to English Electric Company for seventeen, three coach articulated units, each consisting of one motor coach and two trailer coaches and 4 Bo-Bo locomotives with two battery tenders. On 2 April 1931, the Governor of Madras opened the metre gauge suburban section from Madras to Tambaram for electrical working. Public services commenced in May 1931³⁹. The construction of new double track and stations, instead of the conversion of the existing lines from Madras to Tambaram was the peculiarity of this Madras suburban electrification. The new line opened new stations and paved the way for new residential development. Basin Bridge station supplied electricity to this. A motor generator was also set up at Egmore for charging the batteries when they came to Egmore. Another sub station was at Minambakkam, 7 miles from Egmore. At Minambakkam transformer and rectifiers were provided

to convert A.C input into 1500 V.DC for traction.

Originally, the suburban services started with a total of 29 trains per day in each direction and in a decade, the number of trains had trebled. The time taken for each trip was 42 minutes stopping at all the 14 stations. All the cleaning, washing and repairs were undertaken in the car shed at Tambaram. The Tambaram car shed had three bays, one for inspection, another for heavy repairs and the third bay for painting. The 1500 V. DC Madras Tambaram system had been converted into 25000 V.AC system from 15 January 1967⁴⁰.

AC Electric Traction

On the night of Pongal on 14 January 1967, the modern system of AC electric traction on 25,000 Volts was started in Madras replacing the old system of electric traction on 1,500 Volts DC. It is a great modernization process in the history of Southern Railway. Even though the changeover involved tremendous work, it had been accomplished overnight without curtailing even a single suburban service. On the night of 14 January 1967, after the passage of the last train, the DC section was switched off finally and the modification work on the section between Madras Beach and Tambaram was taken up for the operation of 25,000 Volts AC. The entire work was completed in 46 minutes⁴¹. The trains on the new system were started at 4 AM on 15 January 1967. The changeover was smooth, efficient and without any accident.

At first for the use of goods and passenger traffic 20 AC electric locomotives were imported

from Japan⁴². These locomotives were made by Mitsubishi of Japan. Each locomotive weighing 52 tons could haul 16 passenger coaches at a speed of 80 Kilometre per hour on level track. Subsequently the Integral Coach Factory, Perambur manufactured electric multiple unit stock with the help of electrical equipments imported from Japan⁴³.

In 13 April 1979 broad gauge section from Madras to Gummidipoondi was electrified. Electrification of Madras – Tiruvallur section was completed on 29 September 1979. With the electrification of these sections, it became possible to run Electric Multiple Units in the areas near Chennai. Tiruvallur- Arakkonam section was electrified on 3 September 1982. Madras- Bangalore section was completely electrified in 1992. Jolarpettai- Erode, Erode – Palghat, Shoranur- Trichur was electrified from 1994 to 2001. The electric traction between Trichur – Ernakulam was going on in 2001. The electrification work between Ernakulam and Thiruvananthapuram was started on 11 August 2001. The electric Locos are maintained at Electric Loco Shed, Arakkonam and Erode. Arakkonam loco shed was commissioned in 1982 and the Erode Loco shed in 1998.

Broad Gauge AC Electric Multiple Units are being maintained at Electric Multiple Unit workshop, Avadi. The present holding of the Avadi workshop is 122 motor coaches and 295 trailer coaches. Broad Gauge Electric Multiple Unit services were introduced between Chennai Beach and Park Town station in Mass Rapid Transist system (MRTS) from 16 september 1991⁴⁴. Presently two projects are on the path of electrification. The first one is from Tambaram – Chengalpattu- Villupuram and Chengalpattu – Arakkonam sections of 197 kilometres. The second project is the electrification of Ernakulam – Thiruvananthapuram section of 320 kilometres.

The advantages of electrification are high horse power locomotives, modern colour light signaling, reliable communication through cables along with train radio communication, regenerative braking and energy conservation.

MODERNISATION IN GAUGES

Southern Railway has opened new avenues in the field of gauges also. When the colonial power started the construction of railways in India there was a controversy regarding the suitable gauges.

