

THE SOUTHERN RAILWAY

has many attractions for the Tourist, English and the Student of History

BIJAPUR is the ancient city of the famous Adil Shahi dynasty. It is now in ruins and the gigantic structure called the Gol Gumbaz contains a perfect whispering gallery.

CAPE COMORIN or KANYA KUMARI is the land's end of India where the waters of Arabian Sea, the Bay of Bengal and the Indian Ocean meet. It has a famous temple dedicated to the Goddess Kanya Kumari.

CHIDAMBARAM has a famous temple of great antiquity dedicated to Nataraja or Siva in His aspect as The Cosmic Dancer. Within a mile of Chidambaram Railway Station is the Annamalai University Campus.

CHINGLEPUT is the Railway Station for Tirukkalukunram or the 'Hill of the Sacred Kites' and Mahabalipuram with its famous sculptured rock-cut temples.

CONJEEVERAM is famous for its Siva and Vishnu temples.

HASSAN is the best place from which the famous temples of Belur and Halebid can be visited.

HUMPI (Vijayanagar)—The capital of the Never-to-be-forgotten Hindu Empire where the marvellous ruins of the old city spread over several square miles.

KALAHASTI one of the greatest shrines of Southern India where the element of 'Vayu' or Air is worshipped.

MADRAS the third largest city in India, is the metropolis of the State of Madras and the headquarters of the Southern Railway. The city covers about 50 sq. miles and has a population of nearly 1½ millions.

MADURA the famous capital of the Ancient Pandya Kings is the second largest city in the Madras State. The chief attraction in Madura is its massive temples dedicated to God Siva and Meenakshi the fish-eyed Goddess.

MYSORE is the city of lights. The enchanting **BRINDAVAN GARDENS** are only ten miles from Mysore.

RAMESWARAM contains one of the most venerated Hindu shrines and one of the finest examples of South Indian architecture.

SRIRANGAM (via Trichinopoly) is the most important Vaishnava shrine in South India.

TANJORE has the famous Brihadeeswara temple and Saraswati Mahal Library which contains a rare collection of ancient books, manuscripts and palm leaves.

UCHENDUR is famous for its sea-side temple dedicated to Lord Siva which is 1,000 years old.

TIRUPATI is held in the highest reverence by Hindus and has a perennial flow of pilgrims. The hill temple is an example of early Dravidian architecture and is one of the richest in South India.

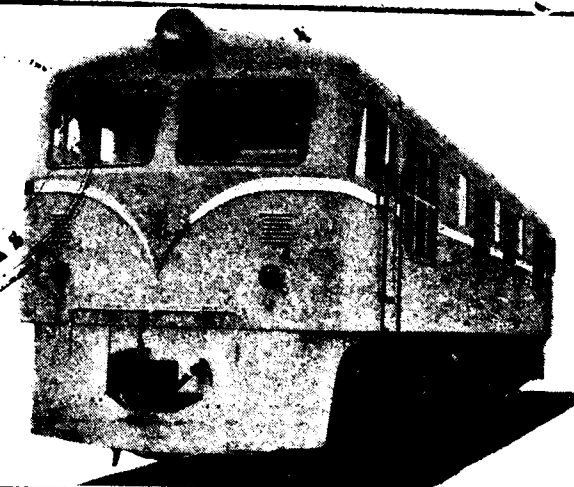
TIRUVANNAMALAI—The large Siva temple at the foot of the hill is one of the largest in South India. The famous Ramanashram is about two miles from the Railway Station.

TRICHINOPOLY is noted for its shrines at Srirangam and Tiruvanaikoil. It is a flourishing city on the right bank of the river Cauvery.

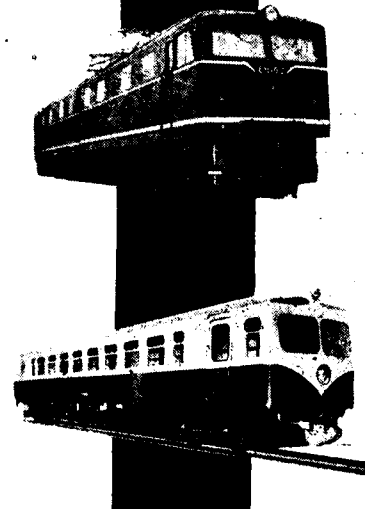
TRIVANDRUM is now the capital of the United States of Travancore-Cochin. It has a lovely beach, a famous art gallery and museum and is well-known for its ivory work.



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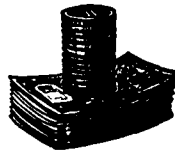
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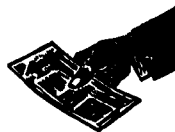
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(Official Organ of the Southern Railway)

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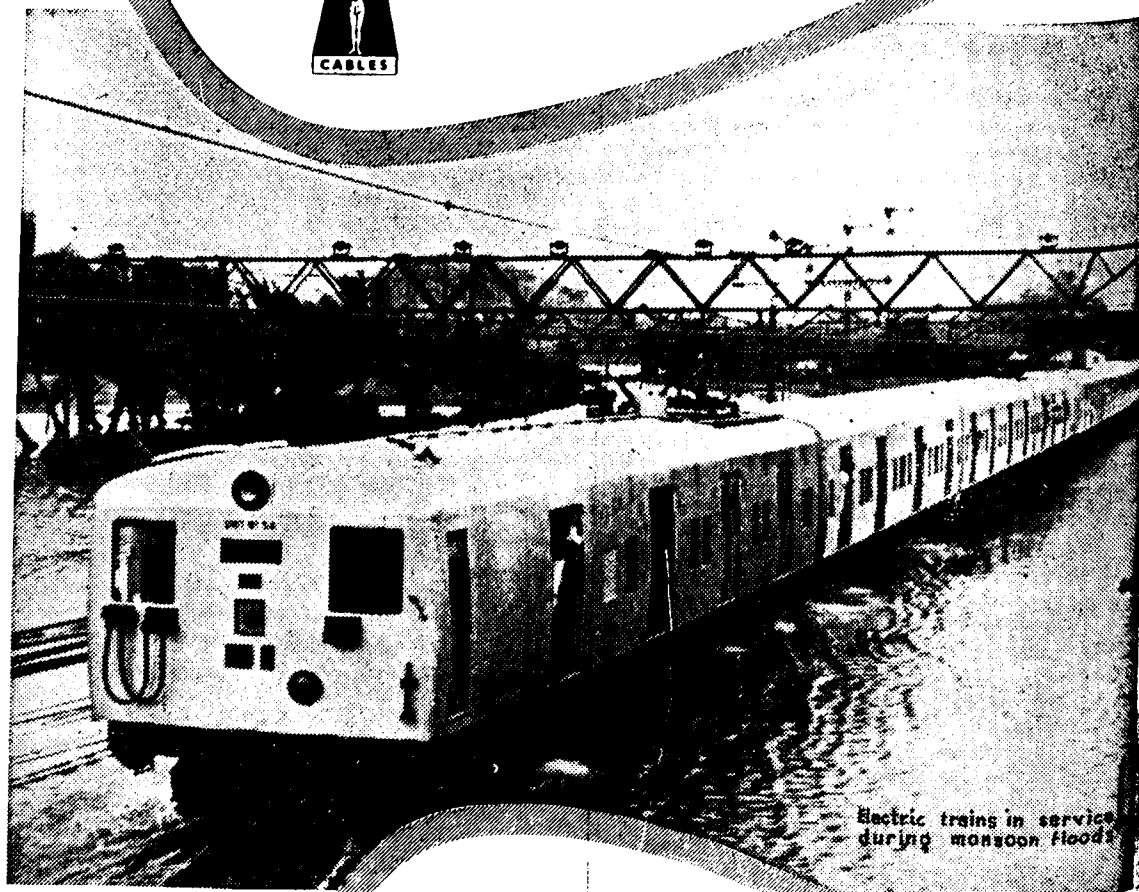
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SOUTH RAIL NEWS

VOL. III

JANUARY 1957

No. 10

IMPROVEMENT IN OPERATING PERFORMANCE

THE Indian Railways last year set up a new record in operational efficiency, beating their own previous year's performance, which itself was then an all-time record.

Data shows that during 1955-56, the index of net ton-miles per wagon-day, used internationally to measure the intensity of wagon usage, touched the new "high" of 541, as compared to the war-time best of 451 in 1942-43, and the lowest post-independence figure of 351 recorded in 1947-48.

Another index used to measure operational efficiency, wagon-miles per wagon-day, has steadily improved from the lowest post-independence figure of 33.1 in 1948-49 to 46.6 in 1955-56, an increase of 41 per cent. During March 1956, this index advanced still further to 48.9.

Although similar indices for some of the larger railway systems of the West are not available for the year 1955-56, the latest available data shows that the Indian Railways'

performance in regard to the intensity of wagon usage is substantially better than that of the United States, United Kingdom, Canadian Pacific, Canadian National and German Federal Railway systems.

Engine usage is another important criterion of a railway system's operational efficiency. Here, the index of engine-miles per engine-day on line on the Indian Railways has gone up from 71 in 1948-49 to 85 during 1954-55, for which year the latest figures are available (increase: 19.7 per cent).

The percentage of engines under repair to the total on the line, another determinant of efficiency, has improved from 21.2 in 1948-49 to 16.9 in 1955-56 (improvement: 20 per cent).

It will thus be clear that key statistics of 1955-56 wagon usage and 1954-55 engine usage show a marked improvement over the pre-plan period and there has been a general improvement in the working of Railways.

Second Plan Efficiency Provision

The Railway Second Five-Year Plan makes a specific provision of 10 per cent additional increase in operating efficiency and the total financial allocation was determined after a suitably monetary cut on this account.

Experience in India and abroad has shown that under the impact of large-scale industrial development, the leads

of traffic ("lead" is the average distance a ton of goods is carried) go up considerably, involving larger demands on the transport system. The Second Plan allocation made to the railways, however, makes no provision for such increased demands. Efforts will, therefore, have to be made to absorb these demands as much as possible by even greater operational efficiency.

FURNISHING OF RAILWAY COACHES FACTORY TO BE IN AYANAVARAM, MADRAS

The Railway Board has decided, in principle, on the establishment of a coach furnishing factory to be located at Ayanavaram, about two miles from the Integral Coach Factory at Perambur. Pending the finalisation of the scheme the Board has sanctioned a sum of Rs. 20 lakhs for interim arrangements to be made by the Perambur coach factory for starting furnishing work. According to present indications, the project is estimated to cost about Rs. 3 crores and will provide

additional employment for about 2,000 to 3,000 persons. The decision to establish a separate furnishing unit for the all-steel integral coaches manufactured at the Perambur factory, has been taken with a view to relieving other railway workshops, now engaged in furnishing work, so that they could devote their resources to manufacture and repair work. This will expedite the work of turning out coaches in order to relieve overcrowding.

MANUFACTURE OF RAILWAY EQUIPMENT IN INDIA

Various steps taken by the Railways to develop the indigenous capacity for the manufacture of Railway equipment were detailed by Sri Shah Nawaz Khan in the Lok Sabha.

A nucleus Development Cell has been formed as a result of the Railway Equipment Committee's recommendation to guide and assist prospective manufacturers to develop indigenous capacity for the manufacture of specialized Railway requirements which are, at present, imported or are in short supply.

During the year 1955-56, Chittaranjan Locomotive Works and Telco produced 125 and 50 Locomotives respectively. The current output of Chittaranjan Locomotive Works is 14 Locos per month and of Telco, six locos per month. The output of these works is expected to be progressively increased during the year 1956-57 culminating in an output of about 200 average size locos annually by Chittaranjan Locomotive Works (average B.G.) and 100 locos annually by Telco (average M.G.), thus making a total of 300 Locos annually by the end of Second Five-Year Plan.

On April 1, 1956 the indigenous capacity for the manufacture of wagons was about 20,000 wagons per year. It has been decided to substantially increase the existing capacity to meet future requirements. Accordingly, a number of new firms have, in the first instance, been selected out of those

NOTES AND COMMENTS

recommended by the Railway Equipment Committee and have been granted licences by the Ministry of Heavy Industries to take up the manufacture of wagons. The cases of some other firms are under consideration. It will take some two or three years before these new firms establish production.

The indigenous output of coaches which is largely confined to body building in Railway workshops is being enhanced by 500 coaches per year.

The Integral Coach Factory at Perambur went into production in October 1955 and turned out 12 coaches during the year ending October 1956. During the next year ending October 1957 an output of 100 coaches is expected from this factory.

Hindustan Aircraft turned out 160 conventional type coaches during 1955-56. They have finalised their plants to switch over to the manufacture of the integral type of coaches and will enhance their production to 300 coaches per year.

At present only one firm is manufacturing Metre Gauge under-frames, some of which are with shells and during the year 1955-56, turned out 160 under-frames with shells. The firm is aiming at turning out at the rate of 460 under-frames per year commencing from January 1957. Two more firms have been granted licences for developing the indigenous capacity for coaching under-frames. Cases of two more firms are under consideration.

Technical inspection of some indigenous firms has been completed and

orders have been placed for the indigenous manufacture of signalling equipment such as signal glasses, lenses, roundels and electrical signalling equipment.

Capacity is also being developed in the Railway Workshops for the manufacture of points and crossings.

Signal Workshops are also being set up on the Railways to manufacture Railway Signal items.

RAILWAY EQUIPMENT COMMITTEE'S REPORT

Printed copies of the Report submitted by the Railway Equipment Committee, which was set up last year *inter alia* to suggest ways and means for developing the indigenous manufacture of imported items of Railway equipment, are now available for sale to the public through the Controllers of Stores of the Central, Eastern, Northern and Southern Railways at Bombay, Calcutta, Delhi and Madras respectively.

EXCHANGE OF IDEAS AMONGST RAILWAY OFFICERS INTER-RAILWAY TOURS

The Railway Board has suggested to the various Railway Administrations that steps should be taken to encourage the exchange of new and useful ideas amongst their respective officers.

A concrete step suggested by the Railway Board is that study tours of officers of one Railway should be organised on the other Railways, so

that they may observe and imbibe fresh ideas and also impart their own experiences to officers of the Railways they are visiting.

A suggestion that such study tours should be encouraged was made some time ago by the Estimates Committee.

TELLICHERRY-COORG-MYSORE METRE GAUGE RAILWAY LINE TRAFFIC AND ENGINEERING SURVEYS

The Railway Board has sanctioned the Engineering and Traffic Surveys for a Metre Gauge Railway line between Tellicherry and Mysore. The length of the line will be 180 miles approximately.

The line would pass through the Malanad region which is rich in timber, bamboo, rubber, coffee, tea and various spices and will help in the transport of all these valuable commodities. It will also promote closer contact between the Malayalam-speaking areas of Kerala and the Canarese-speaking areas of Mysore.

HIS EXCELLENCY MR. CHOU-EN-LAI VISITS INTEGRAL COACH FACTORY, PERAMBUR, MADRAS.

December 6, 1956 was a memorable day for the Integral Coach Factory, Madras, because on that day His Excellency Mr. Chou-En-Lai, Prime Minister of the People's Republic of China, visited the works and was very pleased with this Indian venture.



The Chinese Premier in the I.C.F. Workshops

His Excellency was accompanied by Marshal Ho-Lung, the Vice-Premier of China, Mrs. and Mr. R. K. Nehru, Ambassador of India in China, and Sri M. Bhaktavatsalam, Madras Minister, and interpreters. On arrival at the Administrative Office, His Excellency and party were received by the Chief Administrative Officer, Sri K. Sadagopan. A guard of honour presented by the Railway Protection Force was inspected by His Excellency. The National Anthems of China and India were played by the Southern Railway Protection Force Band.

After the review of the parade, the Chief Administrative Officer explained to the Prime Minister and party the history of the Integral Coach Factory and details about production targets, design of coaches built, etc.

His Excellency accompanied by the Chief Administrative Officer, the Vice-Premier and party then left for a round inside the various shops of the Factory. The Prime Minister of China was greatly interested in the various details relating to the assembly of coaches and evinced keen interest in



H. E. Mr. Chou-En-Lai, Prime Minister of China at the Technical Training School—I.C.F.

the amenities provided to the workers.

Later His Excellency and party visited the Basic Training Centre of the Technical Training School and other sections of the School.

From the school His Excellency and party proceeded to the Staff Colony where an array of Children greeted them with Chinese and Indian National Flags and presented a bouquet to the Prime Minister.

On returning to the Administrative Office His Excellency and party had tea at the Meeting Room with the Officers of the Factory. Over tea His Excellency made detailed enquiries

about the production plan in the Factory, etc. His Excellency was also pleased to record in the Visitors' Book his impressions in Chinese which, when translated, read as follows :—

"It is worthwhile for the Chinese to come and learn in this modernised Coach Factory. The Factory is well-built and well-organised. Its technology and the training given are very good. It is worthwhile for the Orient to take pride in the Factory."

Finally the party came down to the lobby of the Administrative Office building opposite to the lawns where a large number of workers had gathered to offer an ovation to the

Prime Minister. Sri K. Sadagopan, in a short speech, said that it was a red-letter day in the annals of the Factory and that the visit of the Prime Minister of China and the Vice-Premier was a source of inspiration and encouragement to the workers of the Factory. The Indian people had fraternal interest in the people of their great neighbour, China. The Chief Administrative Officer offered the best wishes of the Integral Coach Factory workers to the brother workers in China and hoped that China, which had already taken a notable place in the comity of nations, would have a still brighter and more glorious future.

Premier and Vice-Premier left the Factory amidst full-throated ovations from the workers :—

"Pancha Shil Zindabad, Bharat

Chini Mythry Zindabad, Pancha

Shil Samarthak Pradhan Manthry

Chou-En-Lai Zindabad."

EX-RAILWAYMAN AVERTS ACCIDENT

The Chief Administrative Officer then presented His Excellency a silver model of the Integral Coach, manufactured in the Factory, as a memento of His Excellency's visit to the Factory.

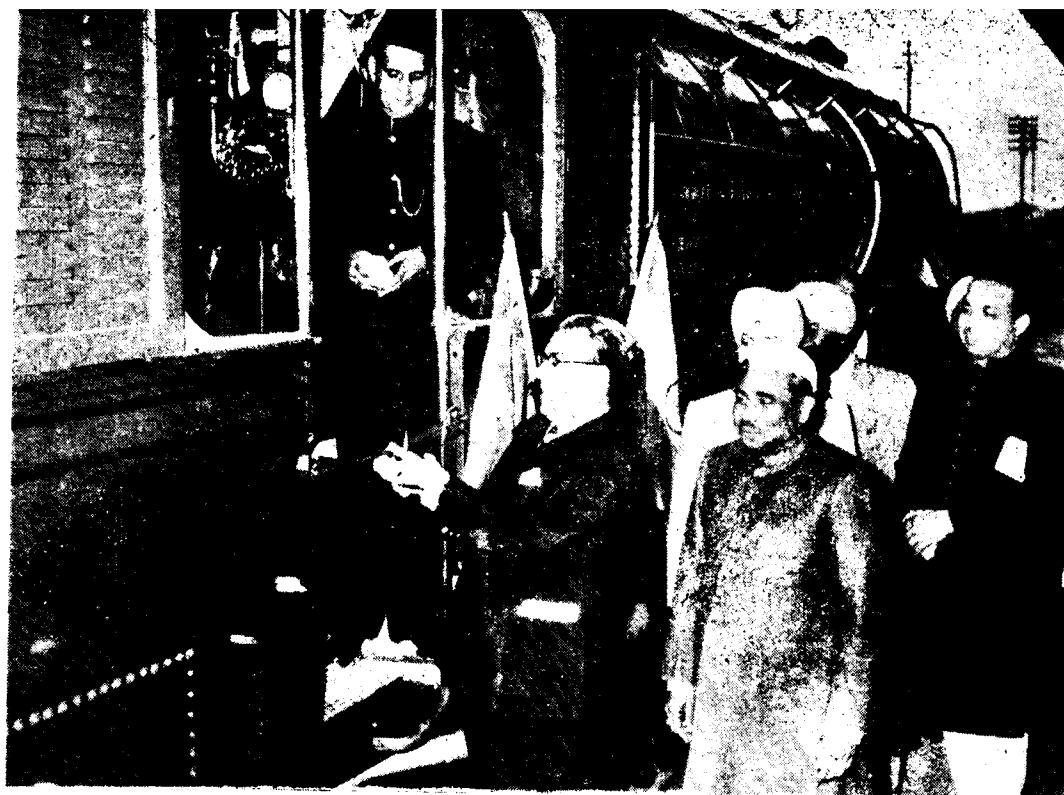
His Excellency, Mr. Chou-En-Lai, addressing the assembled workers expressed his happiness at the opportunity afforded to him to visit the factory. He had made up his mind to send people from China to learn here. "Just a while ago," the Chinese Premier said, "we went round this Factory and we could see for ourselves how well-built and well-organised it is. The technical training given to the workers is very good. We may say that all the Orientals including the Chinese can take pride in such a factory." He expressed appreciation of the fact that Swiss engineers helped Indian workers to build the factory.

The National Anthems of China and India were played before the Chinese

Towards the close of the monsoon this year, as a result of heavy rains between Multapi and Chichonda stations on the Itarsi-Nagpur Section of the Central Railway, a slip occurred in the Railway embankment. As a result of the slip, the rails were left hanging without any support for a distance of 16 feet.

Fagoo Kashiram, one of the local residents, who was some 12 years ago in Railway service, observing this slip ran to the nearest level crossing gate and informed the gateman of the impending danger. The latter stopped an approaching Goods train in time, thus averting what might have been a serious accident.

This ex-Gangman of the Railway has been granted a reward of Rs. 100 by the General Manager for the good work he has done.