Metre Gauge

During the Viceroyalty of Lord Canning, the Public works Department recommended narrower gauges and in 1862 the Indian Branch Railway Company constructed light railways. But during the viceroyalty of Lord Elgin and Sir. John Lawrence there was no narrow gauge railways in South India and also in India. Lord Mayo favoured narrower gauge on ground of economy and the rapidity of railway expansion. Lord Mayo can be said to be the author of metre gauge railways in India⁴⁵. In 1870, a committee consisting of Colonel R. Strachey, Colonel C.H. Dickens, Mr. John Fowler and Mr. A.M. Rendel was appointed to consider the gauge, suitable for the conditions in India. But they didn't have unanimous opinion. Three of the members recommended 2 feet 9 inch while one member recommended 3 feet 6 inch. In 1870 after careful analysis of the situation, Lord Mayo resolved the situation by adopting 3 feet 3 inch gauge as the best gauge for India. This gauge being very close to the metre, rounding off to 3 feet 3 3/8 inch or one metre was made and coined as metre gauge. Thus in January 1871, metre gauge was established in India. Rajputana State Railway was the first to adopt metre gauge system.

Narrow Gauge

Before the formation of Southern Railway as a separate Zone there were ten narrow gauge railway lines existed in South India⁴⁶. These were Bangalore – Chikballapur light Railway of 0.762 metre, Kolar District Railway of 0.762 metre, Tarikere – Narasimharajapura Tramway of 0.610 metre, Tadasa - Heabe Tramway of 0.610 metre, Morappur – Hosur Branch of 0.762 metre, Tirupattur to Krishnagiri Branch of 0.762 metre, Golden Rock – Sircarpalayam of 0.610 metre, Kulasekarapatanam Light Railway of 0.610 metre, Mysore Iron Works Narrow Gauge line and the forest tramway built by the Maharaja of Cochin.

Broad – Gauge

Southern Railway took effective steps in the modernisation process of Gauge conversion. Lord Dalhousie's dictum of one and only one gauge had a short life. The decades of 1980's and 1990's saw remarkable progress in the field of gauge conversion⁴⁷.

In February 1964 the chief minister of Kerala addressed the need for converting the metre gauge line from Ernakulam to Thiruvananthapuram to broad gauge. In May 1969, the Railway board gave sanction to the traffic survey for gauge conversion⁴⁸. In December 1971 the Railway Board sanctioned the conversion estimate for the 220km long line at a cost of 13.6 crore. The Ernakulam – Quilon section was opened as broad gauge on 24 November 1975 and the Quilon – Thiruvananthapuram section on 14 September 1976. Karur – Madurai new broad gauge line was opened for traffic on 6 August 1988 and a parallel broad gauge line from Dindigul to Madurai was opened for traffic on 14 April 1993.

Madurai – Tuticorin and Maniachi – Tirunelveli metre gauge lines were converted to broad gauge and opened for traffic on 21 October 1993. This 188.29 km BG conversion was a great landmark in the Modernisation process of Southern Railway.

A broad gauge line by the side of the existing metre gauge line from Guntakal to Dharmavaram of 101.76km, and the conversion of the existing metre gauge line between Dharmavaram and Bangalore city of 178.53km in to broad gauge was sanctioned in 1971. The work was started on 5 February 1972 and it was commissioned on 26 January 1983⁴⁹.

The metre gauge line between Salem and Bangalore has a length of 232 kilometres. But the new broad gauge line instead of following the circuitous route via Banaswadi and Yashwantpur joins at Baiyyappanahalli. This new broad gauge line came out to 213.3km about 18 km shorter than the metre gauge alignment Salem – Baiyappanahalli section was opened for traffic on 12 January 1997.

Southern Railway proposed the broad gauge conversion of Bangalore city to Mysore in 1971 and the Railway Board sanctioned this project in April 1979. This line was commissioned for traffic on 19 February 1993. Chennai Beach – Tambaram section was converted in to broad gauge and it was opened for traffic on 2 April 1998 and the extension to Villupuram was opened on 1 September 1998⁵⁰. Like wise the branch line between Chengalpattu and Arakkonam was also opened for traffic on 15 December 1999. The conversion of the Villupuram – Tiruchirapalli metre gauge into broad gauge was opened for traffic on 1 September 1998 and the Tiruchchirappalli – Dindigul section was opened for passenger traffic on 6 January 1999⁵¹.