The Hon'ble Mr. Paul Martin, Minister of National Health & Welfare, Canada (3rd from right) presenting the 120th Locomotive from Canada under the Colombo Aid programme to India on 28-12-56. The Union Railway Minister Sri Jagjivan Ram who received the engine is on his left

Sri Shah Nawaz Khan, Deputy Minister for Railways, blowing the whistle and waving the green flag at the New Delhi Railway Station to start the first fully air-conditioned train between Delhi and Bombay, on 24-12-56



ANNUAL CONFERENCE OF ALL-INDIA FEDERATION OF PASSENGERS AND TRAFFIC RELIEF ORGANISATIONS AT RAMESWARAM—27/28—12—56

Sri O. V. Alagesan, Deputy Minister for Railways and Transport, inaugurating the Conference

Sri A. L. A. R. Somanathan Chettiar, Chairman, Reception Committee, welcoming the delegates and other guests



Sri Balvantrai G. Mehta, M. P. and President of the Federation, addressing the gathering

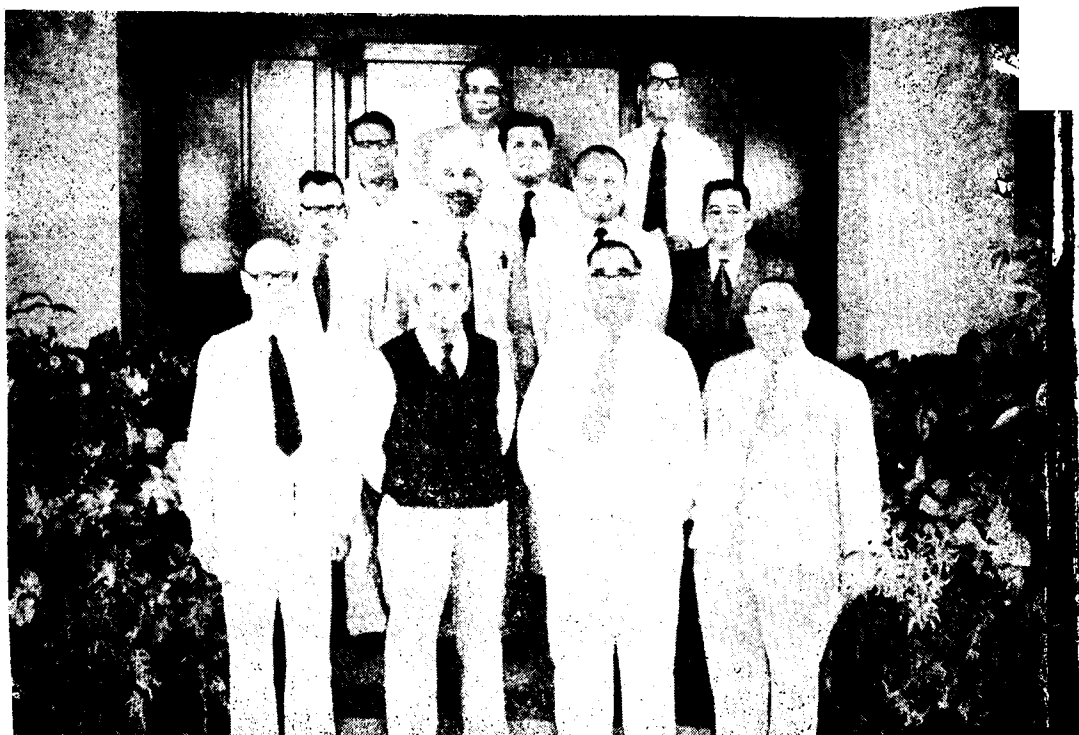


H. E. Mr. Chou-En-Lai and Sri Jawaharlal Nehru celebrated New Year on the special train which brought them from Nangal to Delhi. They are seen in the specially decorated Dining Car of the train



New standard flat-bottomed rails on the main-line of the Western Region of British Railways near Langley

The Controllers of Stores, Indian Railways, met at Bangalore in October last. Photo shows them at Indian Telephone Industries, Durvaninagar—Sri H. D. Singh, Director, Rly. Equipment, second from left, middle row and Sri P. N. Talati, Controller of Stores, S. Rly. and Sri C. D. Ellicot, Dy. COS/ICF, third and fourth respectively, front row



WORLD OF RAILWAYS

ARTHUR L. STEAD

Our London Correspondent

SOUND roadbed and track form the very basis of safe and successful railway operation, and in probably no branch of the industry has greater progress been recorded through the years than in the permanent-way department.

The railway rail was pioneered in Britain, the first railway tracks developing out of the primitive wooden rails utilised on the old horse-drawn tramways operated for the movement of coal from the mines in the North of England to the seacoast in the eighteenth century. From the rough-and-ready track of the pioneering era to the modern steel ways that

girdle the land surface of the globe is a tremendous jump.

In Britain, for a hundred years or so, the track generally consisted of bull-headed rails laid in chairs, in contrast to the practice in many other lands of utilising flat-bottom steel secured by spikes or screws direct to the sleepers. Not long ago, however, the flat-bottom rail was adopted as standard for British Railways, and little by little the British trunk routes, extending from Land's End in the extreme south to John O'Groats in the north, are being relaid with the new steel to carry the fast

and frequent passenger and goods services of the future.

It was the construction of George Stephenson's first public railway—the Stockton and Darlington line (1825)—that marked the passing of the old wooden rail and the birth of the railway track as we now know it. The iron rails over which "Locomotion No. 1" made its triumphant initial trip from Darlington to Stockton and back were 15 feet long and weighed about 25 pounds per yard. They had upper flanges $2\frac{1}{4}$ inches wide.

For the Liverpool and Manchester Railway, opened in 1830, a somewhat heavier type of rail was introduced, and in 1842 double-headed wrought-iron rails appeared on the scene, 15 feet long and weighing 68 pounds per yard. Earlier, Joseph Locke introduced a type of double-headed rail, but the development of the bull-headed rail in Britain soon resulted in the discarding of the double-headed type. Bull-head rails 24 feet long and weighing 83 pounds per yard, saw the light of day in 1875, to be followed 21 years later by rails weighing a trifle over 100 pounds per yard.

When the various privately-owned railway companies of Britain were formed into four big geographical groups in 1923, there were about thirty different types of track employed on the separate undertakings. By degrees, standardisation was introduced, and between World Wars I and II the standard track in Britain consisted of bull-head rails of either 95 or 85 pounds per yard, this applying to points and crossings as well as to plain track.

Standard rail length at this period was 60 feet, and two patterns of chairs were employed, one for use with the 95 pound steel, and the other for the 85 pound track. Holes for three screws passing through a hardwood ferrule were provided in the chair and the chair keys were of hardwood, tapered $1/16$ in. The standard sleeper was 8 ft. 6 in. long, 10 in. wide and 5 in. deep, with joint sleepers for the 95 pound track of 12 in. width.

Between the two World Wars, the railways of Britain commenced to make increased use of special and alloy steels, these chiefly being introduced in a particular situation, such as busy locations and sharp curves. On the densely occupied city and suburban tracks of the Metropolitan, District and London Electric Railways (now part of the London Transport undertaking) rails of sorbotic, high silicon and manganese steel came to be extensively introduced. Busy junctions on the main line railways were also laid with manganese steel, the invention of the Sheffield iron-master, Sir Robert Hadfield.

Within three years, manganese steel crossings installed on the London underground railways carried 218,000,000 tons of traffic, and at the end of the period showed remarkably little wear. A most notable employment in main line service of manganese steel rails was the introduction of 92 manganese steel crossings and rails, covering 77 intersections, at the eastern approach to the Central Station, Newcastle-on-Tyne. Total length of this important junction is 141 feet; width over-all

58 feet 6 inches; and total weight 70 tons.

Shortly before World War II, serious attention began to be paid in Britain to the possibilities of employing flat-bottom rail in place of the long-favoured bull-head steel.

It was on the London, Midland and Scottish Company's main line at Cheddington that there was laid experimentally in 1936 the first section of flat-bottom rail to be tried out in Britain. Three years later, the London and North-Eastern Company introduced flat-bottom rails experimentally on its Edinburgh-Glasgow route, while on the Great Western Company flat-bottom steel first appeared at Langley in 1946. It was largely as a result of these experiments that the decision was taken in 1949 to make the flat-bottom rail standard throughout Britain.

Up to the present, about 6,000 miles of British track have been laid with the flat-bottom rail, weighing either 109 or 98 pounds per yard. The flat-bottom rails are 59 per cent stronger vertically, and 136 per cent stronger laterally, than the bull-head type formerly favoured. Each mile of track requires 16,900 fewer components with the flat-bottom rail.

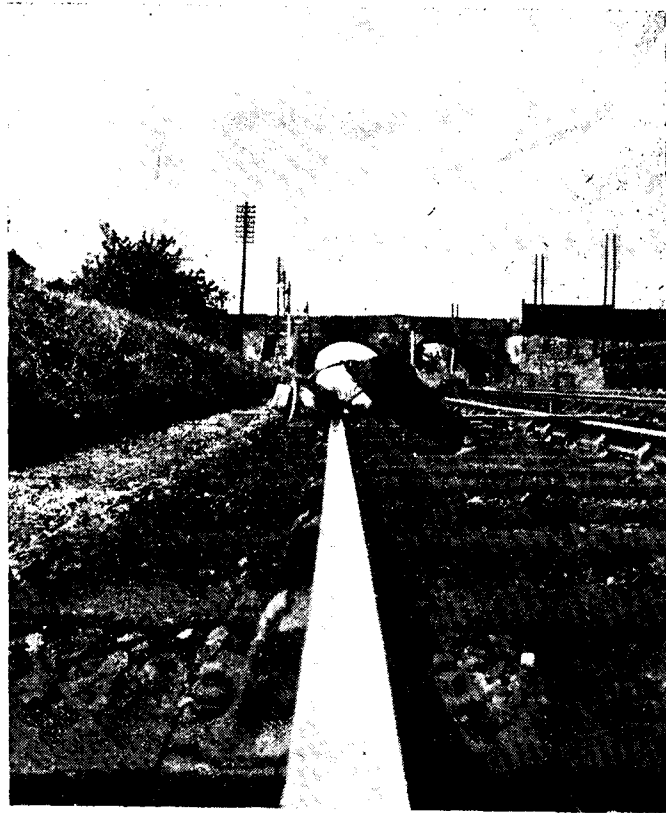
British railway tracks are classified "A" and "B" for heavy fast traffic, in which flat-bottom rails weighing 109 pounds per yard are replacing the old-fashioned 95 pounds bull-head rails. "C" class lines are those carrying lighter traffic, where flat-bottom rails weighing 98 pounds per yard are replacing 85 pounds bull-head rails.

"D" class lines—mainly goods—are renewed with serviceable bull-head rails taken from the more important routes as they are relayed.

Much relaying is now done in Britain with pre-assembled 60 feet lengths of track, complete with rails, sleepers and fastenings, which are craned into position in one piece as it were. Previously, the track components had to be handled individually. There are between 2,112 and 2,288 sleepers to the single-track mile on British Railways. These remain 8 feet 6 inches long, 10 inches wide and 5 inches thick. To each yard of line there are 9 cubic ft. of top ballast. Maximum permitted weight per axle on main lines is $22\frac{1}{2}$ tons.

For ballasting British tracks, there are employed broken granite, blast-furnace and steel slag, and cinders. Because of the dust and dirt which arises from the old-fashioned cinder track, this form of ballast is now generally replaced by broken stones. British Railways maintain several ballast quarries of their own for track purposes, one of the largest being the Meldon Quarry, of the Southern Region, in Devon. Output of this quarry is approximately 100,000 tons per annum, and two types of crushing plant—gyratory and knapping—are employed to reduce the stone to suitable dimensions, usually three inches.

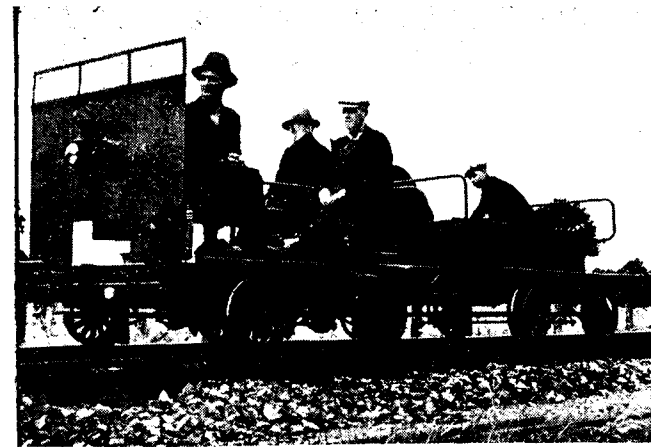
Track maintenance in Britain, as in India, is generally entrusted to small groups of men, each allocated to a particular short length of route. The foreman in charge of each four or five miles of track is held responsible



The eagle eye of a London Midland Region track foreman examines a length of main-line steel for possible imperfections

for determining the necessity for minor track repairs and renewals, and arranges his work accordingly. He works under the supervision of a local inspector, who covers anything up to fifty route miles of track or thereabouts. Larger works, beyond the capacity of the ordinary section maintenance men, are agreed upon by the local inspector or divisional engineer, proposals for renewals, including relayings, rerailings and sleeper replacement, being made each year by the local inspectors, and passed on to the divisional and chief engineers for approval.

The principal responsibilities of the section foreman include the maintenance of the track to an even surface, with correct super-elevation, by lifting and packing; maintaining correct track alignment by slueing; rectification of gauge faults; renewal and replacement of old and defective sleepers; and repair and minor renewal of crossings, points, and their fittings. He is also charged with the task of cleaning the ballast by screening; cleaning out of drains and ditches; weeding of the track (where this is not performed by special weeding train); cutting and burning of grass slopes



A typical track gang going to work on their petrol-driven motor car

likely to become a fire hazard; and repair of fences and crossing gates. Once a day, he must personally inspect his full length of track. He also acts as time-keeper for the gang, and completes all essential reports and material records.

It was on the British lines that the commendable plan was first introduced of encouraging permanent-way gangs in their work by running annual competitions for the best-kept lengths of track. These competitions invariably arouse great interest among the track forces, and there is little doubt sporting contests of this kind are of tremendous value not only in the permanent-way branch, but in every department of railway working.

In recent years, mechanical appliances have been introduced on an increasing scale on British Railways for track maintenance and relaying. The appliances ease the work of the main line gangs and often enable labour to be reduced on branch lines. Motor trollies and power-operated tools make it possible for a single gang to take charge of an entire branch

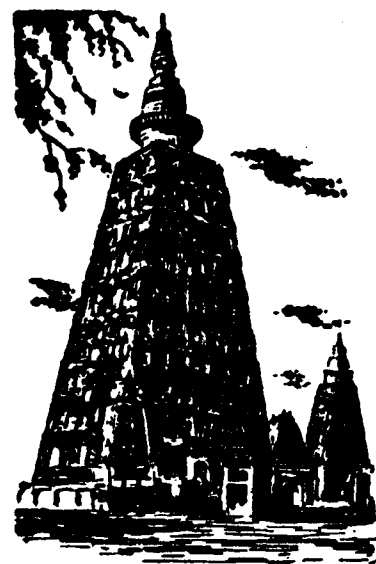
route previously cared for by several gangs.

For big jobs, such as track renewal, building up battered rail ends by welding, and stabilisation of the formation, there are employed special gangs, often housed on the site in mobile work trains. For large track renewals, two methods are followed: (1) the complete renewal of the track, dismantling and assembling being performed on the site; and (2) the removal of assembled track in complete lengths and the mechanical laying of similar lengths pre-assembled at a depot.

Increases in train speeds and more intensive track occupation associated with the modernisation plan now in progress on British Railways are necessitating many improvements to the track, station layouts and structures. Railway "black spots", such as sharp curves, awkward junctions, inadequate facilities at stations, and so forth, are being eliminated wherever the operating advantages justify the cost. Track over wide areas is being re-ballasted and strengthened; additional lines, improved layouts and flyover junctions provided; and bridges rebuilt or strengthened.

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THE PUBLIC RELATIONS OFFICER, NORTHERN RAILWAY



The Hill at Singavaram with the temple of Sri Ranganatha on top

SENJIKOTTAI

THE IMPREGNABLE FORTRESS AT GINGEE

T. N. SRINIVASAN

NOTHING arrests the attention of the travellers, who come to India, more than the majestic look of the several fortresses, which are the vestiges of the ancient grandeur and royal dignity, that lie scattered throughout the length and breadth of this great and much respected country. Each of these relics has a woeful tale to tell—"Stories in stones"—of the ruthless vandalism that the foreign invaders did, the bitter hatred of man to man in his never-ending struggle for power and wealth—that greed which swallowed both the conqueror

and the conquered ultimately. Among many of these silent monuments of past glory, several are in Northern India but there are a few such ones in the southern part of the peninsula, of which one such famous fortress is the one or the group of them at *Senji*—more popularly known today by the name Gingee.

Gingee, at present, is a small village situated about 18 miles west of Tindivanam Railway station, which is on the main line of the Southern Railway, between Chingleput and

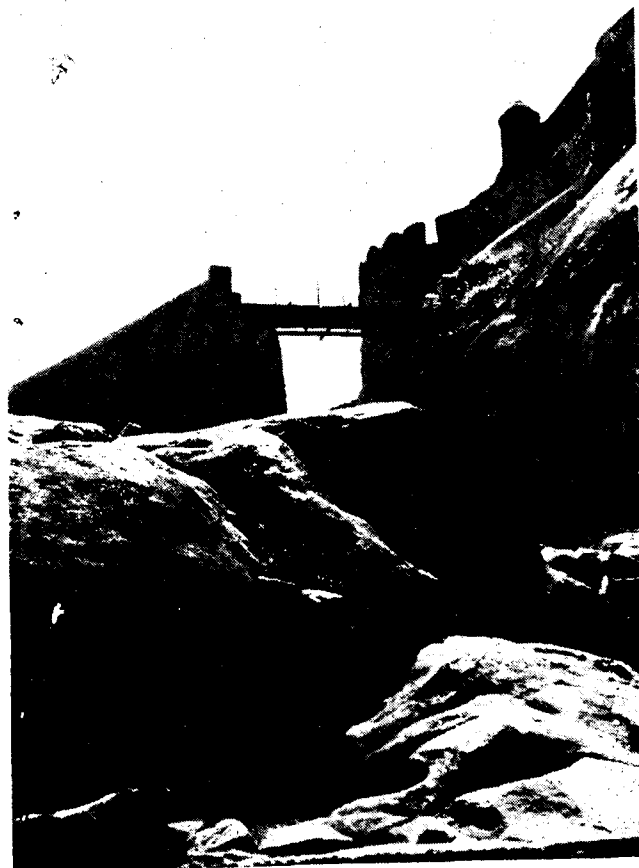
Villupuram junctions, about 76 miles south of Madras. This historic place is on the main bus route, which connects the two prosperous towns of Tindivanam and Tiruvannamalai. The road is a good metalled one which enables the visitor to reach this place from Tindivanam in the space of a couple of hours. The best method of visiting this slightly out-of-the way place is to reach Tindivanam by the previous evening and rest there for the night and also make suitable arrangements for conveyance to Gingee the next morning. Rising early the next day, it is better for the visitor to reach Gingee in the early hours of the morning and before visiting the historic sites, make suitable arrangements with the man in charge of the local fund rest-house for his stay and food and then proceed to the main object of the visit—seeing the giant fortresses there. A visitor to this ancient historical site will be amply recompensed for the inconvenience that they may have to undergo by the study of these great monuments and citadels that are still left behind after the irreparable vandalism of successive hordes of invaders and marauders. Before wasting more time, let us take the visitor on this imaginary tour, acquainting him with the several relics that he must see here.

The main road from Tindivanam to Tiruvannamalai runs right across the fortresses, which are three in number, constructed on three different hills, which form the angular points of gigantic triangle. The entire basement of these three fortifications is enclosed by a huge rampart about sixty feet in thickness built with huge blocks of

granite, round which runs continuously a ditch which once contained water rendering it unfordable and which is at many places as wide as eighty feet. The walls of the entire fortification are still in a very good state of preservation, except in some places where they had been pulled down for modern purposes like laying roads.

The three rocks form the three citadels, of which that one situated in the east is called *Rajagiri*, being the most important, the one on the north known as *Krishnagiri* also known as "*English Mountain*," while the last one is known as *Chandrayan-drug*, sometimes known as "*St. George's Mountain*." Besides these three conspicuous fortresses, there are four others of minor importance within the area encircled by the rampart walls, which extends in all to nearly ten miles in circumference.

The highest of these three citadels in *Rajagiri*, which was also the most important and principal fortification of this famous place. It was originally called *Kamalagiri* and later as *Anandagiri* and is about 800 feet in height. Rough weather-hewn boulders make up this hill and steps are cut out of these rock surfaces to enable the visitor to climb the hill, which though is of slight gradient at the beginning, shoots up perpendicularly just about its middle, which not only makes further ascent arduous but also gives an unique appearance to the hill, even when seen from a distance. Just at its summit, the path is cut off by a wide natural chasm nearly 30 feet in width and nearly a hundred feet in depth, which can now be crossed by a small wooden bridge. In those ancient days,



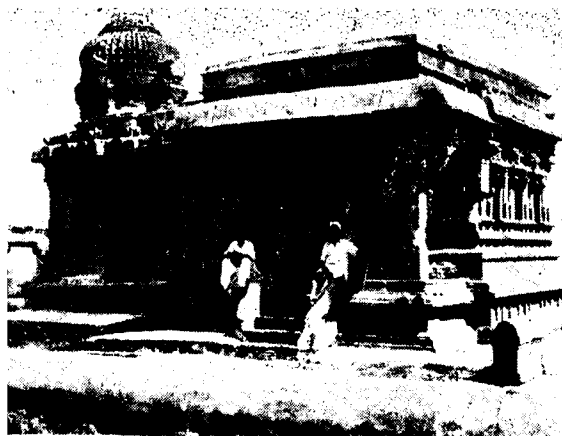
The suspension bridge on Rajagiri hill

this was covered by a drawbridge, which prevented the enemies rushing to the citadels on top but assured them of an unexpected plunge into the depths of the mountain, assuring sure death to them. This impregnable hill is further increased in strength by the numerous embrasured walls and openings that used to control the unwelcome invader, for before reaching the top as many as seven gates had to be traversed.

Alongside the path leading to the top, there is a very small unostentatious shrine of the goddess

Senjiamman, one of the seven guardian Virgin Deities of this place and after whom this place received its name.

The citadel on the top is reached after crossing the narrow wooden bridge. On the top of the fortress, there is a nice little temple of *God Ranganathaswami*, which contains a lovely central shrine crowned with a nice *vimanam* and a *mukhamandapam* in front. But the temple itself is today empty—without the image—as the cruel hands of the ruthless invaders had destroyed the sacred relic. Behind this temple, there is a fine *asthanamandapam* built in the characteristic Vijayanagar style of architecture, having very finely carved pillars. Adjacent to this there is a strongly-built simple structure which perhaps served as the strong room of the treasury of the fort. Nearby there is a spring of good clear water, which was the main source of water-supply both when this place was lively with life and even today for the parched visitor rushes to it to quench his thirst, especially after an extenuating trekking. By the side of this spring stands a small shrine dedicated to that great God of Success, *Sri Hanuman*. The next structure of importance to be seen is the famous *Durbar Mandapam*, which is of two storeys, the upper one being square in shape and elegantly constructed with a finely carved—hemispherical dome on top. This place served as the audience hall and at its time of glory had seen many potentialities of the realm. The topmost structure amidst the group of several edifices here is the *manikoond*—the place from which the time-keeper of the palace struck the huge gong to announce the hours in olden days.