MODERNISATION IN BASIC AMENITIES

For the safe transportation of people Southern Railway has provided a lot of amenities to the passengers. Railway passengers today are very much aware of their rights and privileges⁵². Southern Railway provides excellent services to passengers in the fields of efficient reservation system, punctuality, proper amenities at the stations or maintaining a strong grievance redressal system.

Southern Railway provides the following minimum passenger amenities at all stations except at halt stations.

1. Bench
2. Suitable arrangements for lighting up waiting halls and booking offices.
3. Drinking water supply
4. Improved toilet facilities.
5. Pucca platform surface.
6. Proper booking arrangements.
7. Shady trees.

Southern Railway offers a number of facilities and amenities to the rail users for providing convenience, comfort and satisfaction. However the utilization of these facilities depends largely on the awareness of the passengers. Southern Railway offers 30 amenities to the passengers. These thirty amenities were classified under six groups namely,

1. Booking
2. Sanitation
3. Infrastructure
4. Catering
5. Medical
6. Information

CLASSIFICATION OF PASSENGER AMENITIES

I. BOOKING

Until 1985 the railway reservation was a Herculean task and the Southern Railway handled the reservation manually with the help of railway staff. But computerisation has brought about transparency in the reservation system. The information on fares, availability of the position of seats and births became accessible to the passengers with the introduction of computerisation in the Southern Railway.

In southern Railway, booking office and parcel office are open as per schedule. Round the clock service is provided for booking of accompanying luggage and perishable goods⁵³. Parcels are delivered from 9 AM to 2 PM daily. The passengers should approach the office at least 30 minutes before the departure of the train and the train ticket is very necessary for the booking of the parcels. The railway will issue a receipt and an endorsement will be made on the journey ticket⁵⁴.

Only bonafide passengers, holding proper tickets are permitted to the station platform. Earlier this platform tickets were issued only at the counter. Now to avoid the queue, platform ticket vending machines have been installed at all major railway stations. This is a major land mark in the history of railways⁵⁵.

II. SANITATION

In Southern Railway on all platforms of the stations, a container with a slogan “use me” is available. Rubbish garbage should be put into this container.

Pay and use toilet facilities in the railway stations have helped the railway administration to a greater extent to keep the station premises neat and clean⁵⁶. Passengers use these toilets by paying a nominal charge. At larger stations, urinals and toilets are also available.

III. INFRASTRUCTURE

Infrastructure includes retiring room, waiting hall, STD Booth, free wheel chairs for physically challenged persons, self- help trolleys, foot over bridge, clock, cool water facility, drinking water facility, seating arrangements on the platform, parking for two wheelers, porters facility, platform shelter, raised platform and shady trees.

Retiring rooms and dormitories have been provided at all important stations for the passengers in transit who are to wait to avail of train for their destination. Accommodation is provided for 24 hours only to bonafide passengers on the principle of first come, first served⁵⁷.

At small stations waiting halls should be provided for 45% of the maximum number of passengers at any time, in large stations the waiting halls should be provided for 30% of maximum number of passengers dealt with at any one time. In addition to this, waiting room is also available for both gents and ladies.

In the stations of Southern Railway STD booths are installed on the basis of tender. Five feet length and six feet breadth space will be given by the railway authorities and 11% of the land charge is charged as rent.

Free wheel chairs and self help trolleys help the passengers very much. Wheel chairs are generally available at all stations for carrying the weak passengers. These are available with the Station Manager and Deputy Superintendent, free of cost. Self help trolley is also available to move the luggage. Depending on the requirements of traffic, foot over bridges and sub ways are also constructed by Southern Railway in heavy traffic stations.

Provision of well maintained platform surface is one of the minimum amenities to be provided at all stations excluding halt stations. The platform surface should be dust free in dry weather and mud free in rainy season. At important stations, surface should be paved with stones or inter locking pavers. A demarcation yellow line should be drawn 1.8 meter away from the edge of the platform. In this area, trolleys should not be allowed to enter and it allows the free movement of passengers.

Cloak Rooms have been provided at many stations, where the passengers can conveniently keep their luggage and parcel for safe custody for a period of one month, on payment of prescribed charges⁵⁸. The duly signed receipt that serves as an acknowledgement should be surrendered at the time of the delivery of the luggage.

Water coolers are also installed at important and heavily rushed stations to serve cool drinking water to the passengers. Drinking water facility is provided by Southern Railway on platforms and the minimum number of taps on each platform should be four. The taps should be distributed along the side of the platform with easy access to passengers, travelling in trains.

Seating arrangement in the platform is another helpful activity of Southern Railway. Parking facilities are also provided by Southern Railway for passengers to stop their vehicles at vehicle stand which is usually situated at the main entrance of the Railway Station. It is functioning under license fees. The license period is three years. Notice boards are available at each point about the parking fees. The tariffs charged for parking of vehicles is for 24 hours.

Licensed porters are allowed by the Southern Railway for carrying passenger luggage within the station limit on payment of portage charges. It is fixed by the railway authorities. Shelter on the platforms is another area of railway concern⁵⁹. Depending upon the climatic conditions, number of passengers and the nature of traffic, sufficient area should be covered. Normally it should be covered to accommodate half the maximum number of passengers at the rate of 6 square feet for each passenger. All important stations and suburban stations with heavy traffic are roofed wholly.

High level platforms or raised platforms are generally provided at all suburban stations and at stations where mail /express trains are booked to stop. Shady trees are the minimum facility provided by the Southern Railway authorities to its passengers.

IV. CATERINGS

Catering is another important passenger amenity. The aim of the railway catering department is to serve hot, hygienic and tasty food to the travellers at a reasonable price⁶⁰. Milk stalls, coffee stalls, fruit stalls and vegetarian refreshment rooms, render valuable service to its passengers. The quality and taste of the milk is often tested by Deputy Station Master or other

authorities concerned. Southern Railway has arranged to sell fruits like banana, pomegranate, mango, grapes, apples etc through licensed vendors on all platforms at reasonable rate. The price of each item is displayed on the board. At stations, catering and vending services are provided through vegetarian refreshment rooms.

V. MEDICAL FACILITIES

Southern Railway provides medical aid for passengers as a matter of courtesy. First aid box is available with the station master's office and also with all the guards of the trains who are trained in rendering first aid.

VI. INFORMATION

Southern Railway gives information to the passengers through indication board, public announcement system, platform indication board and the board showing train details. The coach indication board is specially meant for communication networks. In Southern Railway it is mainly available at the main entrance of the platform number one. In Southern Railway, public announcement system is also available at large stations and all suburban stations where the passenger traffic is very heavy. This facility is very essential for the convenience of the passengers to have correct information on arrival and departure of trains⁶¹. This system is also useful for making important announcements. Likewise platform indication board is used to know where the train is stationed. Board showing train details are available at the main entrance of all the railway stations of Southern Railway. It shows the train number, train arrival and departure time and the cost of ticket.

PASSENGER AMENITIES IN THE TRAIN

Southern Railway has initiated measures for the safe and security of the passengers inside the train. The important amenities available in the train are pantry car facility, availability of complaint book in the guard van, ladies compartment⁶², coaches having yellow line at the entry point corner to identify the unreserved coach, presence of conductor (TTE) to assist the long distant passengers, availability of bed rolls for the passengers and the medical facility.

Pantry car facility is introduced by the Southern Railway for the convenience of the long distant passengers⁶³. This facility is available in almost all mail and expresses trains. The guard who is in charge of the train is also responsible for the safe running of the train. If a passenger wants to lodge a complaint, he can get the assistance of the guard. Complaint book is always available in the guard van.

Commonly all the mail and express trains are attached with four unreserved coaches. Considering the convenience of the passengers, two coaches are attached at the beginning and other two are attached at the near end of the train in addition to ladies compartment. To make easy identification of the coach, Southern Railway has drawn yellow lines at the entry corner of the unreserved coach.

Southern Railway has provided separate compartments for ladies. These compartments are provided with safety catches for doors and flash bolts for window shutters. Guards should specially examine the door and window fastenings of all carriages reserved for women. They must lock both

sides during the night journey. Women Railway Police Personnel are also employed in ladies compartment. Southern Railway has allotted a quota of six births in sleeper class in some of the trains exclusively for ladies. Male children up to 11 years are also allowed in the ladies compartment if accompanied by an adult lady passenger. Instructions have been issued to all ticket checking staff that they must not enter the compartments reserved for women and their tickets must be examined only when trains are halting at stations.