The temple of Sri Ranganatha on Rajagiri hill

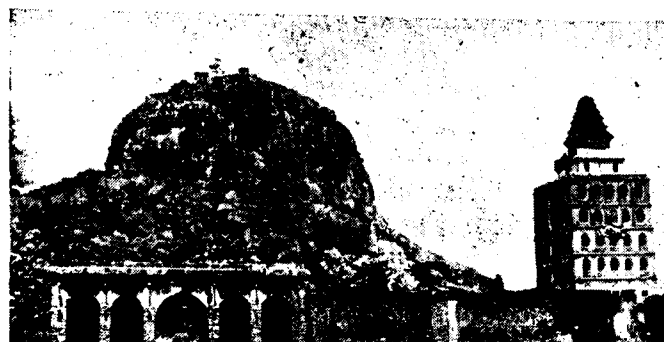
Coming down the hill—as the scorching sun will deter the visitor from staying longer there and as he has many more places to see—we see in a wayside mandapam a huge cannon lying half sunk in the mud rusty through exposure to the elements and non-usage—for it is nearly 11 feet long and about 7 feet in circumference. It, among many others, defended this fort for its rulers and arrested the onslaught of the inhabitants by its thundering explosions.

Reaching the foot of this Rajagiri fort, the visitor will have to spend sometime to see closely the finely constructed *Kalyana Mahal*. It is fine masonry structure rising up in a tier of eight storeys to a height of about 80 feet from the ground level, with a lovely gopuram-like tower on top. It served both as a watch-tower in times of strife and as a place of cool resort during the days of peace. In continuation of this elegant edifice are the well-kept stables for elephants and horses on the one side while on the other side stand two huge rectangular structures, which though empty today served as the graneries in those prosperous days.

Rambling amidst the ruins of the lower fort, the visitor is struck with the huge gopuram at the distance, standing out majestic and fresh even today. It crowns the entrance to the temple of *Sri Venkataramanaswami* and the temple itself is huge one with numerous mandapams and *prakarams* constructed in the traditional Vijayanagar style. In front of the gopuram is a slender stone pillar which served in those days as the *Deepasthambam*. Going inside, we see the very lovely mandapams standing on nicely carved pillars, containing intricate designs and images and it is said that it was built by one Muthialu Naicker, a chieftain under the Nayakkan rulers of the south. During the French occupation of this place, they removed many of the stone pillars of this temple to Pondicherry to ornament their sea-front and also to serve as the base for their statue of Dupleix, which they installed there at the Place de la Republique and these still grace that place.

The *Pattabhiramaswami* temple which stands nearby is also considered equally important from its architectural aspect. The twelve pillars that support the mandapam here done very exquisitely attracted the keen

Rajagiri hill with the Kalyana Mahal in front, Gingee



eyes of the Collector of this place in 1858 to suggest to the authorities at the Fort St. George at Madras for being removed to the capital to serve as a pedestal to the statue of General Neill—the Madras hero of the Mutiny—which was then erected there, just as a counterpart to the statue of the French General at Pondicherry. However the idea was not allowed to materialise but Neill's statue adorned the Mount Road centre till very recently.

To the west of the *Venkataramanaswami* temple, there is a big tank known as *Anaikulam*, which as the name itself indicates served at one time to bathe the elephants of the royal stables. Slightly away from this are two other tanks known as *Chakra-kulam*, the waters of which are crystal-clear and the *Chettikulam*, on the banks of which stands the platform where the body of the famous Raja Desing was cremated and where his young wife committed *sati* in the funeral pyre of her lord.

Going next to *Krishnagiri*, the hill lying to the north of the main road, we observe that it is smaller in size and height. It is named so, because the rulers of this realm used to live in this fort during the *Krishnapaksha*—the dark fortnight of the month, while they occupied the Rajagiri during the bright fortnight of *Suklapaksha* of the month. It is also named as the "*English Mountain*," for it was under the possession of the English soldiers during their wars with the French.

A flight of roughly hewn steep steps takes the visitor to the top of this fortress, where there are several graneries and mandapams. Just as on Rajagiri,



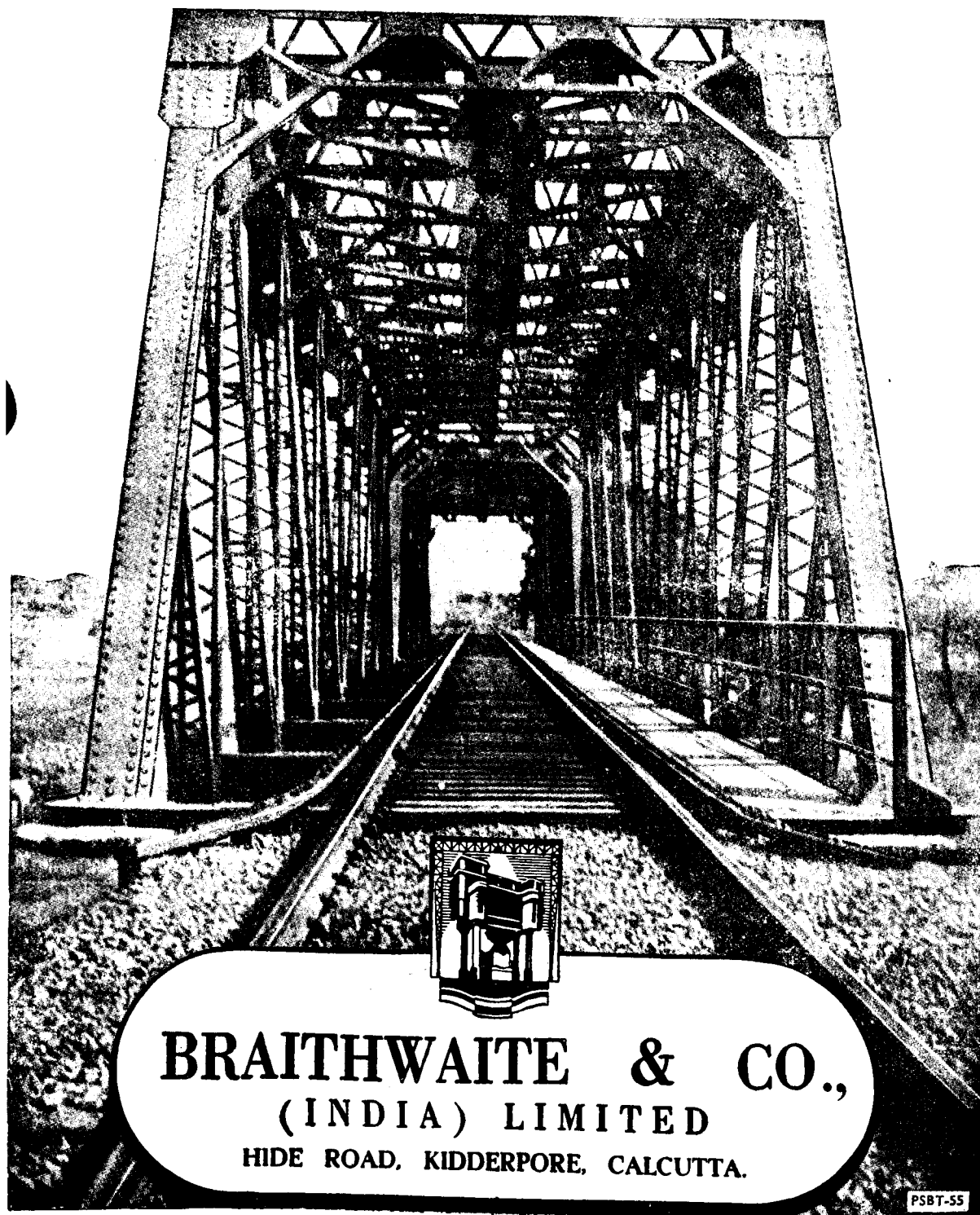
The front Gopuram of Sri Venkataramana temple at Gingee

there is a fine temple here also, dedicated to *Sri Krishna*, which is also empty and desolated. In front of this lovely shrine, there is a small but well-carved out *Balipeetam*, with a niche which perhaps in those palmy days housed an image of *Garuda*. On this hill we see also structures of secular nature, as we have in the other hill, but from the artistic point of view they are of an inferior type, showing an admixture of Islamic traditions—perhaps they were reconstructed by the Muslim conquerors to suit their taste and more to satisfy their innate desire to destroy anything really Hindu in culture.

The third hill of importance is the *Chandrayan-drug*, which is relatively

STEEL RAILWAY BRIDGES

RAILWAY BRIDGE CENTRAL RAILWAY



January 1957

SENJIKOTTAI

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smaller to these two fortresses and not so important as the structures there are not so very significant. It is also steep and difficult to climb, especially after the visitor had gone up these two important hills.

Any description of Gingee is incomplete without making reference to the famous rock-cut temple at the hill at *Singavaram*, which is about 2 miles south-west of the Gingee fort. A country road takes the visitor to this secluded place but once having gone there, it refreshes him to see this much hallowed place. On a small hillock ornamented with a steep flight of steps now painted red and white, stands perched the small temple of *Sri Ranganathaswami*. His shrine is crowned with a lovely *gopuram*, which the visitor sees even from a distance. Climbing up this hill, the visitor reaches the temple-precincts and going into the temple, actually the place is scooped out of the rock, is the shrine of *Sri Ranganatha*—the recumbent form of *Vishnu* on the coils of the serpent *Adisesha*. This image also is carved out of the rock and the figure, majestic and serene in countenance is about 25 feet in length. Though the image is just like any other image of *Vishnu* in the *sayana* aspect, one peculiarity to be noted here is that the head of the deity is depicted as slightly turned away from the usual position. The local legend attributes to this to an historical event in the life of that famous Raja Desing. It is said that the young ruler wanted to repulse the attack of the Nawab of Arcot Sadatullah Khan, who invaded this place in 1714 A.D., even though the ruler was on the throne for only ten months and that

his army was much feebler in strength. But the impetuous monarch, not heeding the words of his councillors sought the divine sanction. The great God was not also in favour of this idea and so signified His disavowal first by dropping down the garland that adorned His neck and then more significantly by turning His head aside. But the young monarch rushed to the fight and lost his life though gallantly but in the prime of his life.

Singavaram is what the English historians called in their chronicles as "*Bishun-gingee*," which is of course a mutilated form of the name "*Vishnu-senchi*" of the olden days, about which much has been said and written. When it was originally formed cannot be fixed but tradition attributes the origin to *Tupakkal Krishnappa Naicker*. He was a resident of *Kancheepuram* and a firm devotee of *Sri Varadaraja Perumal* of that place. He reared a flower garden near *Kanchee* and used the entire output of flowers for the service of *Sri Varadaraja*. To test the piety of the devotee, the Lord took the shape of a huge wild boar and destroyed all the plants in the garden. The gardeners were unable to catch this animal and so *Naicker* himself chased the animal with spear in hand. The animal keeping sight of the devotee beguiled him to a great distance and brought him to the locality where now *Singavaram* stands. Exhausted by the long trail, *Krishnappa Naicker* was about to faint, when the Lord revealed himself to him in his proper form and directed him to excavate the cave there. In the neglected hollow of the cave the *Naicker* saw the grand image of *Sri Ranganatha* and at the command of

Sri Varadaraja, he built the temple, for which also he was helped by the Lord. To obtain the necessary funds for the construction, the Naicker was helpless. He was asked to seek the help of an ascetic living there and practising a quaint form of sacrifice by throwing living persons into a boiling cauldren of oil and by alchemy turning the dead body into a mass of gold. Naicker was about to fall a victim to this ascetic but due to divine help, threw the mad recluse himself into the cauldren and out of the gold he so got, built this temple and at the same time rid the world of a monstrous person. Local traditions believe that the carcass of the dead ascetic is hidden somewhere in this hill but who knows where?

Singavaram was also the place that offered shelter to that Great Lord of Sri Rangam, *Sri Ranganatha*, during the raids of Mallik Khaffar in the 13th Century. The image of this deity was carried away to Tiruvengadam Hills for safety where he remained in the temple of *Sri Venkatesa* for nearly forty-five years. When peace was restored in South India, it was Gopanarya, the wise minister of Kampana Udayar, the local chieftain of Gingee that made suitable arrangements to bring back the deity to Srirangam. *En route*, this devotee retained Sri Ranganatha at Singavaram for sometime and lavishing a royal gift of costly jewels to the image. He was sent to his original abode. This great service of Gopanarya finds expression in one of the numerous *stotras* on *Sri Ranganatha* by that great Vaishnavite apostle, *Sri Vedanta Desika*.

The original founder of this ancient place is attributed to one Surasarma reputed to have been a ruler of Benares. He was blessed with a divine message, which directed him to settle down here and develop the place. It is said that Raja Desing is the twenty-second descendant of this founder. Gingee was the seat of the representatives of the Naicken rulers of Madura who were of three branches and ruled respectively at Madura, Tanjore and Gingee. In 1464 A.D. Venkatapathy Naik declared himself as the ruler of Gingee, displacing the original line of monarchs of this place.

Later, the Musalmans of the Carnatic both the Golkonda and the Bijapur rulers, began to invade this territory successfully and Gingee was occupied by them in 1658 when the place was subjected to untold cruelties of the invaders and Sayad Nasirkhan became the first *killedar* of Gingee. The Bijapur authorities re-named Gingee as *Badshabad* and in 1677 when Shivaji, the Great Mahratta ruler, invaded South India, he was able to drive away the Musalmans from this part of the country and acquired the strong fort of Gingee for himself.

Between 1680 and 1750 or so, Gingee was the scene of repeated battles between the Muslim rulers at Arcot and the foreign settlers both the English and the French till in 1761 the French Commander at Gingee Macgregor surrendered himself to the English Captain Smith. But in 1780 Hyder Ali made attempts to invade this place but by the close of the Second Mysore War in that year, Gingee had been free from the ravages of war but subject to desolation and decay. But the

story of Raja Desing immortalised by the well-known Tamil folk-song—*Desingu Rajan Kathai* needs mention here.

The real name of this popular hero—Raja Desing was Tej Singh and he was the son of Sarup Singh, a Rajput Governor of Gingee, when that part of the country was under the powers of the Bijapur rulers. Emperor Aurangzeb possessed a wonderful horse named *Kalyani*, which no one could mount and hold the reins even for a moment. Sarup Singh tried his luck to mount this steed and having failed was sent to prison for life. At that time Desing was a boy and when he grew up he learnt the woeful tale of his father's fate from his mother.

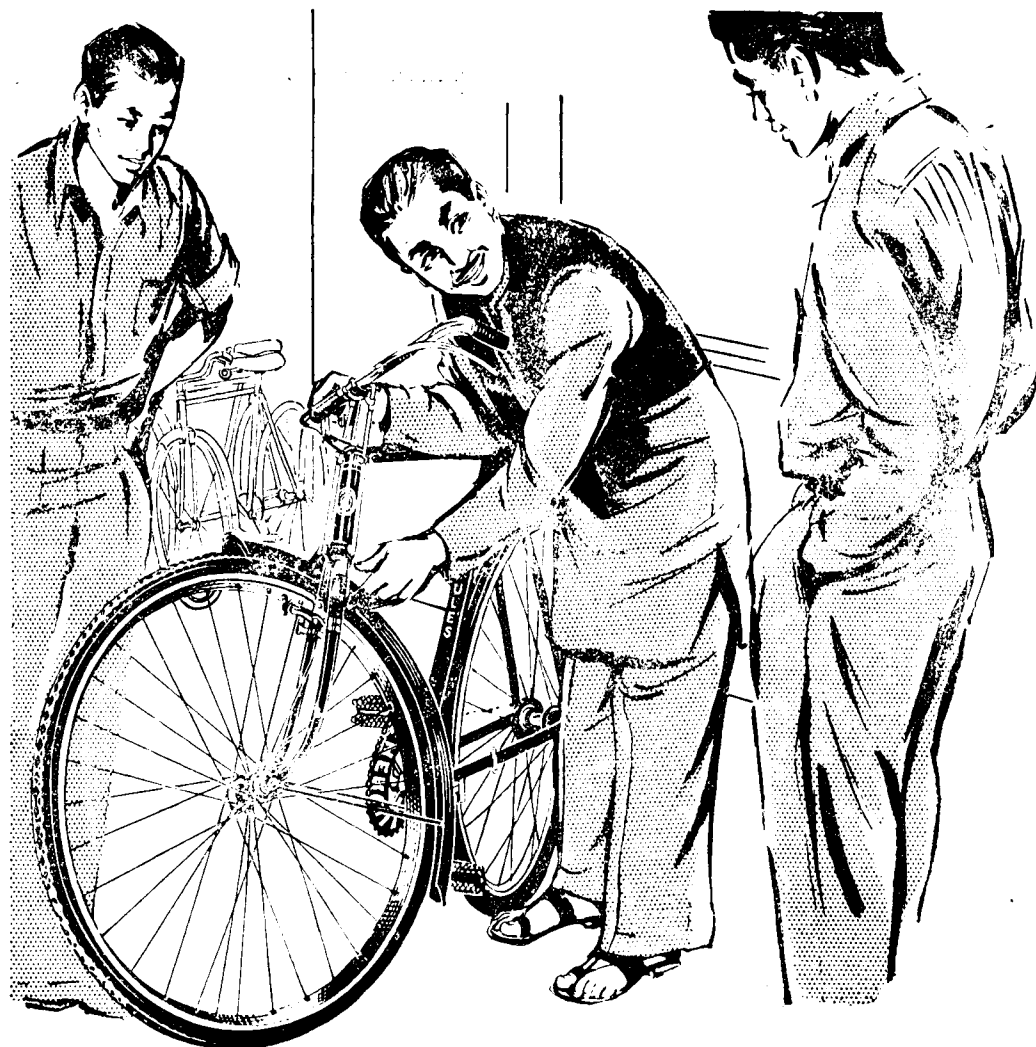
In spite of his mother's protest and his wife's supplications, young Desing went to the Moghal emperor's court and succeeded in subjugating that wild horse, much to the indignation of the Muslim rulers that were under the Moghal sway. The horse was presented to him and he was made the ruler of Gingee. But the Nawab of Arcot insisted on Desing paying the customary tribute to him, which of course the young ruler refused to give. This necessitated the Nawab invading Gingee under the command of Sadatulla Khan.

Though all the people advised this ruler to make peace with him, since he was on the throne for only ten months, the youthful ruler wanted to resist the invasion, even though Divine Will also was otherwise. His parting with his young wife is narrated in moving terms in the ballad. Though Desing displayed great valour in the fight, he was at last overpowered by the Muslims and was killed in the battle. His body was brought back and he was given a royal cremation, in which his young wife committed *sati*, burning with her all her costly jewels and apparels. This moved the Muslim commander, who commemorated her name and glory by creating a town on the banks of the river Palar near Walajapet by naming it as '*Ranipettai*' in 1771.

Today, Gingee is a small desolate village with the great historical monuments standing bleak and mute: where once the chargers pranced in martial arrays, the bullocks and goats graze and this reminds one of that famous quatrain of Omar Khayyam:

" They say the Lion and the Lizard keep
The Courts where Jamshed gloried and drank deep:
And Bahram, that great Hunter—the Wild Ass
Stamps over his head, and he lies fast asleep " (17)





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RAMU or GOPAL?

(A STORY WITH A MORAL)

A. J. C.

RAMU and Gopal attended the same school and were in the same class. Those were the only things in common to them. Ramu was the only child for his parents. Gopal was the eldest of a family of five children. Ramu, whose father was an officer of high rank in the police, was brought up in the lap of luxury. At the age of eighteen he sported about on a motor bike. For Ramu there was no speed limit. For him the law was not meant. So that is what he thought. He expected every traffic constable to recognise him as the son of Mr. S. and most of them did, for Ramu knew how to bring to book the constables who failed to pay him, what he demanded as due respect. At home he was all authority. His mother contributed in no small measure to his highhandedness. She held him as the paragon of manliness and made no secret of it.

Gopal's father died at the early age of forty. His mother thereafter shouldered the responsibilities of the bread winner. She obtained employment as a stenographer in a local company and so was father and mother to her children. Gopal had to walk to and from school every day, a distance of over two miles each way. His clothes were all patches and darns, the handiwork of his mother on her off days. He got a free meal at school. His books were also supplied by the school.

In class, Gopal was the butt of Ramu's jokes. The class as a whole was swayed by Ramu's swank and tall talk. He was always boasting of

entertaining and being entertained by high government officials. Ramu went all out to harass Gopal. He ridiculed his dress. He called him a tramp and even insinuated that he used to loiter about the restaurants of his locality for a free night meal. What did Gopal do? What could he do? The odds against him were too great. Very often he fought hard to keep back those tears which are the legacy of a sensitive youth in adverse circumstances. In this manner Gopal passed each day at school.

It was the last term for Ramu and Gopal. At the end of the term they would both appear for the Public examination. One day Ramu did not come to school. The term came to an end and the Public examinations were gone through without Ramu. The principal was informed that Ramu's father expired. Nothing more was heard about Ramu and his mother.

Gopal got through the Public examination with honours. He won a scholarship which helped him through College. Five years after joining College Gopal graduated, first in the State. He sat for a competitive examination and passed with honours. He was posted as a Deputy Superintendent of Police. His brilliance in the department was not overlooked and at a comparatively early age, he was at the helm of the Police Department.

One day while Gopal was entering his office he was struck by the familiar face of his new orderly, who "snapped" to attention as he entered.

After looking through the important letters of the day he summoned his orderly. In the privacy of the Inspector-General's office the two men stared at each other. Within a few minutes they lived through their school days; Ramu and Gopal. For a while Gopal hesitated. He then walked up to Ramu and shook him sincerely and heartily by the hand, the Inspector-General and his orderly, saying "forget the past." Gopal went further, he invited Ramu to his bungalow for dinner. That evening at dinner Gopal and Ramu conversed as class mates. Ramu told his story. After the sudden death of Ramu's father, both Ramu and his mother could not reconcile themselves to the shock and face the reality of having to leave

their luxurious quarters and give up their life of luxury. Within a few months Ramu's mother also died and Ramu was left an orphan, penniless and friendless. For many years he lived a vagrant life, until one of his father's friends got him a job as a constable because he did not possess the minimum qualifications for any other post.

The "Gentleman" in Gopal was at unrest. He could not have his class mate and the son of a late Inspector-General as his orderly. He used his influence and got Ramu a post on a salary befitting his social status.

Framing a moral for yourself, good reader, ask the question "In my walk of life am I a Ramu or a Gopal?"

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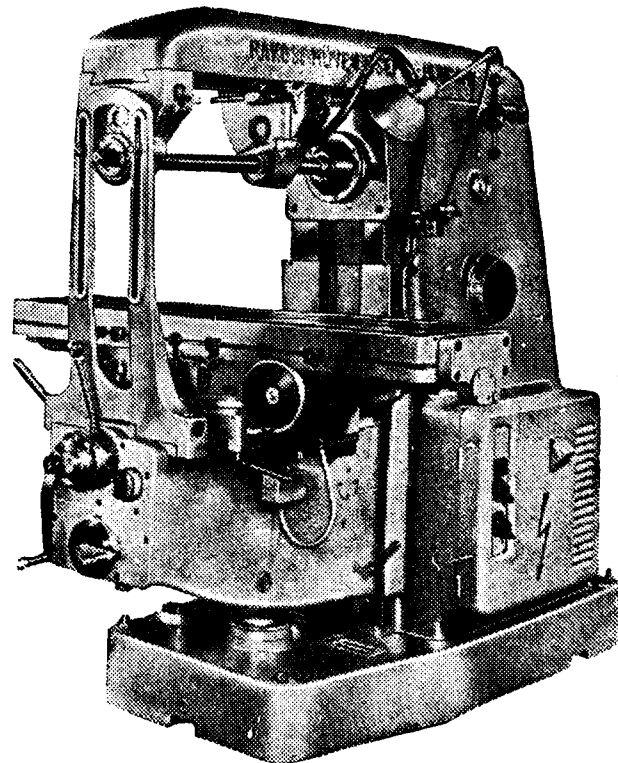
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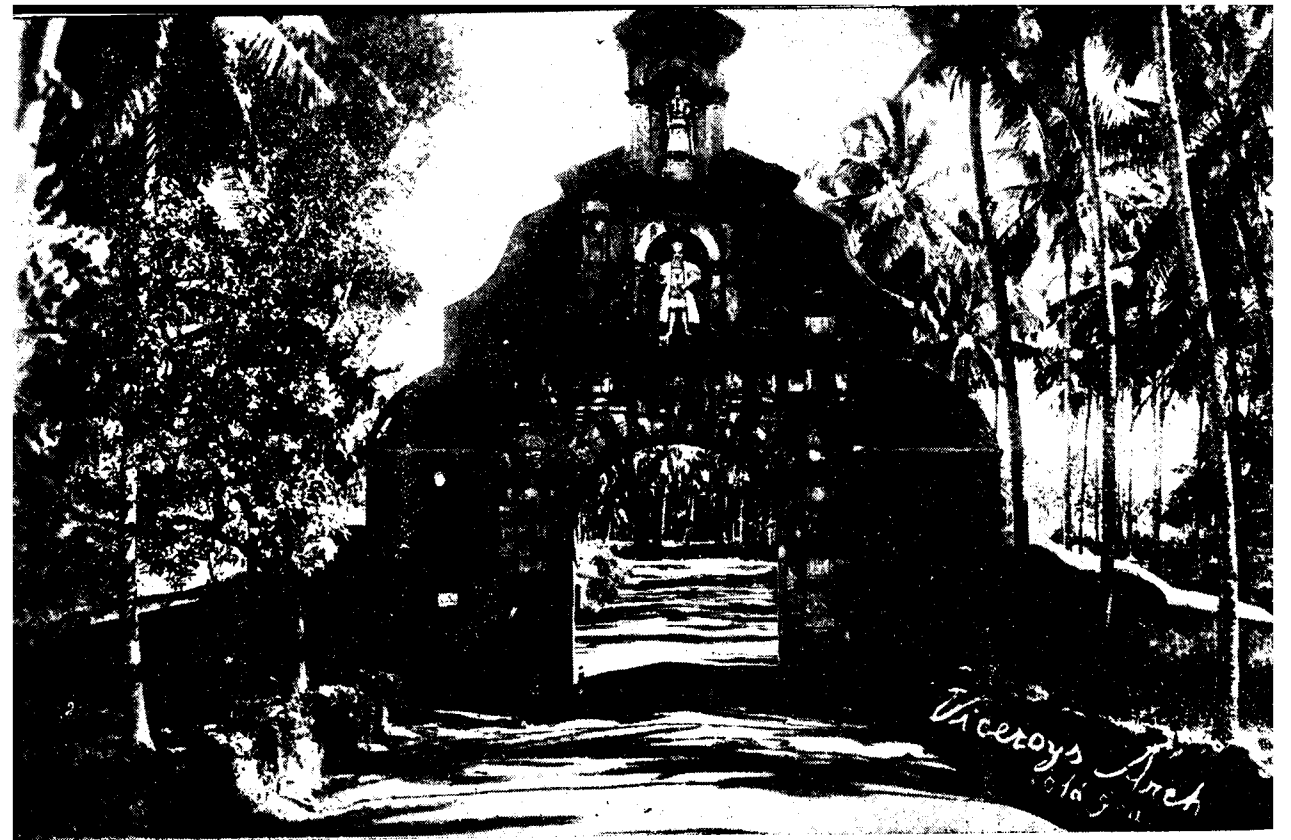
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The Gateway of Old Goa. Note the statue of Vasco da Gama in the centre of the arch and above it that of St. Catherine, the Patroness of Goa

GOA, THE MECCA OF CHRISTIANS

NORA SECCO DE SOUSA

GOA in the heyday of her glory was one of the principal emporiums of trade on the western coast of India, and the great centre which attracted merchants and people of various races and creeds from different parts of the world. So much so, that a saying often heard was "Let us amuse ourselves under the cool shades of Goa, and taste the sweetness of its betel." The city was also remarkable not only for its opulence and commerce, but also for its noble edifices, its

glorious fanes, its monasteries, churches and hospitals, and its famous universities and charitable institutions. Its fame and beauty attracted many a noted traveller who gave exhaustive descriptions of the place, people and customs. Today little is left of the ancient metropolis of Goa Dourada "Golden Goa", and her greatness is only a memory of the dim past. But it is Old Goa that Mecca of Christians described by Dr. Fryer in 1675 as "The Rome of the East," that sacred but destroyed city of

ruins that stir the imagination like Holy Jerusalem with its old monuments, triumphal arches, glorious structures, old churches and monasteries steeped in a long and chequered history of associations, that will be of the most interest to the pilgrim tourist. Successive stages in the history of Western India divided Goa into three cities—the original city of Goa (Goa Velha), built by the Kadambas and situated on the banks of the River Zuari, the neighbouring town of Velha Cidade de Goa generally known to foreigners as Old Goa and to Goans as Orlém Goa (Big Goa) and the third Nova Goa, commonly called Panjim, the present capital of Goa.

Old Goa was built by the Mahomedans in 1479 but greatly enlarged and embellished by Afonso de Albuquerque, who captured it in 1510 and made it the capital of the Portuguese Empire in the East. This famous city reached the climax of its splendour during the 16th century but with the decline of the Portuguese power together with the removal of the seat of Government to Panjim, the frequent plagues by which the population was repeatedly thinned, and the suppression of the religious orders, contributed finally to effect its complete downfall. Of the thousands of historical edifices which formerly flourished in Old Goa, only a few traces remain to convey some faint idea of their magnificence and grandeur. Nothing remains of the once famous palace of the Viceroys, built over the fine entrance to the City, except the main arch known as the Arch of the Viceroys or the Gateway of Old Goa. The arch is still impressive and was at one time an elaborate piece of work with carvings

and inscriptions on both sides, which have been partly defaced by time and by vandalistic hunters after relics and souvenirs. The lofty and noble Senate House, the mighty Palace of the Archbishop of Goa and Patriarch of the East, the grim Palace of the infamous Inquisition where the *auto de fe* was a solemnity which took place once in every three years, the Alfandega or Custom house through which passed the commerce of half the world, the Royal Hospital, the Aljube or the Archbishop's Prison, the Arsenal which included besides the Docks, various important public establishments such as the Mint and the Gun-foundry, the famous college of St. Paul, St. Augustine and St. Bonaventure, seats of learning and culture, the Santa Casa de Misericórdia or Holy House of Mercy, the Church of the Miraculous Cross, the Chapel of the Cinco Chagas or Five Wound of Christ—all have disappeared. No traces remain either of the Square of the Pelourinho Velho or Old Pillory where criminals were formerly punished. The square during the day was a sort of bazaar where all sorts of fruits and eatables were available, and at night was known as the "Baratilha" due to stolen articles being sold and obtained very cheaply there.

Foremost among the surviving edifices is the Cathedral or Se Patriarchal, one of the most ancient and celebrated religious buildings of Goa. It was dedicated to St. Catherine by Afonso de Albuquerque in commemoration of his reconquest of Goa on the day of her festival, and was built over the site of a Mahomedan mosque. It is externally built in half Tuscan

half Doric style, internally in the Mosaic—Corinthian, and is an enormous edifice covering an area of nearly 200 feet by 180 feet and is 150 feet high. The lateral tower now existing being of considerable height, overlooks the whole city and contains a great bell, the Sino do Ouro (Golden Bell) famous as being the largest and best in Goa. It is heard for miles around and is the same that used to be tolled on the occasion of the *auto de fe* in the time of the Inquisition. At the entrance, besides the two marble basins for holy water is a huge baptismal font of black stone believed to be the one the great Apostle of the Indies used to baptize a large number of the natives of India. Another remarkable object in this place is a large picture representing St. Christopher with the Infant Jesus on his shoulders. The church also contains several chapels and beautiful altars. The chapel of the Cruz dos Milagres deserves mention because of the Miraculous Cross which according to a legend was made by some pious shepherd boys from the stalks of palm leaves and planted in a rock by a priest, where it appears to have grown to nearly twice its size and the figure of Christ Himself appeared hanging from it. Its present length is over 20 feet. Another altar, dedicated to St. Isabel, bears enshrined in a chest with glass panels the remains of the Jesuit Martyrs of Cuncolim, who six in number were massacred by heathens of the place while engaged in building a church. The Cathedral is also noted for some priceless paintings and valuable gold vessels besides many others being the Monstrance in the tabernacle on the main altar and an artistically

engraved chalice of Venetian workmanship.

Within a few yards of the Cathedral is the Convent and Church of St. Francis of Assisi. Pyrard who visited the Convent in 1835 called it the richest and most beautiful in the world with the embossed walls of its cloisters portraying the chief incidents in the life of St. Francis of Assisi, painted in gold, blue and other colours. Admirable sculpture and some beautiful paintings of Saints may still be seen in the great choir where till 1828 there used to be three fine organs. All that remains today however of the original building erected by the Franciscans in 1517 is the superb portico of black stone exquisitely carved, through which St. Francis Xavier and other celebrated personages in the annals of Portuguese history entered. The ruins of the church still recall to memory the numerous triumphs which were commemorated within its walls amid pomp and pageantry when crowds of proselytes were baptised, the *autos de fe* celebrated in the presence of the Viceroy and his court, and the funeral obsequies of many illustrious persons, whose remains lie buried there, carried through. A Museum of Archæology where may be seen a collection of stone sculptures, inscriptions, friezes and frescoes and other examples of ancient Indian Art from former Hindu temples and pagodas, is housed in the Convent.

Close to the ruins of the Palace of the Viceroys is the Convent and Church of St. Cajetan built by some Italian friars of the order of the Theatines in 1655. The church is small but



*Pulpit of St. Francis Church
«Old city» Goa.*

bathe, as about the period the church was erected the Hindus were prohibited from publicly celebrating their religious rites in the city and it is possible that this sacred well was used.

Another very interesting and historical building now in a half ruined condition is the great nunnery and church of St. Monica built in 1606 by the Archbishop Alexio de Menezes and reconstructed in 1613 by Father Diogo de Sant Ana. The convent was large enough to accommodate a hundred nuns who were known for their great piety, it also possessed a beautiful chapel with a fine organ and many paintings. It is also famous for its underground tunnels and elaborate carvings. The external architecture of the church is a combination of the Tuscan, Corinthian and Composite orders, and the interior belongs to the Doric and Composite. The most remarkable object in this church is an image of Christ reputed to be miraculous as it is said to have opened its eyes and been seen moving, while from its wounds blood appeared to flow as though it were living, when there was a time of great stress in Goa. Besides this there is a fine monstrance here which is one of the most beautiful to be seen in Goa, and represents a pelican with open wings holding a sphere in its claws made of chaste silver.

The church of Bom Jesus the last and most important edifice which has survived the ruins of Old Goa was commenced in 1594 and consecrated in 1603. It is a superb structure and enjoys world-wide renown as being the repository where is placed the magnificent tomb containing the body of St. Francis Xavier, the events of

exceeds in beauty the Cathedral itself, and is said to have been built after the style of the Basilica of St. Peter in Rome. The principal chapel is remarkable above all for its altarpiece which is admirably wrought and tastefully gilded. Under the altar there is a fine crypt wherein are deposited the embalmed bodies of the Governors of Goa. An excellent spiral staircase of fifty steps leads to the church tower where the bells are hung, while in the middle of the nave there is a well or tank with a small opening in its covering closed with a square slab. Some say this reservoir of water within the church was a sacred tank or tirtha wherein the Hindus used to

whose life are depicted in four marvelously executed bronze panels around the casket which enshrines his body and in numberless canvasses surrounding the several altars and set into the arches of the nave and aisles. The church itself has a magnificent main altar dominated by a great wooden statue of St. Ignatius Loyola. Of great beauty and magnificence is the vestry lined on all sides with great cabinets of sandalwood elaborately inlaid with ebony and gold fittings; the lofty vaulted room conveying immediately the impression of vast wealth and ancient sanctity. The cabinets with their great doors and five hundred drawers were meant for the use of the numerous clergy which were once attached to the church.

Inside is a rich gold monstrance containing a portion of the phalange of the third toe of the right foot of St. Francis which fell off at the Exposition of 1859. Attached to the church is a great convent which was formerly the professed house of the Jesuits in India. It is an impressive building and houses the Museum of St. Francis Xavier, in which are kept several precious articles and other relics once the property of the Saint, also a large collection of rich vestments thickly embroidered with gold and valuable stones. Of great interest to the scholar is a large assortment of archaeological remains among them being the Missal of the Inquisition and various other objects of art and culture.

SOUTHERN RAILWAY

TENDER NOTICE

No. S/HSM/57/1

Sealed tenders are invited for the purchase and removal of condemned and scrap materials such as Wagon Bodies, Boilers, Bogie Trucks, High Speed Steel Scrap, Steel Tool/Ball Bearings, Machines, Engine Generator Sets and Printing Machines, etc., etc., from the Stores Depot situated within the Workshops, Golden Rock, General Stores Depot, Perambur and Hubli, Power House, Guntakal, Railway Workshops at Hubli and Perambur and Printing Press, Trichinopoly Junction and will be received by the Controller of Stores, Southern Railway, Ayavaram P. O., Madras-23 before 3-0 p.m. on the 23rd January 1957.

The prescribed form is obtainable on payment of Rs. 5 per copy in cash or by M. O. Remittance by any other means will not be accepted.

Tender forms will not be issued after 12-0 noon on the 19th January 1957.

P. N. TALATI,
Controller of Stores.

Precision Built...

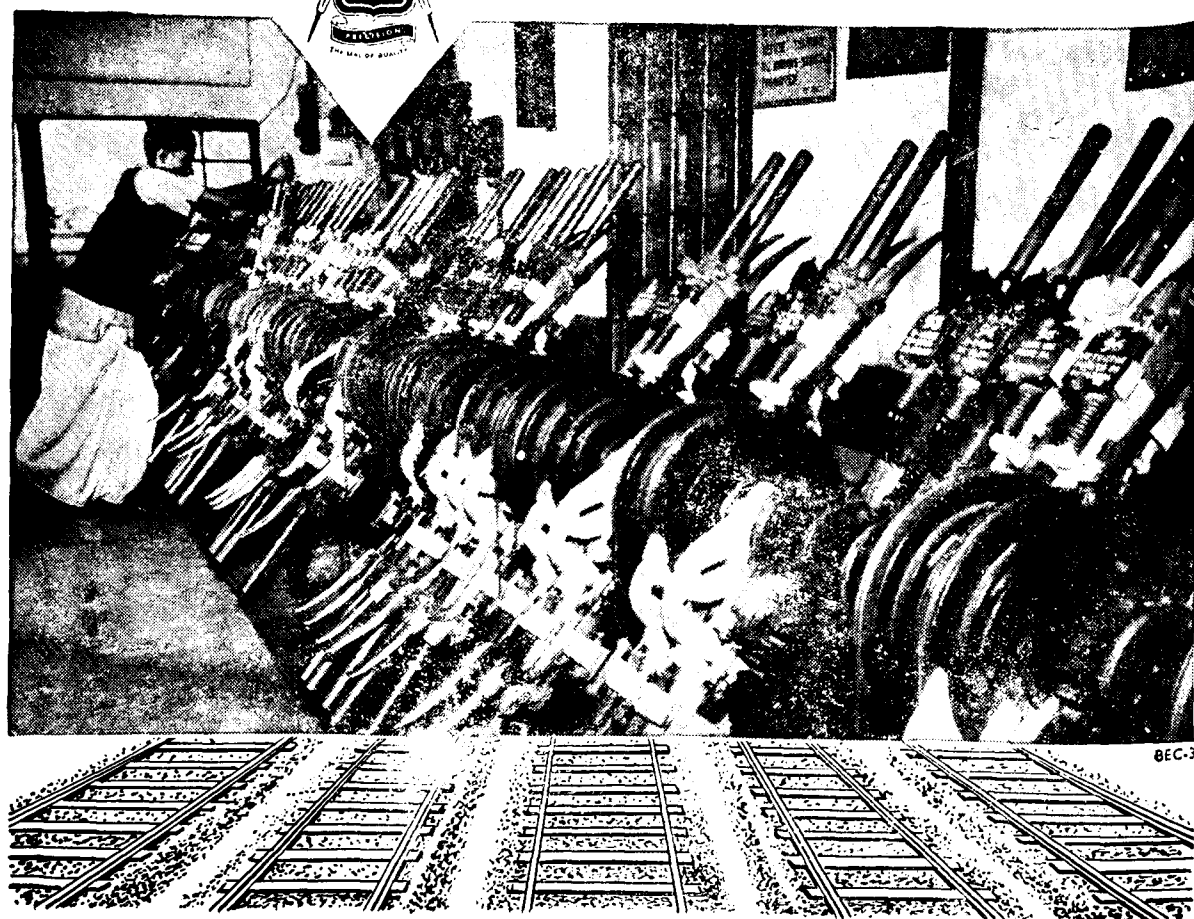
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“RAILWAYS OVER THE MOUNTAINS”

OPRAIL

PEOPLE who have been born and have lived in mountainous parts of the world take these towering and majestic heights of nature as granted. But to the plainsmen, and more especially those living in tropical lands, a trip to the mountains is not only a long-sought for break from the heat and monotony of the flat plains, but an experience which leaves the mind and body refreshed.

Today, even in India, if we want to take a trip to a popular, or remote hill resort, we board a broad or metre gauge mail or express train, that will take us almost up to the base of the mountain range on which our favourite hill station is situated. Then at the junction we change over into a narrow gauge railway, whose engines and coaches seem like playthings when compared with the giant broad gauge locomotives and long streamlined passenger coaches. But those little hill locomotives and passenger carriages have all the power they need to take us up to the dizzy heights of the hill station, which may be from eight to ten thousand feet above sea-level.

But when we think back to the time, less even than century ago, our grandparents or great grandparents seeking a change to a hill resort like Darjeeling, Simla, Ootacamund or Naini Tal, would have to travel by horseback or palki up a long, winding hill-track, until they got to their destination, after a long and wearisome journey, and rather unsafe too. But now that our hill railways are commonplace, perhaps it would be of interest

to know a little of how they came to be built on nature's most formidable terrain.

Experiments for building hill railways were first made in that little mountainous country of Switzerland. Back in 1839 M. Lanicca put forward the idea of crossing the Alps by rail, carrying the rail track through the Splugen Pass at a height of 7,000 feet. But Lanicca was ahead of his times. It was however the Austrian Chega who built the Semmering line over the eastern Alps. This was the first mountain railway to be constructed in the world.

From Switzerland, the idea of building mountain railways was taken up by India, and the first mountain railway to be constructed in India was the railway line between Siliguri and Darjeeling in the year 1878. Franklin Prestage, the then Agent of the Eastern Bengal Railway Company, was responsible mainly for planning the scheme and completing the construction in two years. This railway comprised of a length of 51 miles of two-foot gauge track, and mainly followed the route of the original cart road between Siliguri and Darjeeling.

Snaking over deep ravines and precipices, swerving round sharp curves and creeping up and over steep gradients, this Darjeeling-Himalayan Railway (nor forming part of the North-Eastern Railway) ascends to a height of 7,000 feet in forty miles. The ruling gradient of this line is 1 in 25,

although in places the gradient is 1 in 20 and in one place 1 in 19. A strange and remarkable feature of this little railway is the absence of tunnels, which although it would have considerably shortened the over-all length of the line, would have entailed a very much longer period of building and at enormous cost. The boring of tunnels into the mountains was eliminated by means of 'loops' and 'reverses'. In the 'loop' the track circles round and passes over a gradient by a bridge and so attains a higher elevation. The 'reverse' achieves the same object by running the track back diagonally and upwards for a short distance, and then using an alignment parallel to the original alignment, but at a higher elevation up the side of the mountain.

When this Siliguri-Darjeeling rail system first started operation the small locomotive used was only capable of drawing a load of about seven tons, and the original passenger vehicle was a small four-wheeled trolley with a canvas roof-top and two wooden benches for seating the passengers. The standard type of locomotive used today can draw a load of 32 tons. The passenger coaches are 26 feet long and 6½ feet wide, and quite comfortable for travelling. These little hill locos also haul bogie vans and trucks, the longest being 32 feet, for carrying freight.

A hill railway to Simla was first thought of in 1847; but it was not until 1903 that the railway could be built. This mountain railway consists of 60 miles of narrow gauge track running between Kalka and Simla. Starting at 2,800 feet above sea-level from Kalka

the rail track climbs to 7,000 feet at the Simla end.

The construction of this railway gave the engineers opportunities to achieve works of engineering skill of the first magnitude. Apart from numerous cuttings and embankments, the track probes its way through as many as 103 tunnels, the longest single tunnel being 3,752 feet at an altitude of 5,000 feet.

There is another picturesque and attractive hill station at the southern end of our Indian peninsula, known as Ootacamund, which is situated in the heart of the Blue Nilgiri mountain range. Unlike Darjeeling and Simla, this hill town lies on a plateau and gives the appearance of a huge and lovely park. To get to this hill resort you will have to board a train of the Nilgiri Mountain Railway which starts from Mettupalaiyam, the terminus of the broad gauge Southern Railway. The track then climbs to a height of 7,500 feet by the time Ootacamund is reached. The scheme for this hill railway from Mettupalaiyam to Coonoor, a distance of nearly 17 miles, was first mooted as far back as 1894, but it was not until 1891 that the construction work was begun by the original Nilgiri Railway Company. This Company went into liquidation in 1894 and a new company formed in 1896. The line was opened for traffic in June 1899.

The Government of India bought out the new company in January 1903 and the work of extending the line a further 11.75 miles to Ootacamund was commenced and finally completed in October 1908. Unlike the Siliguri—



Ootacamund

Darjeeling line, and like the Kalka-Simla Railway, this hill railway of a little over 28½ miles, bores through 16 tunnels, 14 of which lie between Kallar and Coonoor. The line also runs over many girder bridges constructed over deep and precipitous ravines. A number of these bridge structures are situated almost at tunnel entrances and on sharp curves, which involved considerable engineering skill in construction.

A peculiar feature of this hill railway is the rack bars on special chairs, which have had to be provided at several places centrally between the rail tracks, due to the steep incline of the line between Kallar and Coonoor where there is a gradient of 1 in 12.5. These rack bars are laid on the slope of the line and form a sort of ladder up which the engine climbs and pushes the train.