In most of the overnight services Southern Railway provides bed rolls for its passengers. For the passengers of AC First class, AC 2 Tier sleeper and AC Three Tier sleeper will be freely provided this facility. Passengers travelling by first class can avail of this facility on payment of Rs.20/- for bed roll.

Assistance of TTE/coach attendant to long distance travellers is a blessed one. Railways always want to provide excellent services to their passengers. To make the rail travel comfortable and hassle free, the railways have competent personnel on trains. The sleeper coach travelling ticket examiner will pay prompt attention to all complaints from passengers in regard to non- working of lights, fans, tops etc. and take remedial action to get them rectified. In the absence of TTE, Coach Attendant will check the passenger's ticket. He will lock up the compartment securely when the train is in motion and the vestibule doors at night. First aid box is also available with the guards of each train who is trained in rendering first aid. At the time of emergency the passengers can contact to the TTE / Train Superintendent and they will pass the message to the next station, where a railway doctor will attend the patient on a nominal charge.

TICKETING SYSTEM

Southern Railway provides various types of tickets for satisfying the requirements of different types of people in South India. There are three classes of travel viz AC (I class, Two Tier, Three Tier) I class and II class. People may travel in AC by virtue of their status and occupation and the low income group may travel in II class. Reservation Ticket facility is available in Southern Railway. People who wish to conduct long journey, can reserve their tickets 60 days before the date of journey. The reserved tickets are valid only for a particular train and date⁶⁴. Unreserved person can purchase the tickets before three hours of the arrival of the train from the current booking centre.

Monthly or quarterly season tickets are also issued by the Southern Railway at concessional rates for its passengers. It is issued in favour of a person for travelling in second class or first class up to 150km, on both suburban and non suburban sections.

Now a days, railway tickets can be purchased either from the ticket counter or through internet. This user friendly modernisation process is very useful for the passengers. Passengers can reserve tickets either through the mode of cash payment or with the help of credit cards. A service charge of Rs. 30 per transaction is levied for each ticket booked through credit card. Credit cards are accepted subject to a ceiling of Rs. 5000 per card.

BERTH FACILITY

The rail travel has become the longing of every citizen because of its delightful services.

Southern Railway has given special attention in providing berth facility to the passengers. The provision of proper sleeping accommodation for third class passengers was introduced on railways in 1954. But now it is almost introduced in all classes of all trains except some passenger trains.

In a second class reservation, Upper Berth, Middle Berth and Lower Berth facilities are available. People often prefer to travel in Lower Berth because of its comfortability. But Southern Railway is following the allotment of Lower Berth on the basis of 'first come first served'⁶⁵. All male persons aged 60 and above and ladies aged 45 and above will be allotted the Lower Berth subject to the availability of it.

PUNCTUALITY

Punctuality is a developed habit and a by- product of personal discipline. Passengers now a days are very time conscious and want to reach destination in the shortest possible time. During the colonial period trains used to run to time every time and the late running of a train was an exception. Keeping punctuality is the aim of Southern Railway. But there are certain factors beyond the control of railways such as miscreant activities, accident, bad weather, electricity grid failures and alarm chain pulling. Co-operation of passengers is very essential to tackle these problems. The introduction of new trains, additional service of trains during festival seasons also violates the punctuality of railway system. In fact the stress on the track has been increasing day by day.⁶⁶ Congestion on the routes is also affecting the punctuality of the trains. Supposing if one train runs late all the following trains get affected due to the queuing system. Technical falt and

sabotage also make delay. But Southern Railway has been trying to overcome all these problems to ensure punctuality.

CONCESSION

Southern Railway allows concessions to its passengers in fare and freight charges. Concessions are given to passengers such as students, teachers, senior citizens, physically handicapped persons, research scholars, award winners, widows of armed services, police personnel and sports personnel. These concessions are available on mail and express trains. No concession is granted in case of travel by AC chair car, AC first class and AC 3 Tire except to senior citizen, orthopedically handicapped or paraplegic persons. Concessions are granted subject to the production of requisite certificate in the prescribed form. Concession varies from 25% to 75%.

The following table will give details about the concessions granted by Southern Railway⁶⁷.