The density of traffic on hill railways is rather thin, with perhaps just one or two trains a day running in each direction. These trains operate during

daylight hours only. It is because of this light traffic that accidents as the result of failures from an operational aspect are rare. Nevertheless, there is a type of accident that is dreaded on these hill railways. These accidents usually take place during periods of heavy rainfall. The dreaded phenomena of nature is the landslide, when as a result of days of heavy rain, large slices of the mountain side above or below the track suddenly slacken and thunder down on to the narrow gauge track, or leave them suspended in mid-air. Thousands of tons of boulder, rock and earth now form a formidable obstruction over which no traffic can pass until every bit of this is cleared and the track repaired. When such natural calamities occur, hill stations are cut off from the rest of the world for days on end, unless of course there is an air transport link.

When man wants anything he will use all his brains and skill to get or achieve what he desires, and because the plainsman looked up to the hills and yearned perhaps to stand on those lofty heights, he, with his fellow men, went to work. After hard labour and toil, a railway comes into being from the plains to the base of a range of mountains. Along this little railway man can travel high up the mountain ranges, where he can enjoy the beauty and grandeur of nature's landscape all around him. If he is tired and worn out after exhausting labour in the summer heat of the plains, he can make a trip to his favourite hill station nestling high up in the mountain peaks, where he can fill his lungs with the cool, and exhilarating air that can only be had thousands of feet high above the earth.

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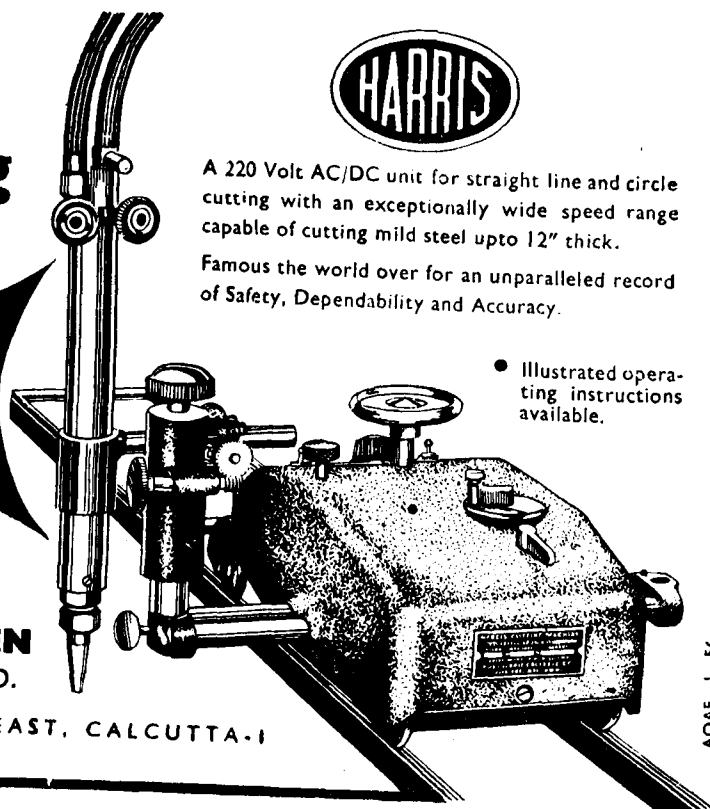
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SOUTHERN RAILWAY TENDER NOTICE

1. The Chief Engineer, Southern Railway, Madras, invites sealed percentage tenders for the work of "BAGEWADI—Conversion of into a crossing Station" Hubli Division, upto 12-00 hours on Monday, the 28th January 1957.
2. The tender should be submitted in the prescribed form obtainable from the Chief Engineer's Office on production of a receipt for a sum of Rs. 10 paid to the Chief Cashier, Southern Railway, Madras, or Divisional Accounts Officer, Mysore, or any Station Master on the Southern Railway, towards the cost of the tender form. In no circumstances, will the amount paid for the tender form be refunded.
3. The tender form is not transferable.
4. The tenderer should submit along with the tender the Income-tax Clearance Certificate in original or an authorised copy, or if he has no taxable income, a sworn affidavit duly countersigned by the Income-tax Officer to that effect.
5. The tender forms will not be issued after 15-00 hours on Monday, the 21st January 1957.
6. The total approximate value of this contract is Rs. 1,44,400.
7. Earnest money of Rs. 7,200 should be paid in advance to the Chief Cashier, Southern Railway, Madras or Divisional Accounts Officer, Mysore, and the receipt issued by him should be attached to the tender. No demand draft or cheque is to be attached to the tender.
8. The earnest money will not be accepted after 15-00 hours on Tuesday, the 22nd January 1957.
9. The tenders will be opened at 12-00 hours on Tuesday, the 29th January 1957 in the Chief Engineer's Office at Madras.
10. The Chief Engineer reserves to himself the right to reject without assigning reasons, any or every tender or part thereof and does not bind himself to accept the lowest or any tender or part thereof.

THE PSYCHOLOGY OF THE GOOD SAMARITAN

A. V. SUBRAMANIAN

Divisional Personnel Officer, Olacakkot

A very rich American lady was recently reported to have committed suicide for the reason that she got no fun out of life! None of the usual reasons for suicide was present in this case. It was not poverty or failure in love affairs or cruelty of a husband that urged this young lady to take her life. It stemmed from the most fundamental of all causes—she had not learnt the supreme joy of living for others. She was a highly circumscribed selfish little animal who saw no point in living, as all her animal needs had been met. Hers was a tragedy of a self-centred being, as all selfishness is truly tragic in character.

shedding a little of his self-love in the process.

Psychologists who have studied the problems of the neurotic, the maniac and the suicide, declare that their most characteristic single feature is that they have always cared for none else except themselves and have lived narrow selfish lives. A distinctive form of psychosis known as paranoia manifests itself in the form of extreme suspicion: the victim is firmly persuaded that everyone around him is plotting against him, and is always on guard against them. This springs from a most exaggerated self-love and conceit and a feeling that the neighbour is envious of one's pre-eminence. It is claimed by psychiatrists that paranoia is curable at this stage if the victim can be persuaded to take an interest in the world around him,

To turn away from this dismal picture, we may examine the psychology of the Good Samaritan. A Good Samaritan interests himself in things which are not connected with his own aggrandisement. He goes out of his petty self to the warm sunshine; he can cast off the shell of his own self-interest and can occupy himself with the hopes and fears of the world around him. He is prepared to make small sacrifices in return for which he reaps bumper harvests of a mellow satisfaction. As it has been said happiness is like a perfume; you cannot sprinkle it on the people around without getting a few drops of it on yourself. Like Cardinal Newman's Gentleman, a Good Samaritan is too busily occupied to bear ill-will or malice. From this springs a whole host of good qualities: the absence of ill-will makes for freedom from moods and the mind is occupied by clean thoughts, and good cheer and mental peace are invariably the result. For every little sacrifice he makes, his nature becomes more refined and it is easier for him to make further sacrifices. In the end, he shines like a sun of good cheer shedding warm radiance all-round.

Florence Nightingale had a very difficult family to deal with. She had a neurotic sister, an ambitious mother

and an indifferent impractical father. To add to her difficulties, she formed a very strong romantic attachment to an eligible young man. It is a measure of Florence Nightingale's will power as much as her power of sacrifice that she quietly brushed aside the obstructive family and burnt up the love that was surging in her heart so that she could pursue her mission in life. Any psycho-analyst, if he had had the privilege of studying the mind of Florence Nightingale, would declare that she was a very happy woman, that in fact she was one of the privileged few in this world who realise the dreams of their lives. It was given to this modern Good Samaritan to serve the cause of the nurse and the soldier, her altruism and the practical day-to-day toil in the pursuit of that altruism supplying all that her heart craved for.

Mental health consists in harmonising the personality with the environment. If a person is too much preoccupied with his own self, he loses this harmony and he finds himself sliding fast down the hill to mental disease. In the dream of youth, a grand picture of what one wants to be in adult life is built up; as an adult, one strives towards that ideal and in accordance with one's talents and effort, and the indefinable element known as luck, one achieves an approximation to that ideal. This happens in the case of every one of us. But trouble starts if one's ambition is pitched high and want of talents or dame luck prevents one from realising it. To face failure boldly and reconcile oneself to it takes courage and a measure of philosophical detachment. Such of us as do not have the gift of courage or the saving

grace of detachment (alas, how few have these!) become candidates for mental disease.

This is the basic set-up. But men differ very much in psychological make up and react differently to this basic situation. The result may be such widely different diseases as a depression state or paranoia. It is a matter of general observation among psychologists that no one however dismal his failure has been, ever becomes a prey to serious mental disease unless he is basically selfish and is given to morbid introspection. Introversion is not objectionable, but morbid concentration on self is the very devil! On the other side of the penny, an extrovert who goes out to meet the world, who regards himself as a member of a big family rather than as "self against the rest of the world" is seldom likely to be afflicted with neurotic or psychotic states.

The last statement may be good ethics but is it psychologically sound? Love in the human heart is in abundant supply and it must encompass somebody or something, such is its basic nature. If that love is not employed to encompass other persons or institutions, it inundates the self. The person then becomes morbidly selfish, all his hopes and fears come to have relation only to himself, all his living thoughts concentrate on his own aggrandisement. As long as he succeeds in life, nothing bad manifests itself. But to no one is given unbroken success or unmitigated woe in this planet and at the first failure the mind of the selfish person becomes a billowy sea of conflict. Black moods and depression set in: he begins to harbour

grave suspicions, he imputes unworthy motives to the persons around him, he withdraws himself into himself increasingly as a defence mechanism. His efficiency decreases and as a consequence, he may fail more often in his job. This naturally worsens his disposition and makes him more prone to depression. Thus he slides rapidly down to psychotic hell. If he recovers from the first attack owing to other reasons than a complete rebuilding of his personality, his temperament will precipitate fresh and more serious attacks with every new disappointment till at last merciful death intervenes.

"Love thy neighbour as thyself" is, therefore, as sound a maxim in psychology as it is in ethics. Examples of Good Samaritans remind us how good men are the only happy men in the world. An American correspondent in India relates how he had a

shock when he interviewed Mahatma Gandhi; where he expected to see a "half naked fakeer" of mournful countenance sitting precariously on a couch of spikes and surrounded by gloomy inane henchmen, he saw sunshine and laughter and happy lustrous faces! The contemporaries of Jesus have repeatedly expressed surprise at the good humour of the Master. It was not as might be supposed an oddity of his temperament that he wore a cheerful countenance, it is the manifestation of a truly altruistic spirit. Only pseudo-philosophers and faddists and protagonists of thought fashions need the mask of severity to hide the hollowness of their hearts.

The full consideration of the problem "how to rebuild one's personality" to which a reference has been made earlier, will have to be undertaken in a succeeding article.

SOUTHERN RAILWAY TENDER NOTICE

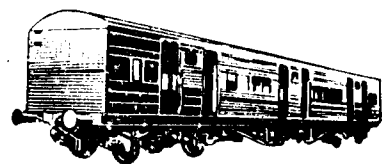
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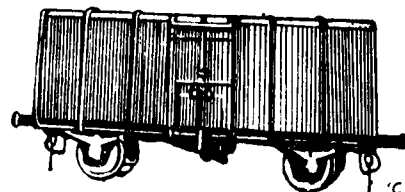
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Tender forms will not be issued after 12-00 hours on 25-1-1957.

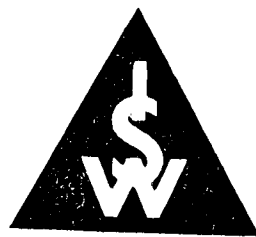
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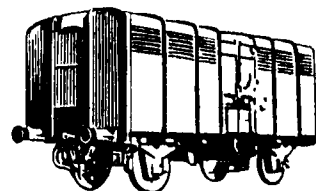
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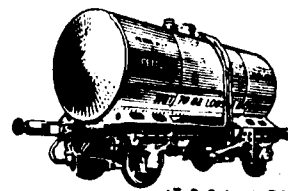
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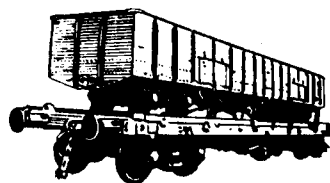
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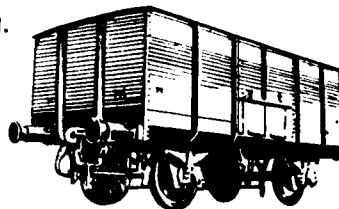
'C.M.R.' TYPE WAGON



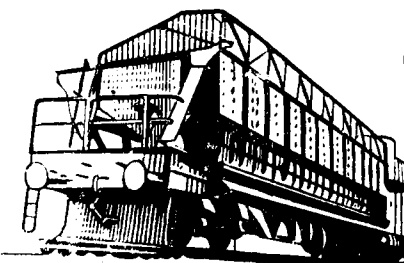
'T.P.R.' WAGON



'M.B.O.C.' TYPE WAGON
LOADED ON A 'BFR'
TYPE WAGON



'O' TYPE WAGON



'HOT COKE' WAGON

MSWC-4

IMPORTANCE OF RAILWAYS LOOKED AT FROM NEW ANGLES

K. SRINIVASAN

ACCORDING to the Industrial Policy Resolution of April 30, 1956, Railway transport has been classed as one of the 17 Industries in Schedule 'A'. Therefore, it has to be treated as an Industry, but it is an Industry which feeds the industries by taking raw-materials to the places where they are manufactured and manufactured articles to places where they are required. Agricultural products including foodgrains also have to be conveyed to the various places required. Manures, fertilisers, etc., have to be brought by the Railway to the fields. Any development of any industry has directly or indirectly got a bearing on the Railway Industry. Hence railway is an industry of industries.

Agriculture is an industry which has to be developed intensively. What a man takes out from the ground (from the land) he can put back into it in the form of manures and chemicals. Therefore, agriculture lends itself to intensive development (because one cannot exhaust the land). Presumably, that is why the Planning Commission has even at the eleventh hour increased the food production target nearly about 30 per cent.

As for industrial concerns, especially in the Mining industry, they should not be developed intensively because the Mines will get exhausted early. Mining is an industry which is to be worked extensively. But the Railway

transport industry has got the characteristics of both agriculture and also the mining industry. The Railways in certain localities where the density of traffic is heavy busy sections like Bezwada-Madras and Madras-Villupuram on the Southern Railway, Bombay suburban electric sections, Calcutta and Madras suburban sections—have to be developed intensively. There will be more goods as well as passenger traffic to be carried. The density of goods as well as passenger traffic is very heavy. There are branch lines which can be developed only extensively where the traffic is light. Developing the permanent way intensively may mean better signalling, better lighting, track circuiting and so on or it may also mean electrification or dieselisation or centralised traffic control. These are making the same line work more intensively, i.e., for greater density of traffic than originally designed and thereby augment the speed of trains and also increase the number of trains consistent with the maintenance of safety precautions.

Intensive development of railway may include the following items:—

(a) The track and signalling must be improved to make higher speeds possible over main line, and to provide for better utilisation of the physical assets; there will be an extended use of colour-light signalling, track circuits and automatic train control;

(b) Steam must be replaced as a form of motive power, electric or diesel traction being rapidly introduced as may be most suitable in the light of the development of the Plan over the years; this will involve the electrification of large mileages of route, and the introduction of several electric or diesel locomotives;

(c) Much of the existing steam-drawn passenger rolling-stock must be replaced, largely by multiple-unit electric or diesel trains; the remaining passenger rolling-stock, which will be drawn by locomotives (whether electric, diesel or steam), must be modernised; the principal passenger stations and parcels sheds will also require considerable expenditure.

Moreover, the railway undertaking has to feed all the industries with raw materials and take the manufactured articles where they are most required and where they can be had at comparatively small cost. It is not so much a question of whether the nation can afford to undertake the new investment in its railway system—the higher investment asked by the Railway Ministry—as whether it cannot afford to do so and thereby continue to carry the economic burden of a public transport system that lags behind the standard of railway efficiency technically possible. The Railway Plan, as framed by the Railway Ministry, provides the country with a railway system which will not only be fully efficient and economic when the plan is achieved but will also be adaptable to meet the requirements of many years to come thereafter. Calculations based on merely having the increased capacity

to carry the commodities, the production of which will increase on account of Planning Commission's schemes may not meet the needs of the public for Rail Transport.

The technical re-equipment of the railways is long overdue. The need for it became acute during the difficult years between the wars, but at that time the railways were hard hit financially by road competition and prolonged depression in the heavy industries.

The railways' problem was accentuated by the over-working of their assets in the Second World War. But whatever the causes, the need for re-equipment is so obvious that it need not be controversial. Despite the growth of alternative forms of transport, it is clear that the country must continue to look to the railways to carry the main flows of bulk traffic, both passenger and goods, for many years to come.

19 per cent of the total amount of 4,800 crores for Railways is arrived at by a rough and ready calculation of the general importance of Railways and the traffic they are likely to be called upon to convey in the Second Plan period. But considerations so far discussed and referred to, do not include a provision for Railways' importance as an industry which has to be developed intensively and also extensively. Moreover, Railways have to be extended by construction of about 840 miles of new lines. The yardstick for percentage allotment applicable to agriculture, mining and other industries should be made applicable to

Railways *mutatis mutandis* on account of the peculiar factors referred to above.

Out of a total of Rs. 4,800 crores allotted for the Public Sector in the Second Five-Year Plan, Agriculture and Community Development got Rs. 565 crores, which is about 12 per cent of the total allotment. It is true that "he who sows the ground with care and diligence can be expected to reap a greater stock of religious benefit than can be acquired by the repetition of 10,000 prayers". Irrigation and Power got Rs. 898 crores, which is about 18 per cent of the total allotment and Industries and Minerals got 891 crores, which is about 18 per cent of the total allotment. Among the various items indeed Railways' allotment of 19 per cent, as a single item, is the highest. Still, due to the following reasons, there is justification for allotment being augmented.

The branch lines which originally were working extensively, have to be worked intensively on account of traffic stimulated by Planning Commission's Projects. Such factors have to be considered for revising the allotment to Railways.

There are prospects of large scale employment and the consequent inevitable drift of population from the rural to urban areas. An increase of 3 to 4 per cent per annum in passenger traffic is anticipated. This will cause overcrowding for which provision has not been made in the plan.

As the panorama has unfolded during the discussions of the last six months of the First Five-Year Plan period, Planning Commission and the Railway

Ministry have come to recognise with mounting conviction that augmenting financial allocation to the Railway Ministry on the largest possible scale is an essential ingredient during the Second Five-Year Plan.

The consideration due to Railways on account of its partaking of the nature of industries like Agriculture which are intensively developed, and also of industries like Mining, which are extensively developed, are factors which have to be reckoned with. A hidden reserve has to be provided for augmenting the allotment for Railways. Moreover, the Railway Minister has pointed out that the Railways cater to the need of the private sector also and therefore when working out the percentage of expenditure, the funds allocated in the private sector should also be taken into account. If this is done, the percentage of expenditure on railway plan works out to only about 14 per cent of the total.

As pointed out by a high grade expert, the uncovered gap in the transport capacity during the Second Plan period would appear to be of the order of 30 million tons. The food production is estimated to increase by about 30 per cent or by 19 million tons. The additional cement production originally estimated was 5 million tons. This has subsequently been revised to 8 million tons. Out of which at least one-third or 6 million tons will require transport. Besides, there will be numerous other developments. For instance, the target for Piece-goods will be revised. Due to these factors, a substantial increase in the original target of 60.8 million tons of additional transport is expected. The quantity of

traffic for which movement has been provided for in the Second Five-Year Plan is 47 million tons. But these factors referred to above will increase the traffic to a total of about 75 million tons. This means about 30 million tons of additional traffic will be the uncovered gap for which transport has to be provided for.

It is calculated that the Railways would immediately require additional funds to the extent of Rs. 150 crores, which would also cover the cost of the strengthening of line capacity, some of which will be helpful even during the Third Five-Year Plan.



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SOUTHERN RAILWAY

TENDER NOTICE

Provision of a Combined Running Bungalow to provide 40 Beds at Mangalore - Olavakkott Division

1. The Chief Engineer, Southern Railway, Madras, invites Sealed Percentage Tenders for the above work, to reach him not later than 12 00 hours on Tuesday, the 5th February 1957.
2. The tender should be submitted in the prescribed form obtainable from the Chief Engineer's Office on production of a receipt for the sum of Rs. 10 paid to the Chief Cashier, Southern Railway, Madras-3 or the Divisional Accounts Officer, Trichinopoly or any Station Master on the Southern Railway towards the cost of the tender form. In no circumstances will the amount paid for the tender forms be refunded.
3. The tender form is not transferable.
4. The tenderer should submit along with the tender the Income-tax Clearance Certificate in original or an authorised copy or if he has no taxable income a sworn affidavit duly countersigned by the Income-tax Officer to that effect.
5. The tender forms will not be issued after 15-00 hours on Tuesday, the 29th January 1957.
6. The total approximate value of the contract is Rs. 1,13,000.
7. The Earnest Money of Rs. 5,700 should be paid in advance to the Chief Cashier, Southern Railway, Madras, or to the Divisional Accounts Officer, Trichinopoly, and the receipt issued by him should be attached to the tender. No Demand Draft or Cheque, etc., should be attached to the tender.
8. The Earnest Money will not be accepted after 15-00 hours on Wednesday, the 30th January 1957.
9. The tenders will be opened at 12-00 hours on Wednesday, the 6th February 1957 in the Chief Engineer's Office at Madras.
10. The Chief Engineer reserves to himself the right to reject, without assigning reasons, any or every tender or part thereof and does not bind himself to accept the lowest or any tender or part thereof.

THE SECOND BABY

V. S. SHANTHALAKSHMI

WHEN you already have one child, many of the preparations for a new baby will not worry or puzzle you. You are no longer timid about caring for a tiny infant. You are not bothered with what to do for the baby and what not to do and things like that. But you are bound to find, perhaps to your surprise, that you face certain new problems. To gently curb the sibling jealousies of the former only child who is confronted with a rival, and handling all his behaviour problems is no easy joke. To introduce the new baby into the household with a minimum of conflict and heartache on the part of the first-born is quite an art, and not an easy one at that.

The news that a new-comer is likely in the family should be sprung on him without loving preparations. What is important is that he should know long enough in advance to live with the idea, and that he be made to feel part and parcel of the welcoming committee. You must make him proud of the fact that he would be a "Big brother or sister" soon. As to the inevitable question of where babies come from, a little child should know that the baby is growing in a special place in Mother's body, and that Daddy helped it start to grow. In their zeal to be frank and modern, some parents take this opportunity to reveal all the facts of life. A little information at a time, given in a matter-of-fact manner, is what the child wants.

Include him as much as possible in the planning, so that he will feel he owns a share in the baby when it appears on the scene. He will love to help to get the new things for the baby. By asking for his co-operation you do all you can to keep him from feeling left out. Show him the little shirts and diaphers, the quilt and blankets, the towels and other baby things as you buy them. If some of these are hold-overs from his own infancy, be sure to tell him this. Let him help you arrange the baby's room or corner. If he is to be moved into a new bed or a new room, do this some time in advance of the great event, so your little first one won't have a strange unhappy feeling that the baby has taken his place.

Your present child will be much more receptive to the new baby if you refer to "our" baby rather than "my" baby. Always include him. See if you can find pictures of new born babies so that your child will know what to expect. He is probably picturing in his mind a pretty, roly-poly playmate of about his own age. When a child is unprepared for the reddish, helpless mite a new baby actually is, he is often shocked and repelled when he sees his baby brother or sister for the first time. So show him with your hands how small the new baby will be. Tell him that new babies can't walk or talk at first—they can only cry; that they don't eat the things he does only but drink milk, just as he did. Make him understand that

it will be quite a while before the baby will be old enough to play with him. Let him look forward to ways he will be able to help when the new baby comes, bringing diapers when the baby needs one, washing the baby's feet very carefully when his mother gives it a bath, helping you to push the carriage when he and you and the baby all go out for a walk.

No matter how well the initial meeting goes off, the first youngster may show signs of being jealous of the baby after a time. But if you are prepared for this and make an effort to understand why the jealousy exists, you will be able to handle it if or when it appears.

The reason is very clear. Junior has been the only child and has had a monopoly on his parents' affections. Now he sees his father and mother infatuated with a stupid, messy baby, and it is not strange that he should feel to some degree lost and abandoned. He feels that some of the love which was his has now been transferred to the baby. He can't see that his parents love him as much as they ever did and that their love for the baby is a separate thing. As a matter of fact, you will notice that many adults who are not parents share this belief. You will be asked many times if you don't find it difficult to pretend to love each child the same. If intelligent adults, who are impersonal about the situation in your home, can't be convinced of the truth, you can see how your older child is affected, since he is actually involved.

Therefore, it is important that you reassure him and help him to realize

there is love enough for both him and the baby. Let him see your pride in him. Let him know that you enjoy talking to him and playing with him. For the first few months after the baby is born, give the elder an extra amount of time and affection. It is an excellent idea to plan in advance for something happy to happen for the older child to mark the day of the new baby's arrival. With all the gifts and excitement centering around the newcomer, be sure there is a gift for the older child to celebrate his becoming a big brother or sister. Plan so he will be the one to spread the glad tidings of the baby's arrival by telephone and personal calls, to Grandmother, to neighbours and friends.

The very best gift to celebrate a new baby's arrival is a baby doll as much like the new baby as possible. This present is just as good for a boy up to kindergarten age as for a girl. If you can manage it, a crib and a few linen items might also be included, so that big brother or sister can care for his baby while Mother is taking care of the real baby.

Perhaps you have handled the situation smoothly, but are worried about the effect visitors will have when they go into rhapsodies over the baby. You can always request your visitors to please pay some attention to the older child. There may be a few undiscerning visitors who will tease Junior about his mother's having a new baby to love instead of him. Just draw your elder into your arms and say with warmth (for him) and dignity (for the offender) that Junior is your baby too, and you will always love him with all your heart.

If your first child is over three, you might consider starting him in nursery school some months before the baby's arrival. Nursery school doesn't always work out successfully for young children, but it will be a great help if your child adjusts happily, for nursery school will give him an outside interest to help tide him over the days when you are away from home. He will also feel less threatened by the new baby if school has become a happy part of his life.

This may surprise you, but your problem will be simpler if Junior expresses a dislike for the baby. Instead of scolding him, be relieved that his feelings have come out into the open where you can deal with them. Explain that the baby is part of the family, just as he is. Tell Junior that the baby will become more interesting and fun as he grows older. Right now he may not seem to have much to recommend him, but Junior was once like that and look at what a fine boy he is now. Of course

impulse when Junior tries to strike or pinch the baby will be to punish him. Instead, be understanding. Don't take it for granted that the child was trying to hurt the baby. Show him how to pat the baby gently, praise him when he does it correctly, and hold him on your lap for a while so that he won't feel jealous and want to hurt the baby, if that was his intention. To give the child a doll, a wooden mallet, and a block to pound, which might serve as substitutes upon which he can vent his wrath is an excellent idea.

Don't be sparing in praise. Go out of your way to notice and comment on Junior's desirable actions, especially any kindnesses he shows to the baby. Of course Junior will take his own time to adjust himself to the idea of sharing everything that belonged to him only once with another soul. But once he gets used to the idea, there will be peace and happiness in the house again.

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DA 56/51

CHILDREN'S CORNER

"Animals are good Craftsmen."

WHILE in school one day you are being given a lesson in geometry. The master tells you to draw a hexagon. What do you do? First you think of a hexagon. A figure with six sides, but all sides to be of equal length. Now, to help you draw this hexagon in your exercise book you must use a ruler, a pencil, a pair of compasses, and perhaps even a protractor. Thinking it over, we find that we must use a number of instruments to draw a figure with six sides on a piece of paper.

So much for the little lesson in geometry. Now, we get over to nature study. You, and the rest of the class, are shown part of a bee-hive. If you take a good look you will be amazed to see that each cell of the hive is a perfect little hexagon. Who designed and made this tiny geometrical cell, and the hundreds more like it, that can be seen in a large hive? Well, this amazing piece of work was done by what are known as the "worker" bees. And yet—and this is the wonderful part of it—none of the worker bees used a ruler, or pencil, or compasses, or a plan on a piece of paper, and took no measurements. If you measured each cell you would find that the measurements were amazingly exact as if ruler and other geometrical instruments had been used by those clever little worker bees.

What do we learn from this little object lesson? We learn that it is not only human beings who are good craftsmen, but that the insects, the birds and the animals are in some cases far better craftsmen. Let us

look over a few of the wonderful things these creatures can do better than man.

As we have just read, the bees make wonderful hives, which are the tiny cells in which the queen bee will lay her eggs. Hundreds and hundreds of these perfect little cells are made to form each hive, and entirely without any kind of tool or instrument other than the parts of the worker bee's body.

There is a wasp known as the "Social" wasp. These fellows make their homes out of a kind of paper made from wood-pulp. They have no wonderful machinery to cut the wood and squeeze it into pulp like men have in their huge paper mills. Then there is another bee, known as the leaf-cutter, who cushions his tiny home with rose-leaves. How does he do it? He finds a piece of decayed wood, into which he bore a tunnel. Then off he goes to the nearest rose-bush and cuts out tiny bits of rose-leaves into perfect ovals or circles. He then folds these exactly in half and flies back to his tunnel. Each tiny bit is glued to the wall of the tunnel until the whole tunnel is lined and cushioned with soft and sweet-smelling bits of rose-leaf.

Next, we take a look at another wonder-worker—the spider. He can spin two kinds of silk, one for his web and the other for the cocoon. Each kind of silk he makes is for a special purpose. These silky webs are used as traps for flies and other insects who come passing by. Phut! a fly hits the web and is trapped. The more he struggles to get away, the more he gets glued up with the sticky, but fine tough

silk strands of the web. Before long he is so tired that he cannot even move. Down comes Mr. Fat Spider and gobbles up the nice, juicy fly. Mr. Spider does not need a silk weaving mill with hundreds of machines to make his lovely silk threads. All the machines he needs are inside his own little body.

The ant is another skilled craftsman. He is also a silk spinner, weaving while in the grub stage, those little cocoons known as "ants eggs," which also make tasty food for your little pet goldfish if you have any. The ant is also a farmer at times and manures his own fields, then harvests his seeds, and lays them by in storage for the winter. Some ants even grow their own "ant-rice." And some even have their own little gardens which they lay out in tiny designs. Yet all this wonderful work is done without a single tool.

Next, we take a look at what birds can do. Perhaps they are far ahead of all other animals in building of nests. There is the weaver bird, who likes to live in a sort of village with other weaver birds. These birds get together and build a common nest, usually under one roof, where you will find as many as three hundred weaver bird families. The nest is built of bushman grass and looks like a bunch of matted hay hanging from the roof. Then there is the tailor bird, who makes a nest of stitched leaves on to a low shrub or plant. Many kinds of birds build hanging nests of various sizes and shapes—like pears, bottles and so on. And yet, all this wonderful work is done by these clever little birds without needles, thread, cloth, scissors or tape measures.

What about the animals? Perhaps, the most wonderful of these is the beaver. This is a small animal of the rat family and found mostly in Europe, Northern Asia and America. The beaver can build a complete dam right across a stream. How does he do it. He uses timber, branches of trees, mud and stones. Some of the dams built by beavers are as much as five hundred feet long, and even more, twelve to thirteen feet high, and about twenty feet in thickness. The thickness is about twenty feet at the bottom and tapers to about three feet at the top. And mind you, these are real dams and can stand up to a fast-moving stream and keep the water in check.

In Canada, the beavers knock down large trees to help to get wood for their dams. They start gnawing with their sharp teeth on a tree from about a foot above the ground, and keep on biting deep into the wood until down comes the tree with a terrific crash. When man wants to build a dam across a river or stream, he has to employ a skilled engineer, plenty of men and all kinds of machinery and tools. But Mr. Beaver and his fellow-beavers use whatever they find at hand of trees, wood, mud and stones, and their only tools are their sharp teeth and claws, to build their amazing dams.

There are other kinds of animals who live as much under the earth as on it. When they go underground it is usually to hide or have their homes, where the mothers have their babies and take care of them. These are the animals who are expert in digging tunnels, such as the fox, the jackal, the badger and the mole.

Their only tools are always carried about with them, that is their claws and their snouts and their legs. But with these they can dig out quite a lot of earth.

Before you and I can do even some of the things the insects, the birds and the animals can do, we must be trained and taught to do it. And this training takes quite a long time. Then again, we must have the proper tools, the measuring instruments, and

so many other things. But not so these other little creatures. They are hardly grown up, when they can straightaway make their own little cells, spin their silk, stitch their nests, build their dams or bore their tunnel-homes and hide-outs.

When we think on these things all we can do is wonder and feel thankful for God's little creatures.

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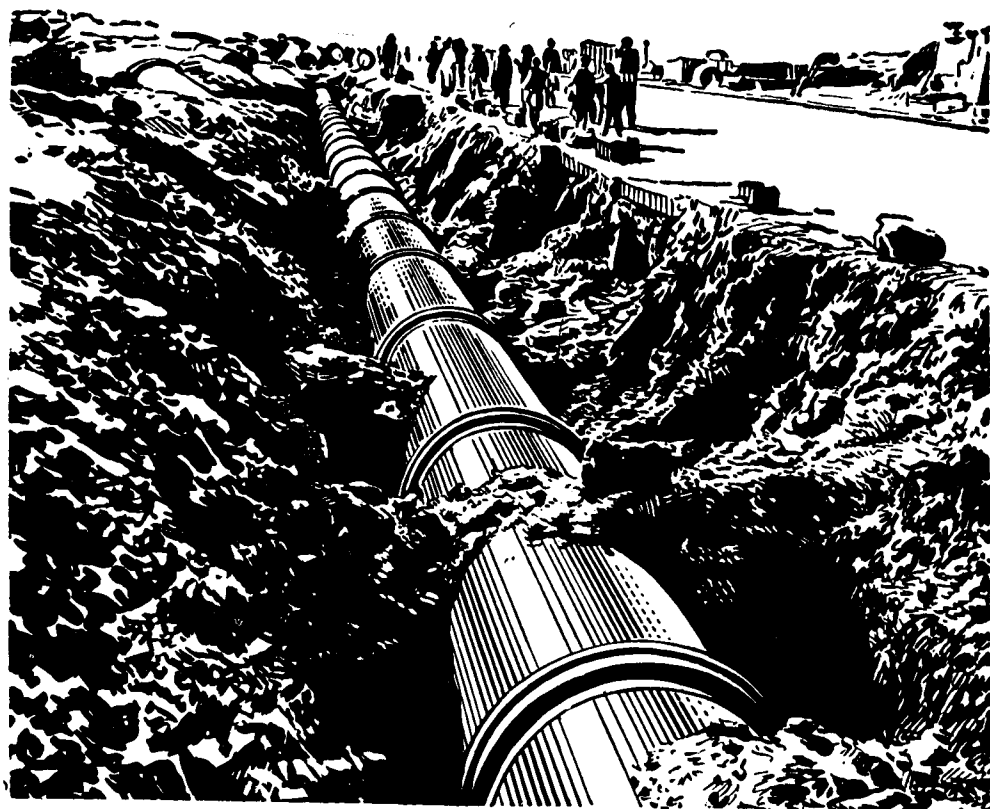
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WALTER De La Mare's "Arabia" is a brilliant representation of how the highest poetry and thoughts could be produced in the contemplation of places unvisited. The "shades" of Arabia, the "verdurous vales and thickets", the flowers that "toss into blossom against the phantom stars"—all these are things that do not at all exist in Arabia. Even though I too have not visited Arabia, I am so sure about my conclusion because to my mind Arabia is nothing but sand, sand, and sand. I think geography will be in my favour, even though my thoughts about Arabia are not merely geographical.

It is a subtle piece of humour charged with the fervour of literary beauty that La Mare was haunted by the lutes and forests of Arabia.

Places unvisited have as much of a grandiose air to a literary mind as is a subtle bend of a *Raga* unsung to a musical entrepreneur.

I was once a regular picture-goer and did not miss one English film that had the imprint of a classic about it. I remember to have seen a film, the theme of which was laid in a Scottish village and, after nearly thirteen years, I remember so vividly the nature of the land and the eighteenth century

architecture of the buildings. Scotland, as you all know, is a hilly country, but there were no hills shown in the film. From that day whenever I see the name of Scotland anywhere, the hills and the vales do not enter into my imagination but only the buildings that I saw in the film. That is the magic of association of ideas formed by the mind.

A place unvisited, when it is valued as the very Heaven in which you would long to live, enters into regions of sublimity, rising high from the mundane aspects of an ordinary habitat of human beings. It seems it belongs to God and not to man. Your imagination about living in the place does not permit of any company to worry you and wobble. There you wish to live all alone, nothing disturbing you.

On many nights during the summer season when I have the habit of lying in the open, I have had occasions to look at the blue firmament with its myriad stars, alternately hid by clusters of white clouds and have imagined that the very sea had been transported on top of me and I would verily wish to plunge and swim in the still waters represented by the blue deep. Of course the skies are a place which could be seen but not visited!





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SOUTHERN RAILWAY

TENDER NOTICE

Tender No. S/236/I/EB2/174/PWP/2.

Sealed tenders are invited for the supply of 4,200 Nos. Cast Iron Push Coaks to drawing No. 2 CE10, to the District Controller of Stores, Mechanical, Perambur Works, Madras State, and will be received by the Controller of Stores, Southern Railway, Ayanavaram P.O., Madras 23, before 12-00 noon on 24-1-1957.

The prescribed form is obtainable on payment of Rs. 5 per copy in cash or by M.O. and by any other means will not be accepted.

Tender forms will not be issued after 12-00 hours on 22-1-1957.

P. N. TALATI,
Controller of Stores.

NOTES ON CURRENT RAILWAY TOPICS

(Contributed)

Literacy

THE problem of literacy among adult employees, one of the main obstacles to industrial development in India, is also being faced by the Railway Board, which in 1951 instituted a three-year-campaign, in which it was laid down *inter alia* that one hour each weekday for holding classes should be found outside working hours, and that textbooks, charts, and class-room materials should be supplied free by the railways in certain cases. The campaign was extended in 1954 for a further three years. To restrict the number of illiterate staff the Board has further decided that no illiterate may be employed in any post, temporary or permanent. This has given an impetus to the literacy drive, and it is hoped that illiteracy on the railways will be eradicated in the not very distant future.

Education

The seven State railways in the Republic of India and installations such as the Chittaranjan Locomotive Works are running 156 schools directly and aiding many more. More than

Rs. 1,10,00,000 has been allotted for education of all kinds during 1956-57, and expenditure of Rs. 3,60,000 proposed for the current year for building new or improving existing schools.

The Railway Board has made a survey of areas where there are still some railway colonies without proper educational facilities, and is pressing the respective State Governments to start schools in these colonies. In cases where the State Governments are unable to open schools, the railway managements may open their own schools with suitable grants-in-aid from State Governments. A proposal is, at present, under consideration for awarding about 1,000 bursaries varying from Rs. 15 to Rs. 50 a month in deserving cases to children of lower-paid employees.

In addition, the railway administration gives a partial tuition and maintenance bursaries to such children of class III employees, for whom no facilities exist at their places of residence. It has also been decided to start subsidised hostels for such children (including those of Class IV staff).



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SOUTHERN RAILWAY

TENDER NOTICE

Quilich-Ennakulam Railway Construction—Section II—Kottayam towards Mavelikara—Construction of Gate Lodges as per Plan No. 7291-A

The Engineer-in-Chief, Southern Railway, Egmore, Madras-8, invites sealed tenders for the above work upto 12-00 hours on Tuesday, the 29th January 1957.

Tenders should be submitted in the prescribed forms obtainable from the Office of the Engineer-in-Chief, Southern Railway, Egmore, Madras-8 or from the Executive Engineer's Office, Quilich-Ennakulam Railway Construction, Ennakulam South on production of a receipt for the sum of Rs. 10 (Rupees Ten only) paid to the Chief Cashier, Southern Railway, Madras-3 or the Station Master, Ennakulam South or Quilich towards the cost of each tender form. In no circumstances will the cost of tender forms be refunded. Tender forms are not transferable.

Tender forms will be issued upto 12-00 hours on Friday, the 25th January 1957.

Earnest money Rs. 900 should be paid in advance to the Chief Cashier, Southern Railway, Madras-3 not later than 12-00 hours on 25th January 1957 and the receipt submitted along with the tender. No cheque or demand draft should be attached to the tender.

Tenderers are required to submit Income-tax Clearance Certificate, in original, along with the tender. If previously sent and is current, reference to the particular tender with which it was sent should be furnished.

Earnest money is fixed at 5% of the value of the contract and the successful tenderer will be required to furnish 10% of the value as per his accepted tender towards security deposit.

Tenders will be opened at 12-00 hours on Wednesday, the 30th January 1957 at the Office of the Engineer-in-Chief, Egmore, Madras-8.

The Engineer-in-Chief reserves to himself the right to reject without assigning reasons, any or every tender or part thereof and does not bind himself to accept the lowest or any tender or part thereof.

BLOOD IN STONE!

P. G. Sreenivasa Rao, B.A., L.T.

A rare gem in South Indian stone sculpture of the Nayak Period lies hidden in the isolated and humble looking temple at Krishnapuram, a dreary village in the midst of a palmyra grove, about six miles from the town of Tinnevely.

In one of the 'Ranga Mandapam' pillars the ingenious sculptor has cleverly made use of a chance red patch in the strata of the granite-gneiss, to locate and depict, the gushing of blood from a stab-wound, inflicted by a pursuing horseman, in the body of a stalwart hunter, who was abducting and carrying away a beautiful maiden, perched on his shoulders, seen with her veil flying over her head like a canopy. Her despondent mother at home is consulting a palmist about the chances of rescuing her daughter.

The Raja Narthaki or the Court Dancer gracefully adorns the next pillar with her delicate and stately figure, holding a flower in her right hand and balancing a pomegranate in the open palm of the other, while swiftly going through the rhythmic movements of the dance. The flowing garments and the jewellery in relief, add lively charm to her smiling face.

Clustered round the pillars of the 'Ranga Mandapam' are a number of finely executed figures, singly and in lively groups in dramatic settings, which with the clever attitudes and the accuracy of detail combine to produce a most effective triumph of art in representing interesting scenes in the social life of the people.

It can be gathered from the copper plates of the period that this temple dedicated to Sri Venkateswara was built by Krishnappa Nayakkan

The Raja Narthaki



of Madura (A. D. 1563—1573) who constructed around the temple a big wall surmounted by a broad and lofty tower with an imposing gateway. But no trace of these is seen now. It is believed that the wall was demolished and the stones taken away for the construction of the Palamcottah Fort. He presented the temple with a huge chariot and laid out broad streets in the village for the deity to be taken out in procession on festive occasions.

The tradition of the palmy days of Krishnapuram to account for its choice for building a great temple over an old and humbler shrine can be

gleaned from the Madura 'Puras'. This is confirmed by the existence of abandoned wells and foundations of houses in the neighbourhood suggesting that the village was once important and populous and attracted many persons from outlying and distant places to gather in large numbers to worship the deity.

The elementary school for the children of the village is accommodated in an outer hall of the temple. Barring the presence of the priest during the 'pooja' hours the place is deserted and the visitor can have free access to any part of it to study the sculptures in detail.

RAILWAY SIGNALLING PRACTICES

(I)

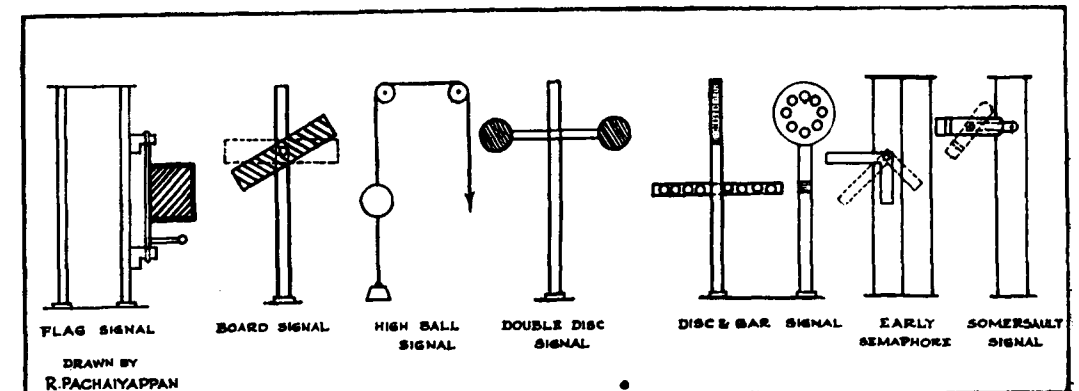
T. S. PARTHASARATHY

Deputy Chief Operating Supdt. (Coaching)

Historical

THE fundamental purpose of a signal is to convey a message to the driver. The semaphore signal, familiar on nearly every railway, is in effect a 'telegraph'. It conveys, by its position, messages and instructions to engine-men, thus serving the same purpose as the old semaphore telegraphs used before the days of electricity for sending messages from hill to hill and so on, for hundreds of miles across country.

if turned endwise, to be more or less out of sight, the signal was "clear". Another type had a big disc with openings and according to their position, a different meaning applied. The disc and cross-bar signals were, however, most generally employed. One of each was fitted at right angles, so that when the disc showed broadside and the cross-bar was seen endways, the indication was "clear"; the cross-bar showing and the disc endwise meant "danger". Lamps moved with these to show red or green (or white)



Early Signals.