TABLE – IV
Concessions Granted by Southern Railway

SI. No.	Rail Travel Concession	Element of concession	
		I Class	II Class
	Persons Eligible for concessions.		
1.	Bonafide students up to the age of 25 years (27 years in case of SC & ST)	Nil	50%
2.	50% concession for women senior citizens	Nil	50%
3.	Senior citizens of the age of 60 years and above.	All classes	30%
4.	Widows of defense personnel killed in war.	-	75%
5.	Widows of IPKF personnel killed in action in Sri Lanka	-	75%
6.	Widows of policemen killed in action against the terrorists and extremists.	-	75%

7.	Recipients of Dronacharya award for eminent coaches.	-	50%
8.	Teachers honored with nation award by president of India	-	50%
9.	Orthopedically handicapped for paraplegic person with an escort (for both)	75%	75%
10.	Mentally retarded persons along with an escort (for both)	75%	75%
11.	Totally deaf and dumb persons.	50%	50%
12.	Blind persons alone or with an escort.	75%	75%
13.	Thalessemia major disease patients alone or with an escort (for both)	75%	75%
14.	Non infectious leprosy patients	75%	75%
15.	TB patients alone or with an escort	75%	75%
16.	Cancer patients alone or with an escort	75%	75%
17.	Heart patients alone or with an escort	75%	75%
18.	Boys scouts and girl guides in uniform	75%	75%
19.	Student articled clerks	Nil	50%
20.	Research scholars up to 35 years of age	Nil	50%
21.	Teachers, masters and principles of recognized primary and secondary school	Nil	25%
22.	Sports persons	50% state level	75% national level
23.	Unemployed youth appearing interview for central Government's jobs.	-	Free
24.	Widows of defense personnel killed in action against terrorists/ extremists	-	75%

REFUND OF FARE

Southern Railway has set up liberalised customer friendly refund rules for the benefit and convenience of passengers. To get the maximum benefit and to save on cancellation charges, passengers are requested to cancel their tickets within the prescribed time limits. This will help RAC/waiting list passengers to get confirmed tickets.

The station master of ticket issuing station is authorized to grant refund of fare on unused

unreserved tickets and also reserved tickets, RAC and waiting list tickets. The station master will refund the fare after verifying the genuineness of such tickets from the station records or through computers.

TIMING OF TRAIN

Southern Railway has a user friendly time table. It helps the users to avoid the last minutes hassles. Southern Railway authorities have ensured the availability of 'Board' containing the details of timing of train arrivals and departures at the entrance of all stations. Above all announcement of train on radio and television and the news paper advisements are also made by the Southern Railway for the benefit of the passengers.

PUBLIC GRIEVANCE REDRESSAL

Southern Railway has its own public grievance redressal machinery to receive and take necessary remedial actions on all complaints received from the passengers. To meet the ever increasing requirements of the travelling public and other users in 1988, a scheme was introduced to redress the grievances as quietly as possible⁶⁸. It envisages a three tier set up – Divisional level, Zonal level and Railway Board level. Besides this, the spot redress of grievance of the public has been done by the various station managers and other unit heads. Complaint book is also available at all stations. Complaint book is available at the enquiry or reservation office, town booking office, major goods sheds, parcel office, refreshment rooms, pantry cars, first class and air conditioned coaches and with the train superintendents and guards of all passenger carrying trains excluding suburban trains. Now passengers can also lodge their complaints through Southern Railway

website. The website is monitoring regularly by Southern Railway officers and efforts are taken to rectify it.

LUGGAGE

At first, a passenger could take only small articles of personal luggage as are required for his own use on the journey and be placed in the carriage without inconveniencing other passengers or reducing available accommodation in the carriage⁶⁹. Southern Railway provides some concessions in this concern. The maximum weight of luggage per passenger that can be carried by him in the compartment should not exceed the following permitted limit.

AC first class – 150kg

AC 2 Tier – 100kg

AC 3 Tier- 40kg

Sleeper class – 80kg

Second class – 70kg

But the following articles will not be booked as luggage.

1. Offensive articles such as wet skins and hides.
2. Explosives, dangerous and inflammable articles
3. Bulky articles of any description which on account of their bulk would be chargeable on measurement if accepted as parcels.

MODERNISATION IN PERSONNEL AMENITIES

From a small beginning Southern Railways have grown into a vast network comprising over 7164.83 route kilometres and over 8593.64 track kilometres. To run this great undertaking and keep the wheels of transport moving night and day on this vast network of railways over 10468 devoted men and women serve the nation⁷⁰.

The general public and the patrons of the railways come to contact with only a small percentage of the staff such as booking clerks, ticket collectors, travelling ticket examiners, guards, loco pilots, goods clerks, station masters and the like. But a large number of staff work behind the scenes to enable this big organization to function efficiently and smoothly⁷¹. There are the gang men, key men and mates who work hard in sun and rain to maintain the tracks in a safe condition⁷². There are the fitters and khallasis in the Loco sheds to keep the engines in good condition and the train examiners, fitters and khallasis in sick lines to maintain and repair goods wagons and coaching vehicles.

There are artisans and other staff in workshops to attend to periodical over haul and heavy repairs of rolling stock. There are the signal staffs to keep the complicated signalling gear in good order to make travel safe. Cabin men, gatemen, computer operator, clerks in offices, doctors who keep the railway men in good health and a host of others form the part of Southern Railway. It is the co-ordinate effort of the staff of various categories, irrespective of the position they are placed in, that enable the railways to function satisfactorily.

The railways, the largest employers of labour in this country have been pursuing the policy of progressively improving both the living and working conditions of the staff and providing them basic

amenities to the maximum extent possible. Not only the wages have been increasing progressively, the expenditure on welfare measures has also been steadily mounting up.

PERSONNEL DEPARTMENT

The Personnel Department as a separate establishment was recognized between 1922 and 1925⁷³. As the scope of railway work expanded, first in the number of employees and second in the volume of legal enactments such as the factories Act, the Hours of Employment Act, Regulations and Payment of Wages Act and the Labour welfare services, it became necessary to have a separate cadre of personnel officers. Under the Divisional system, the Divisional Railway Manager is assisted by a Divisional Personnel officer. At the Zonal Head quarters the General Manager (personnel) is assisted by a Chief Personnel Officer earlier designated as Deputy General Manager (Personnel). The Chief Personnel Officer functions like other Heads of Departments and deals with all the matters like recruitment, training, promotion, welfare and labour relations.

STAFF WELFARE

In Southern Railway staff motivation was accorded a very high priority. Good salary, modern hospitals with all facilities, modern schools for employee's children, stadium, worker's canteen, catering to the food and refreshment need of the staff round the clock, club for staff and officers were some of the major staff amenities provided by Southern Railway for the welfare of its workers.

MEDICAL FACILITIES

The practice of doling out medicines to railway employees is as old as the Indian railways.

The railway companies had their own medical officers who examined railway personnel in regard to their fitness for service in the country.

Till 1947, the Health Department had not taken shape as railway provided for only such treatment free to railway men as was available in a particular hospital or dispensary. After independence there had been a progressive expansion of medical facilities. The provision of full and free treatment became a statutory responsibility and the railways gradually developed their own institutions⁷⁴. These institutions had a three tier structure. At the Railway Board level a Health Department was set up under a full fledged Director General. At the Zonal level chief medical officer was in charge of this department and in each division there were Divisional medical officers and Assistant medical officers.

Under Southern Railway there were 10 Hospitals in 2001. They were at Perambur, Arakonam, Golden Rock, Madurai, Palghat, Thiruvananthapuram, Villupuram, Erode, Podanur and Shornur. Honorary consultants and specialists have been attached to these hospitals, where the most complicated cases can now be tackled. Mobile dispensaries on wheels have been introduced for catering to the staffs at wayside stations.

STAFF QUARTERS

Residential accommodation was provided to a limited extent in the past, but in recent years there has been very substantial increase. Till the close of the 19 century, there was no clear policy in regard to the provision of housing to railway employees. It was generally limited to Gazetted officers and European staff. But in 1947 the Mitra Housing Committee strongly recommended the needs for housing of different categories of railway staff⁷⁵. 'A type' of quarters were for skilled and

unskilled workers consisted of two main rooms each of 12' x 10' (3.7m x 3.1m), a kitchen, latrine etc. The other type of quarters viz 'B,C,and D' were meant for the various categories of junior and senior subordinates. Housing accommodation is provided to staff on payment of rates generally at subsidized rates. Essential staffs were given priority in the allotment of houses⁷⁶. Now a days better accommodation facilities are provided by Southern Railway to its workers. Improvements are also being progressively made to old type of quarters with provision of better ventilation, water borne sanitation and electrification⁷⁷. Canteens are also provided in the places where there is concentration of staff.