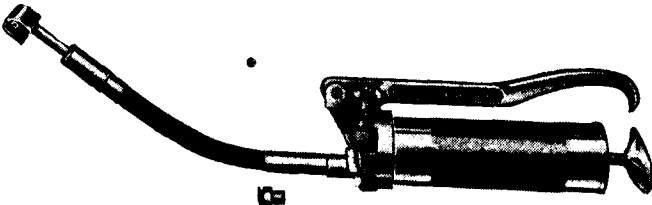
But the railways did not begin with the semaphore. Flags and lamps shown by "policemen" in top hats were the signals and signalmen of early days, and later all sorts of queer contraptions were used, some of which are still employed, though in improved forms, in many countries. The illustrations appearing in this article show several examples of these. There were various shapes of boards; if they showed broadside, the driver interpreted it as indicating "danger";

according to the way the signal was turned.

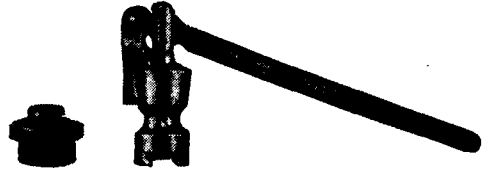
Most of these signals were worked independently and the "policemen" had to go each to operate it. The approach was rather negative as the object was always to 'stop' a train from coming in. Usually trains ran on the "time interval" method. If a train had been gone ten minutes, the driver of the next train was warned to proceed carefully; if longer, he was

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told he could expect a clear run. Balls and baskets raised on poles were other devices used and arrow signals sometimes showed, by the way they pointed, the direction for which the lines were set at junctions.

The first semaphore signal was, naturally enough, introduced in Great Britain and for some time signals had three positions—horizontal meant “stop”, inclined downwards indicated “caution” and dropped right down so that the arm disappeared into a slot in the post and was out of sight showed “clear”. A red light was used for stop, green for caution and white for clear. Hence the rhyme:

“White is right;
Red is wrong;
Green is gently go along.”

Signals were still worked independently, but here and there several were grouped together and the ‘policeman’, as he was called for several years, had a little hut on top of which the signals were placed. This was the origin of what are now called “cabins” or “signal boxes”. But the grouping of signals suggested that they might be fitted with mechanism so that a signal could not be lowered if one which conflicted with it was off. This brought the first interlocking into existence so that incorrect signals could not be given and signals could only be lowered if the points were properly set.

All this may sound crude and primitive nowadays, but it must be remembered that trains were not frequent and a policeman had to depend very much upon his knowledge of the

SOUTHERN RAILWAY TENDER NOTICE

1. The Chief Engineer, Southern Railway, Madras invites Sealed Percentage Tenders for “Works in connection with Dronachilam—Remodelling of Yard” to reach him not later than 12-00 hours on Tuesday the 5th February 1957.
2. The tender should be submitted in the prescribed form obtainable from the Chief Engineer's Office on production of a receipt for the sum of Rs. 10 paid to the Chief Cashier, Southern Railway, Madras-3 or the Divisional Accounts Officer, Mysore or any Station Master on the Southern Railway towards the cost of the tender form. In no circumstances, will the amount paid for the tender form be refunded.
3. The Tender Form is not transferable.
4. The Tenderer should submit along with the tender the Income-tax Clearance certificate in original or an authorised copy or if he has no taxable income a sworn affidavit duly countersigned by the Income-tax Officer to that effect.
5. The tender forms will not be issued after 15-00 hours on Tuesday the 29th January 1957.
6. The total approximate value of the contract is Rs. 2,71,300.
7. An Earnest Money of Rs. 13,600 should be paid in advance to the Chief Cashier, Southern Railway, Madras or to the Divisional Accounts Officer, Mysore and the receipt issued by him should be attached to the tender. Demand Drafts, Cheques, etc., should not be attached to the tender.
8. The Earnest Money will not be accepted after 15-00 hours on Wednesday the 30th January 1957.
9. The tenders will be opened at 12-00 hours on Wednesday the 6th February 1957 in the Chief Engineer's Office at Madras.
10. The Chief Engineer reserves to himself the right to reject, without assigning reasons, any or every tender or part thereof and does not bind himself to accept the lowest or any tender or part thereof.

trains and his common-sense, while drivers had to be always on the lookout for possible danger. Moreover, there was no electric telegraph for sending messages.

Principles of Signalling

Safety was undoubtedly the original purpose for which signals were installed and the fundamental principles were centred around this original purpose, although in actual application it is impracticable to separate the principles pertaining to safety from those pertaining to facility of train movement and since they are so inter-related, they will be stated below without regard to either safety of train movement or the facilitation thereof.

The principles given below are fundamentals of fixed signalling regardless of whether they be of the semaphore, colour light, position light and colour-position-light type.

Modern signalling is developed from three fundamental indications:

- (1) Stop.
- (2) Caution.
- (3) Proceed.

The principles behind the design, construction and installation of signals and of train operation are as follows:—

Reliability.—This requirement is given priority over all other factors so that safety and facility of train may be obtained.

Uniformity.—To avoid confusion in the driver's mind and possible delay to trains, uniformity in aspects and indication is necessary.

Expansive Capabilities.—Light traffic and simplicity in track layout requires a less elaborate signal system than does heavy traffic and more compli-

cated track layouts; however, the signalling for the light traffic or simple track layout should, for economic reasons, be capable of expansion to provide for increasing traffic to the ultimate capacity of the railway.

Simplicity.—Consistent with requirements, simplicity is an important factor in the design and construction of a signal system.

Distinctiveness.—Signal systems being of different kinds the signals used in each system should be distinctive either in design or marking so that they can be readily classified.

Limitation.—By limitation is meant the restriction imposed by the indication given by the signal such as stop at next signal, pass next signal at restricted speed, proceed at slow speed, etc. Limitation as transmitted by the signal indications should be readily understandable for safe movement of trains.

Signals are an insurance against accidents and the money spent on providing them should be treated as the premium. It is the duty of railways to take their patrons safely to their destinations and signals ensure this. Leaving apart this aspect, signalling gives speed of movement and greater operating capacity. They might have been originally put in to stop trains but the present accent is on their keeping trains moving. A great majority of accidents is due to the failure of the human element and the introduction of signalling reduces this to a minimum. The main principle is that when a signal is given

- (a) the section in advance is clear,
- (b) the road is held in position, and
- (c) no fouling movements take place.

The instrument should show a danger signal if anything goes wrong and a driver should have sufficient time to pull up a train if the next signal is at danger. No signalling system should be treated as infallible but all the essentials must be embodied in it. There should be track circuiting if possible or its equivalent and if not, control must be exercised through fixed signals. Track circuiting marks the most important stage in the development of signalling in block systems. The following are some of the trends of modern railway signalling based on continuous track circuiting.

(1) Closing of unnecessary signal cabins.

(2) Extending the sphere of control of signal boxes.

A, B, C = Early forms of signals.

D = Ordinary semaphore.

E = Ordinary Warner arm.

F = Somersault signal.

G = Warner with fish-tail reflector on lamp.

(3) Dispensing with lock bars.

(4) Introduction of power signalling at busy locations.

(5) Introduction of automatic signalling on single and double lines.

(6) Absolute-permissive block working.

(7) Centralized Traffic Control.

(8) Automatic Train Control.

Types and Aspects of Signals

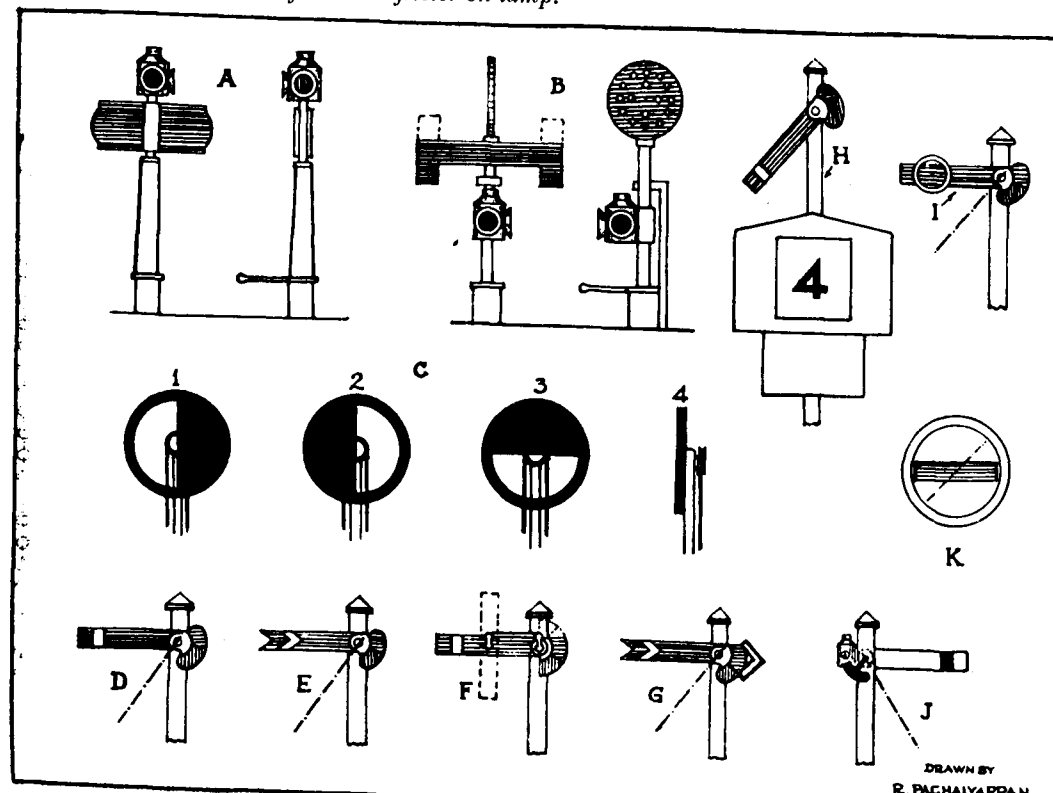
The two-position semaphore is still perhaps the most widely used signal in the world. In U.S.A., the early employment of electric motor operation enabled them to make wide use of the three-position semaphore (mechanical operation of this type involves accurate positioning of the arm). The general

H = Route indicating signal

I = Slow line signal.

J = Back view of signal.

K = Banner signal.



DRAWN BY
R. PACHAIYAPPAN

tendency throughout the world now is to adopt the light type signal whenever power operation is available, so obtaining the advantage of consistent day and night indication, fog penetrating power and simplicity of construction and maintenance. The light type signal is employed in two basic forms, i.e., colour light and position light. The former is almost universal for running signals and the latter is increasingly being used for shunt signals (thus avoiding incidentally the possibility of conflict between the two types). Colour light signals use red, yellow and green lights in various combinations to convey the required information. Position light signals for shunting have two lunar white lamps disposed horizontally (stop), 45° from horizontal (clear, caution) and vertical (clear). In some

countries, one lunar white and one red lamp are used for the stop aspect.

In a three-position signal, the aspects should be clear and the margin of error as low as possible. In a lower-quadrant two-position signal, even a drooping signal at an angle of 60° will give a 'clear' indication.

In a two-aspect territory, the driver almost feels his way through from signal to signal and is constantly kept guessing about the indication of the next signal. In a multi-aspect territory, he gets, at every signal, an indication of the position of the signal in advance. Red is preceded by yellow and there is sufficient braking distance before a danger signal. Two yellow lights give a less restrictive indication than one yellow light because if one of the lights goes out, a more restrictive

SOUTHERN RAILWAY TENDER NOTICE

1. The Divisional Superintendent, Southern Railway, Hubli, invites sealed percentage tenders for the work of "Belgaum—Proposed flushout arrangements for latrines and remodelling of station building", Hubli Division, upto 12-00 hours on Monday, the 28th January 1957.

2. The tender should be submitted in the prescribed form obtainable from the Divisional Engineer's Office, Southern Railway, Hubli on production of a receipt for a sum of Rs. 10 paid to the Chief Cashier, Southern Railway, Madras, or Divisional Accounts Officer, Mysore, or any Station Master on the Southern Railway, towards the cost of the tender form. In no circumstances will the amount paid for the tender form be refunded.

3. The tender form is not transferable.

4. The tenderer should submit along with the tender the Income-Tax Clearance Certificate in original or an authorised copy if he has no taxable income, a sworn affidavit duly countersigned by the Income-Tax Officer to that effect.

5. The tender forms will not be issued after 15-00 hours on Monday, the 21st January 1957.

6. The total approximate value of this contract is Rs. 64,000.

7. Earnest Money of Rs. 3,200 should be paid in advance to the Chief Cashier, Southern Railway, Madras, or Divisional Accounts Officer, Mysore, and the receipt issued by him should be attached to the tender. No Demand Draft or Cheque is to be attached to the tender.

8. The Earnest Money will not be accepted after 15-00 hours on Tuesday, the 22nd January 1957.

9. The tenders will be opened at 12-00 hours on Tuesday, the 29th January 1957 in the Divisional Engineer's Office, at Hubli.

10. The Divisional Superintendent reserves to himself the right to reject without assigning reasons, any or every tender or part thereof and does not bind himself to accept the lowest or any tender or part thereof.

aspect should be presented. There is divergence of opinion regarding yellow always preceding red but it is really a sound principle.

The attention aspect tells the driver to reduce speed and look out for the indication of the next signal. This gives a closer headway on sections where traffic is dense.

The inherent defect of a semaphore signal is its inconsistency of indication, i.e., a signal arm by day and a light by night. In colour light signalling, this is overcome to a considerable extent as we have only lights both day and night.

Colour Light Signalling

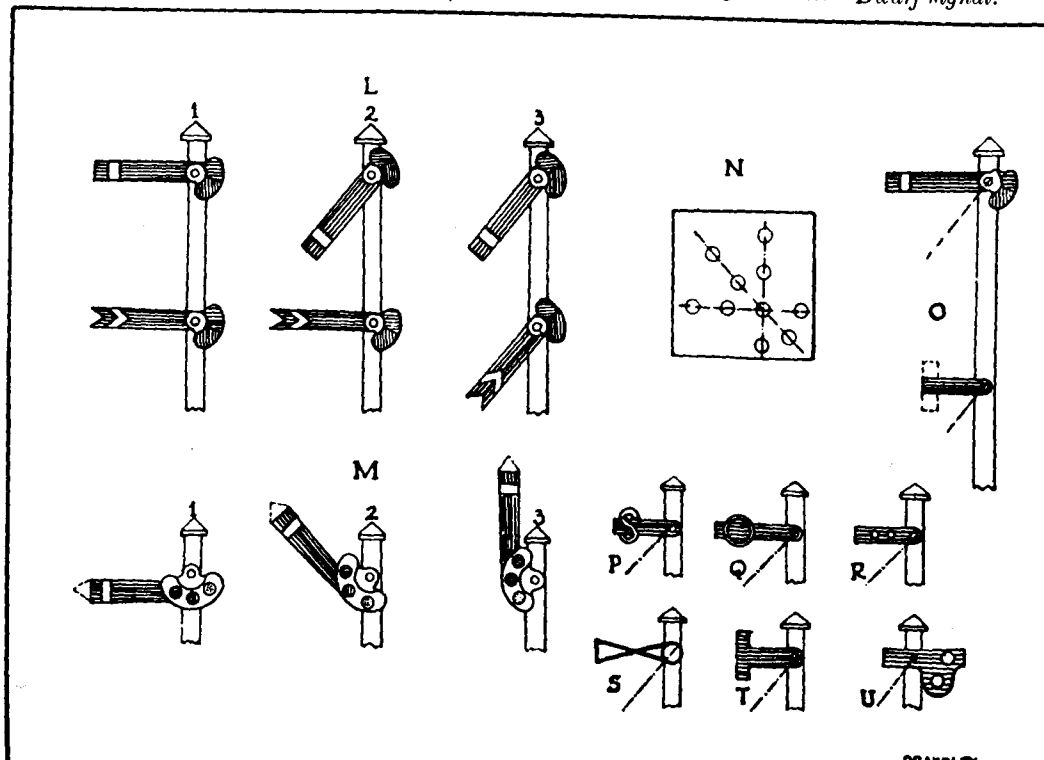
The semaphore signal has served its purpose well, but it has its limitations due to height, length of arms and moving parts. Its practical use was

further complicated in that two entirely different aspects were used, one by day and the other by night. An effort was made to devise some arrangement whereby the same aspects could be displayed both day and night. Originally this effort was along the lines of illuminating the semaphore arm to make it visible at night rather than make the coloured lights visible during the day, due chiefly to the limitations of oil lamps.

With improved methods of producing electric lamps, renewed efforts were made to solve the matter of uniform day and night signalling. The light signal was developed in 1904 and was arranged to display indication equivalent to those given by the semaphore signal at night, but as there was no moving arm to change the colour of the roundel in front of the light, it

L = Combination of Outer and Warner.
M = Upper quadrant signals.
N = Light signal giving semaphore indications.

O = Calling-on arm.
P, Q, R, S, T = Shunt signal.
U = Dwarf signal.



was necessary to use individual lamps behind the proper coloured lens to give the various indications.

From the fact that light signals as originally developed required no moving parts other than the relays controlling the different lamps, it was soon recognized that there was a distinct advantage in their use over the semaphore signal, which on account of the large number of moving parts, required considerable labour and material to properly maintain them. It was also found that by using lamps of sufficient wattage, proper lenses, reflectors and backgrounds, light signals could also be used in daylight to display the same aspects by day and night.

The range and spread of light signals vary considerably with the type of lamp used. The more distributed the filament, the greater the spread and the shorter the range. The more concentrated the filament, the greater the range.

Colour Light Signals

As the name implies, colours only are used to give the different indications and these are similar to the corresponding night indication given by semaphore signals; that is red for Stop, yellow for Approach and green for Proceed, with sometimes an additional qualifying light to provide the desired indication.

To meet various requirements, there are a number of different types of colour light signals manufactured, which may be grouped into two classes, viz., long range and short range.

Long Range Signals

Long range signals are generally used where trains operate at high

speeds and it is desirable to observe the indication as far from the signal as possible. The aspect of long range signals can be seen from a distance of 2,500 to 5,000 feet in daylight. This long range is obtained by the use of optically efficient lenses and reflectors and by accurate location of the lamp filament at the focal point of the optical system. Maximum efficiency is secured by the use of lamps having accurately located concentrated filaments, by the use of suitable backgrounds and hoods and by careful alignment of the projected beam.

Close-up indication for long range signals is provided through the use of deflecting prisms and where signals are located facing a curve, an outer roundel is added in front of the existing outer to spread or deflect the beam as desired.

Short Range Signals

The aspect of short range signals can be seen from a distance of 1,200 feet to 2,500 feet. They are generally used in tunnels, subways and for dwarf signals.

Searchlight Type

This differs from the units previously described in that all aspects are projected through one optical system. This is accomplished by means of a movable member of the unit, placing a small coloured disc or roundel of the desired colour on the optical centre line of the signal directly in front of the lamp so that all rays from the light source are projected through it.

Position Light Signals

For the purpose of eliminating the coloured lights for display of the
(Continued on page 76)

WHAT I SAW AT KIMBER GARDENS

C. V. GOPAUL

I have often heard of Kimber Gardens and Kajamalai, but I had not had the opportunity of knowing what it was like actually. At last, an occasion arose when the good day dawned for me to be at that place. That was on the 1st September 1956, a very eventful day which revealed the patent as well as the latent talents of the personnel of the Railway Protection Force.

Marking as it does, the official opening of the Railway Protection Force Training School, 1st September 1956, is really a landmark in the history of the erstwhile Watch and Ward and the now existing Railway Protection Force of this Railway. As an office bird, I was able to leave for Kimber Gardens only on the previous day, i.e., 31st August 1956. The moment I reached Madras Egmore, there was a sort of jubilation overtaking me when I met officers of other Departments rushing up to their respective compartments to attend the inauguration function at Kimber Gardens. Right from that time onwards, the festive feeling was enjoyed and experienced by one and all. On arrival at Trichy it was really a sight to see every one rushing up to Kimber Gardens from 8 o'clock in the morning trying to give the final touch to the arrangements for the evening's function. The parade ground opposite to the Training Centre was gaily decorated and flags and festoons moving in the air looked like inviting everyone to spend a very enjoyable evening. The whole place was so busy with officials and staff not only of the Railway Protection Force, but

also of other Departments like the Signal and Tele-Communication, Electrical and Engineering, moving about briskly fixing microphones, adjusting lighting arrangements and attending to several other items of work.

The time was flying fast and people from all around Kimber Gardens started streaming towards the parade ground right from 3 p.m. onwards. By 5-15 p.m., the time fixed for the function, the long and gorgeously decorated pandal was packed to the full. It was a motley crowd of both men and women consisting of several high placed officials not only of the Railway, but also of the various other branches of the Central and Provincial Governments.

Just when the clock was indicating 5-10 p.m., all eyes were towards the entrance to the pandal anxiously looking for the Deputy Minister for Railways to arrive. Right to the time fixed, the Deputy Minister for Railways Sri O. V. Alagesan was led into the pandal and then to the parade ground by the Chief Security Officer. It was from this moment that the men of the Railway Protection Force began exhibiting their talents. The Ceremonial Parade taken by Sergeant Major, Sri Doraswamy Vedanayagam, who is our Inspector for the Armed Wing, was indeed a grand show. After the National Salute, Inspection of Parade, Ceremonial Drill and March Past, the Chief Security Officer read out an address bringing out the improvements effected in the protection of Railway property and the property

January 1957

WHAT I SAW AT KIMBER GARDENS

75

entrusted to the care of the Railway, which was appreciated by the Deputy Minister, who referred to the achievements of the Railway Protection Force in his interesting speech, quoting also figures to indicate the decrease in the amount of claims compensation paid by the Southern Railway. The Deputy Minister then declared open the Railway Protection Force Training School and then proceeded to inspect the School buildings and the barracks attached thereto.

As every one knows, the above items are more of a formal nature and it is only after the completion of those items and tea that the spectators were treated with a variety of very pleasing items by the men of the Railway Protection Force. I cannot recapitulate exactly the various items seriatim and I cannot also boast of my capacity to name them correctly. I can only quote what caught my eyes and made me feel overwhelmed with joy as a layman.

Among the items, the first of the best group was the Mass P. T. A group of young men all clad in white with red sashes round their girdle, emerged out from the foot of the hill like well-groomed circus horses, ran round the parade ground and formed lines of their own. Believe me when I say that there was very little to distinguish one from the other and one began to wonder as to how it was possible to find men of the same height and girth. Then started the band playing popular Hindi and Tamil film hits. Oh! what a joy it was to see the men lifting their legs, crossing their hands and clapping to the tune of the music, changing simultaneously

and dancing without making the spectators tired of the sight. In fact, they wanted more and more of these. But the anxiety and expectation to see something better still, prevented them from calling out 'once more'.