RAILWAY SCHOOLS

Although education is primarily a state subject, Southern Railways have been providing facilities for education of the children of their employees in large railway colonies, where such provision does not exist and no alternative means are available⁷⁸. Southern Railway provided and maintained schools at all centres, where the number of children was large enough to justify the employment of the teaching staff. The fees charged were graduated so as not to press too heavily on the poorer employees.

Grants-in-aids are also extended to privately managed schools which cater to the needs of the wards of railway employees. Subsidised hostel accommodation has been provided in major linguistic areas, so that the staff that is posted away from the headquarters can send their children for studies to these places⁷⁹. Reimbursement of tuition fee for children of railway employees studying up to higher secondary stage is yet another welfare measure.

HOLIDAY HOMES

At various healthy places and hill stations in India holiday homes were established by Indian Railways for its staff in 1956. Employees of Southern Railway also make use of this amenity. There were two kinds of accommodation, of higher type was 75 paise per room for a day and the lower types were 25 paise per day for a room. Class IV staff were provided the lower type of accommodation. If such accommodation was not available they would get higher type of accommodation at the rate of 25 paise per day. In fact in Southern Railway majority of the employees would like to make use of this facility of the holiday homes to enjoy their leave along with their family members⁸⁰.

RECREATION FACILITIES

For recreational and cultural activities a large number of institutions and clubs have been provided by Southern Railway. Some of these institutions have libraries with a large collection of useful books. For the benefit of the staff posted at wayside stations, the system of mobile libraries on wheels has been started. Recently handicraft centres have also been set up in railway colonies where women members of railway families are taught handicrafts such as weaving, spinning, knitting, cutting, tailoring etc, during their spare time⁸¹.

Though the clubs and institutions were established initially for the benefit of Anglo-Indian and Eurasian staff, but after independence they were thrown open to all its employees. These clubs and institutions were constructed with necessary furniture, roads, fences, tennis courts and play grounds. A garden was also to be provided in some institutions. These recreational clubs are encouraging sports and games with a view to induce the workers of Southern Railway to participate

in healthy physical exercises. For the benefit of the children, children's park was also provided in all industrial centres of Southern Railway.

SPORTS

From a small beginning as a part of the recreational facilities, sports activities of Southern Railway expanded so as to cover all classes of railway employees, where there is a concentration of railway men⁸². Regular tournaments in major games such as football and hockey are held and the Southern Railway team participated in the national level events. Every year athletic meets are also organized by Southern Railway and great encouragement was given to the athletes⁸³.

RAILWAY RUNNING ROOMS AND REST HOUSES

For the benefit of guards, drivers, and engine crew, who worked on trains out of their headquarters, running rooms and rest houses were provided at a large number of stations of Southern Railway. They need to take rest at out stations before undertaking the return trip. Various amenities, which included comfortable sleeping facilities and kitchen facilities were also provided by Southern Railway for such workers.

CO-OPERATIVE SOCIETIES

For the daily requirements of the employees living in railway colonies a number of co-operative stores were also set up⁸⁴. Railway men buy grocery and similar articles from these stores at rates considerably lower than the markets⁸⁵. The establishment of these co-operative credit societies is also a modernization process of Southern Railway.

AWARDS FOR EFFICIENCY

For the co-operation of the staff and to inspire them a sense of common endeavour, a large number of joint committees have been set up at various levels. Through these committees railway men can make suggestion for improving efficiency, effecting economies and ensuring safety of travelling public. Suitable awards are given for valuable suggestions and inventions. Individual or collective awards are also given for displaying exceptional merit in the performance of duties. During the railway week, from 10 to 16 April, outstanding railway men of Southern Railway come up to Delhi to receive awards from the Railway Minister.⁸⁶

In short, with the passage of time Southern Railway steadily and slowly came into the path of modernisation. Every nook and corner of the activities of railways in South India we can find modernisation. In the technical systems such as brakes, coaches, locomotives, sleepers, signalling and gauge conversion there are new changes. Like wise, for the welfare of passengers and also for the workers, Southern Railway took effective measures to make it sure that Southern Railway is in the path of modernisation.

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