Suddenly, the lights were off and an invisible voice started describing the transfer of the control of the Fire Service Organisation to the Railway Protection Force and actually, there was a display of a fire being put out. Immediately after this exciting item, came another excellent one, in fact the most spectacular one of the evening. The lights were on and young men all clad again in white with red sashes round their girdle and coloured socks, came running one after another from the foot of the hill and formed two circles side by side, each circle consisting of 64 young men. They all squatted on the ground and off went the lights. In a few seconds, the lights were on and what we saw then, was really beyond any one's comprehension. There were two big lotus flowers, the white lotus, the sacred seat of Goddess Saraswathi. This made the spectators spell-bound and actually, before they could indicate their appreciation, the lights went out and again when the lights came on, there was a repetition of the performance in all its perfection, and it was really very good of the organisers to have thought of this item, white lotus formation, which meant a sort of prayer to the Goddess of Learning, as the function was connected with the opening of the Training Centre. When the lights were again off and when they were switched on, there was none to find on the ground. What happened to them is a mystery

to be solved by the readers of the "Southrailnews."

Then again, to the surprise of one and all, all the lights were switched off. There was a shadow of a person standing with a rifle in his hand at the hill top. Then came a commentary in a familiar voice describing the rigours of a lone sentry. I need not say who the author of this commentary is and I am sure it was not difficult for any one to make out that that was the very chief Security Officer of the Southern Railway. Really it was a picturesque and vivid description of the difficulties, the dangers and adventures a sentry experiences during his tour of duty. The appearance of an intruder, the fear of an approaching snake, the noise made by beasts and birds of the forest nearby, the sound of an approaching train indicating the hours for a sentry yet to be on duty, were all timed with exquisite perfection rendering the whole thing very natural without anything artificial. This one item really moved the hearts of the great gathering and each began to think "Does it mean so much for a sainik?"

Then came the items of torch light tattoo which illusioned the eyes of the spectators by the snake formation and what made it worse was the announcer warning the spectators to be careful

of snakes crawling below their feet.

The last item was fireworks and the function came to an end after the singing of the National Anthem. But to find a place like Kimber Gardens away from the busy haunts of men, crowded with people, all coming out with mirth in their hearts, searching for their friends, mothers searching for their children, etc., was indeed a pleasant surprise. The General Manager, the Inspector-General/Railway Protection Force, etc., who were watching the various items with keen interest began congratulating the Chief Security Officer for this great achievement of the Railway Protection Force. With their good wishes and blessings, the Railway Protection Force is sure to march from strength to strength and do its best in the discharge of its duties in safeguarding the national assets.

The Inspectors in charge of the Training Centre really deserve to be congratulated on this wonderful show put up by the Trainees. The impression created was so much that I am not ashamed to say that the film hits played were ringing in my ears all through that night with dreams of the sight seen in the evening. A thing of beauty is a joy for ever and it was really my life chance to have had the good fortune to witness such a beautiful show.

RAILWAY SIGNALLING PRACTICES

(Continued from page 73)

various signal indications and at the same time provide a similar aspect for day and night indications, the position light signal was developed.

The high signal consists of rows of three lamp units corresponding to the position occupied by the arms of semaphore signals.

Colour Position Light Signals

This type of signal is practically a combination of the two previous types in that colours as well as positions are utilised, except that two light units are used in a row.

(To be continued)

BOOK REVIEW

"OIL, LIFESTREAM OF PROGRESS"

(Published by the Caltex Group of Companies)

Perhaps the most striking thing about the oil industry is the lack of understanding in many quarters of the problems involved and their magnitude. It is striking because oil is the largest commodity moving in international trade and is fundamental to the machinery of development of every country on earth.

The October issue of the "Oil, Lifestream of Progress" with a very attractive multi-coloured front cover depicting the Olympic Games, contains apart from specialised articles whose appeal will be only for those in the profession, contributions that will interest each and every one. Particular mention can be made to the articles on "The Olympic Games" and "Profile of Greece," which are quite informative.

The article "International Purchasing" which deals with the economic significance of the Caltex Group of Companies in the Oil Lifestream of the world is very interesting. In the past year the Caltex Group of Companies purchased goods which cost 68,000,000 sterlings. This is roughly the equivalent of spending 8,000 sterlings per hour, or more than 100 sterlings every minute throughout twelve months. The great portion of this sum—55,000,000 sterlings was spent in countries in which the Group operates. The money was expended to buy the everyday necessities of running an internationally integrated group of business—food, housing, pipelines, steel for refinery building, mouse-

traps, office equipment, and a few thousand similar things. A staff of experts did the spending. These facts and figures have a special importance in these days when we are reading so much about the opposing economic forces of communism and capitalism. The importance is this: Through the fact of having to fill its routine business requirements, Caltex has pumped millions of dollars into the economic lifestream of the countries in which the Group does business.

"From Refinery to Customer" is an interesting article. The journey that oil must make, after it is taken from the ground and before it reaches the consumer, is a long one. Many things are done to it to change its nature, many vehicles carry it from stage, to stage many hands are employed in these tasks of speeding it on its way to final destination and ultimate use. One of the most often repeated phases of this lengthy chain of controlled circumstances, the arrival in port of a tanker laden with liquid power, takes on added significance when the area for which its cargo is intended is a fast-developing balance of bustling industry and mechanized farming. Cape Town, capital of South Africa, and the region surrounding it, fill these specifications neatly. These facts are well explained by excellent photos which tell the story of how the well oiled gears behind storage and distribution facilities swing into action when a Caltex tanker ties up in spacious Table Bay—how the product is offloaded, where it goes, how it gets there, and who uses it for what purposes. It is not a unique story for it can be at almost any hour of the day in one or more of the many countries which Caltex

serves. And that is probably the basic reason why it is such an important story.

The article "Melbourne—The Olympic Games" is specially illuminating the Magazine. When an anonymous Australian runner, carrying a symbolic flaming torch, entered the Main Stadium of the Melbourne Cricket Ground at exactly 4-32 p.m. on November 22, the XVI Olympiad, and the first ever held south of the equator, began. Circling the cinder track, the runner held the torch aloft to salute the assembled throng, and then transferred the light to a metal cauldron wherein the Olympic Flames burned until the games were concluded on December 8. Like the games themselves, the flaming torch derives from far back in antiquity. It was ignited in the ancient sanctuary of the Olympian Plain under the sunny skies of Greece—lighted by the sun's rays through a powerful magnifying glass, carried in an earthenware pot by Grecian maidens through the ruins of the temple of Hera to the River Alpheus, and relayed by 350 young Greek athletes into the beautiful marble Olympic Stadium in Athens, where in 1896 the first modern games were held. Flown by Qantas Airlines across half the world in two old-fashioned miner's lamps to Cairns, a tropical city on the north coast of Queensland, Australia, the flame was transferred again to a torch and handed to the first of 2,750 athletes who carried it, mile by mile, 2,750 miles down the eastern coast. This relay is the longest ever run with the Olympic Flame, a companion record to the fact that its destination, Melbourne, is the youngest city ever to be awarded the Olympic Games.

In this widespread city, built over 230 square miles between Port Phillip Dandenong Ranges, western fingers of the Australian Alps, preparations were made for several years to make the first Olympic visit into the Southern Hemisphere a rousing success. The games claimed the allegiance of 89 nations, and a record entry of more than 70 countries were represented at Melbourne. This meant that upwards of 6,000 athletes and officials and an estimated 10—15,000 overseas visitors were guests of Australia. And both Melbourne and its 1,500,000 people took their roles as Olympic hosts seriously. In addition to the Olympic Games, which brought together in Melbourne a brilliant array of athletic talent, the city fathers arranged a full round of festivities, entertainment and hospitality for visitors. The city was 'en fete' for the occasion, its buildings and streets gaily decorated. An arts festival feature exhibitions of architecture, sculpture, graphic arts, painting and literature. There were also symphony concerts, open-air concerns, performances of opera, drama and ballet, stage shows and street parades. And when the Olympic Flame was extinguished at the end of Melbourne's Olympiad, these things combined with the excitement of the games gave visitors the pleasure of having seen sporting history made in one of the loveliest and most gracious cities of the world.

"The Steeples of Copenhagen" is an interesting writeup. In the twelfth century Copenhagen was little more than a fishing village huddled in a cleft along the eastern shore of Zealand Island. But through the years her citizens built well, and today the city

is widely recognized as one of the best in Europe. Many different buildings and types of architecture, gracious and imposing, ancient and modern, contribute to this reputation. But probably, none can bear witness to the compliment as quickly and spectacularly as Copenhagen's remarkable array of steeples soaring majestically into the sky. They are unavoidably noticeable in wide variety and numbers. They grace churches, castles and public buildings of all sorts, lending the city a distinction none other can claim.

"Profile of Greece" is another interesting article. The Oracle of Apollo of Delphi has lain quiescent for two thousand years. But in Greece today the ancient prophecies of the resurgence of the nation are being spelled out. Each Greek island is a tiny continent of particular beauty, rising flower-like from the jewel-clear waters of the Aegean. In Crete are the splendid ruins of labyrinthian Minoan palaces, their walls still bright with scenes from the luxurious and graceful civilization of 3,000 years before Christ. Rhodes is a layering classical and Medieval art, with an ancient acropolis and forts of the Knights Hospitalers looking down on a harbour once dominated by the Colossus of Rhodes—a statue erected in 305 B.C. after the repulsion of a siege of Demetrius I of Macedon. From Rhodes, and from ports in the other islands of the Dodecanese, reacquired by Greece in 1945, fishermen and sponge divers set sail today in a trade at which they number among the world's best. The beauty of Greece, islands and mainland, with mountains and green tinted valleys delineated in the perfect clarity of light, has perhaps gifted the mentality

of her people with a strong sense of individuality and proportion. Many cultures have converged upon the country—Roman, Gallic, Gothic, Slavic, Frankish, Norman, Italian, Catalan, Turkish—and succeeding generations have absorbed something from each. Yet the contemporary Greek has much in common with his Hellenic ancestors. Poetry, music, lively conversation, and dancing are necessary components of his daily life. The ruins of ancient walls and temples, the weathered flutings and friezes of Corinthian or Doric Columns, stand in vivid contrast to mosaic-walled Byzantine churches and monasteries, wonderfully preserved from the thousand years after the Roman Empire was divided into East and West when Greece lived on under the shadow of Constantinople. Along the coast and on some of the islands Venetian houses and Italian family names recall the invasions of the 14th century and the Renaissance. Dancing is probably the modern Greek's most popular outlet for emotion and all important events are celebrated with the art of the ancient goddess Terpsichore. The story is told of how the inhabitants of a border village, defending themselves against a band of guerrilla rebels, danced merrily to taunt the enemy while their children manned the machine guns. With people of such spirit, who can say Greece will not win her way to another golden age?

In short, the Magazine under review, printed in Fine Art paper, containing excellent articles with plenty of illustrations is well got up and the talented Editor deserves all thanks for uniformly maintaining his high level of excellence.

S. VEDANTAM.

SOUTHERN RAILWAY TENDER NOTICE

(1) THE CHIEF ENGINEER, SOUTHERN RAILWAY, MADRAS-3, invites separate sealed LUMP SUM—CUM—PERCENTAGE TENDERS FOR THE CONSTRUCTION OF STAFF QUARTERS (Items 1, 2 & 3) as per particulars given below up to 12-00 hours on Monday, the 4th February 1957.

Item No.	STATION	Type of Quarters	Schedule	No. of Units	Total approximate value	Earnest Money
					Rs.	Rs.
1	Hubli	II	(a)	13 blocks of 2 units each	1,45,340	7,300
		II	(b)	12 blocks of 2 units each	1,34,160	
		II	(c)	13 blocks of 2 units each	1,45,340	
		II	(d)	12 blocks of 2 units each	1,34,160	
		II	(e)	13 blocks of 2 units each	1,45,340	
		II	(f)	12 blocks of 2 units each	1,34,160	
2	Hubli	IV	..	3 units	41,520	2,100
3	Guntakal	III	..	4 blocks of 2 units each ..	85,400	4,300
		IV	..	2 units		

(2) The Tenders should be submitted in the prescribed form obtainable from the Chief Engineer's Office on production of a receipt for the amount of Rs. 10 paid to the Chief Cashier, Southern Railway, Madras-3 or the Divisional Accounts Officer, Mysore or any Station Master on the Southern Railway towards the cost of each tender form (including cost of plans and drawings). In no circumstances will the amount paid for the tender form be refunded.

(3) The Tenderers are required to specify the Item No. for which they require the tender form/forms while paying the cost of tender forms.

(4) The Tender Form is not transferable.

(5) The Tenderer should submit along with the tender the Income-tax Clearance Certificate in original or an authorised copy, or if he has no taxable income, a sworn affidavit duly countersigned by the Income-tax Officer to that effect.

(6) Tender Forms will not be issued after 15-00 hours on Monday the 28th January 1957.

(7) The Earnest Money for the tender mentioned above should be paid in advance to the Chief Cashier, Southern Railway, Madras-3, or to the Divisional Accounts Officer, Mysore and the receipt issued by him should be attached to the tender. No Demand Draft or Cheque is to be attached to the tender.

(8) The Earnest Money will not be accepted after 15-00 hours on Tuesday the 29th January 1957.

(9) The tenderers may quote for one or more schedules in respect of Item 1 but the successful tenderer or tenderers will be required to pay 10% of the value of the contract as security deposit. The mode of payment is furnished in the tender form.

(10) The tender will be opened at 12-00 hours on Tuesday, the 5th February 1957 in the Chief Engineer's Office at Madras.

(11) The Chief Engineer reserves to himself the right to reject, without assigning reason, any or every tender or part thereof and does not bind himself to accept the lowest or any tender or part thereof.

NATIONAL SAVINGS SCHEME

Every one strives his best to contribute his mite toward the Second Five-Year Plan to build a new India. The Railwaymen who have always been in the forefront in all new ventures in the interest of the country have again proved themselves true to their mettle.

The small savings scheme campaign has received a new impetus among the Railway Staff. In furthering the scheme, a Committee consisting of Staff from the GM's Personnel Branch was formed on 13-9-1956 under the initiative and guidance of Messrs. R. Nagarajan, Personnel Officer (Labour) and E. S. Kalyanaraman, Assistant Personnel Officer (Labour).

PRESIDENT

Sri T. K. Venkatesan, *Office Superintendent.*

SECRETARY

Sri T. S. Venkateswara Rao, *Senior Labour Welfare Inspector.*

MEMBERS

Sri B. Vishvanath, *Secretary of the Southern Railway Social Association.*

Sri P. R. Sabbaiah, *Senior Labour Welfare Inspector.*

„ M. V. Srinivasan, *Chief Clerk.*

„ T. S. Natarajan, *Head Clerk.*

„ S. Shanmugham, *Head Clerk.*

„ T. N. Vaidyanathan, *Chief Clerk.*

„ K. Renganatha Iyer, *Head Clerk.*

„ T. R. Krishnaswamy, *Steno to DGM(P).*

Sri S. Gopalan, District Organiser of the National Savings Department, addressed the Committee and explained to them the various factors of the scheme and the formation of Savings Group.

The Committee took up the task in all earnestness and the scheme was launched in the General Manager's Office, Personnel Branch, in the first instance. The Staff were enthusiastic and evinced a great deal of interest. They whole-heartedly co-operated with the Committee. 122 members of the Staff bought National Plan Certificates to the value of Rs. 1,045 during a period of 60 days.

Group photo of the Committee.



A function for the distribution of the Certificates was held on the 17th November 1956 in the Meeting Room of the General Manager's Office under the Chairmanship of Sri R. Nagarajan, Personnel Officer (Labour). Messrs. G. Ramachandran, Deputy Regional National Savings Officer, Madras and E. S. Kalyanaraman, Assistant Personnel Officer (Labour), addressed the audience.

The Deputy General Manager (Personnel) sent the following message congratulating the members on their great success:—

"I wish to convey my appreciation of the efforts made by you and the Committee members in organising the National Savings Scheme Drive in the Headquarters Personnel Branch. It is really a scheme of the common man which gives an opportunity to all of us to realise and discharge our great responsibility towards building up of a New India and thus becoming direct partners in the task of achieving our high objectives. Railways and Railwaymen particularly have to play a very vital role in the implementation of the current and succeeding Plans. What you have contributed so far in your sphere of work will surely be a fillip for the extension of the Scheme in the other Branches and I am sure with the example set up by you more contributions will pour in and the Railway Staff at Headquarters Offices will be the first in the list of organisations that have contributed a substantial amount on this investment both for their well-being as well as the building up of our Nation. I wish you all success in your endeavour. Owing to

preoccupation I regret I am unable to be physically present at the function."

Sri R. Nagarajan in his presidential address stressed the importance of the Second Five-Year Plan and the great contribution the small savings can make towards a greater India.

The function came to a close with a vote of thanks.

It is hoped that the lead given by the General Manager's Office, Personnel Branch, will be taken up by the other branches in forming Savings Groups on similar lines and contribute their share towards the Small Savings Scheme.

OFFICE SUPERINTENDENT, C.S.O.'s OFFICE, RETIRES

Sri R. Sreenivasa Iyer, Office Superintendent, Chief Security Officer's Office, Southern Railway, Madras Egmore, retired from service after a long and meritorious service of 32 years. To mark this occasion there was a farewell function on 15-12-1956 which was well attended by Officers and Staff of the Headquarters Branch of the Railway Protection Force. The Officers and others spoke eulogizing the services of Sri Sreenivasa Iyer on this occasion.

ELECTRIFICATION OF GUDUR RAILWAY STATION

Gudur Railway Station was electrified on Monday the 26th November 1956. Sri M. S. Murty, Divisional Superintendent, Bezvada, performed the switching on ceremony at a pleasant function got up at Gudur Railway Station. Sri P. Dasaratharama Reddi, Member, Zonal Railway Users' Consultative Committee, presided.

Speaking on the occasion, Sri M. S. Murty congratulated the Staff of the Electrical Department for the expedition with which the work of electrifying the station was completed. He detailed the various amenities that were being provided to passengers at stations on the Bezvada Division and assured the audience that everything possible would be done by the Railway Administration to provide maximum amenities for the Railway's Customers, especially the third class passengers.

Sri M. S. Panchapakesan, Station Master, Gudur, proposed a vote of thanks.

FAREWELL PARTY TO SRI I. V. VAIDYANATHAN, AEN/RU

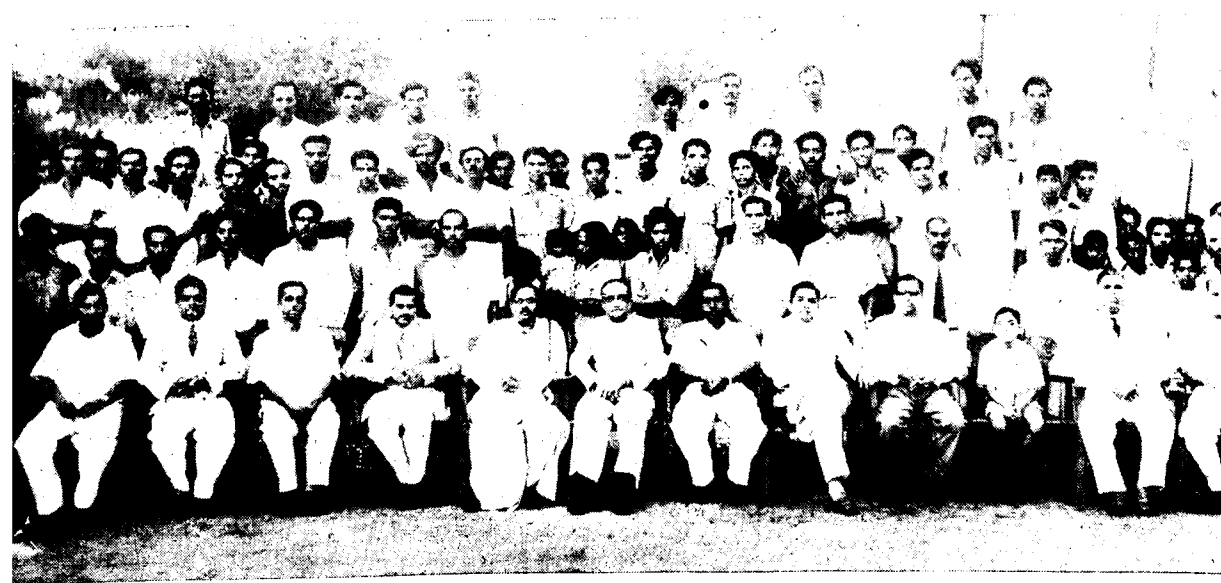
A farewell party was given to Sri I. V. Vaidyanathan, Assistant Engineer,

Conversion Works, Renigunta, on the evening of the 30th November 1956 on the eve of his transfer to Madras as ABE. Sri K. R. Thangasami presided.

Sri Thangasami said that Sri Vaidyanathan joined the Conversion division in September 1954; having drawn up the drawings for bridges in the head office from September 1954 to April 1955, he came to Renigunta and took up the execution of the bridge works. Sri Vaidyanathan, he said, did excellent work under trying conditions. He had a high sense of devotion to duty and sweet ways of getting on with his assistants and work.

Sri Thangasami concluded by wishing Sri Vaidyanathan a long life, peace, happiness and prosperity and extending a hearty welcome to Sri R. Parthasarathy his successor.

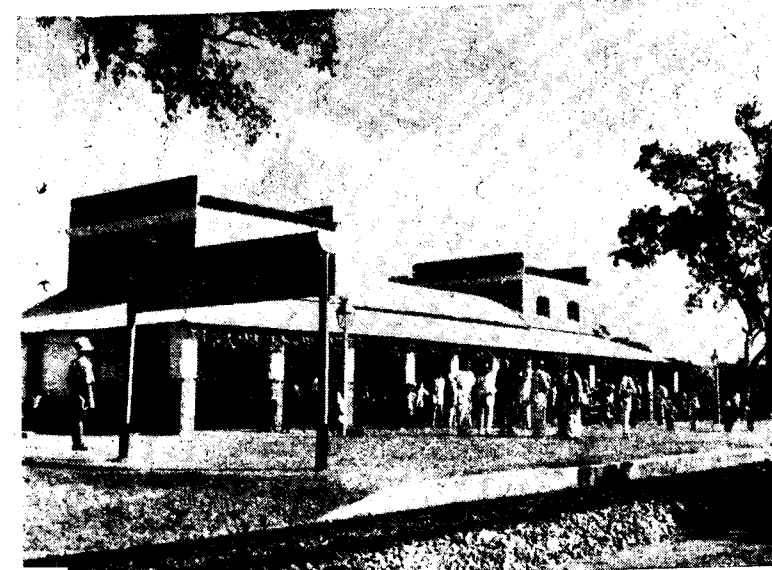
Group photo taken on 26th November, when Sri M. S. Murty performed the switching on ceremony at the newly electrified Gudur Station.





His Holiness Dalai Lama (wearing spectacles) and His Holiness Panchen Lama at Bangalore.

Being welcomed by Sri D. B. Patel, S.D.G.M., S. Rly. and Sri P. T. Padmanabha Mudaliar, Divisional Supdt., Mysore.



**TIRUPATI
WEST STATION**
Opened on
31st December 1956

A view of the new station.

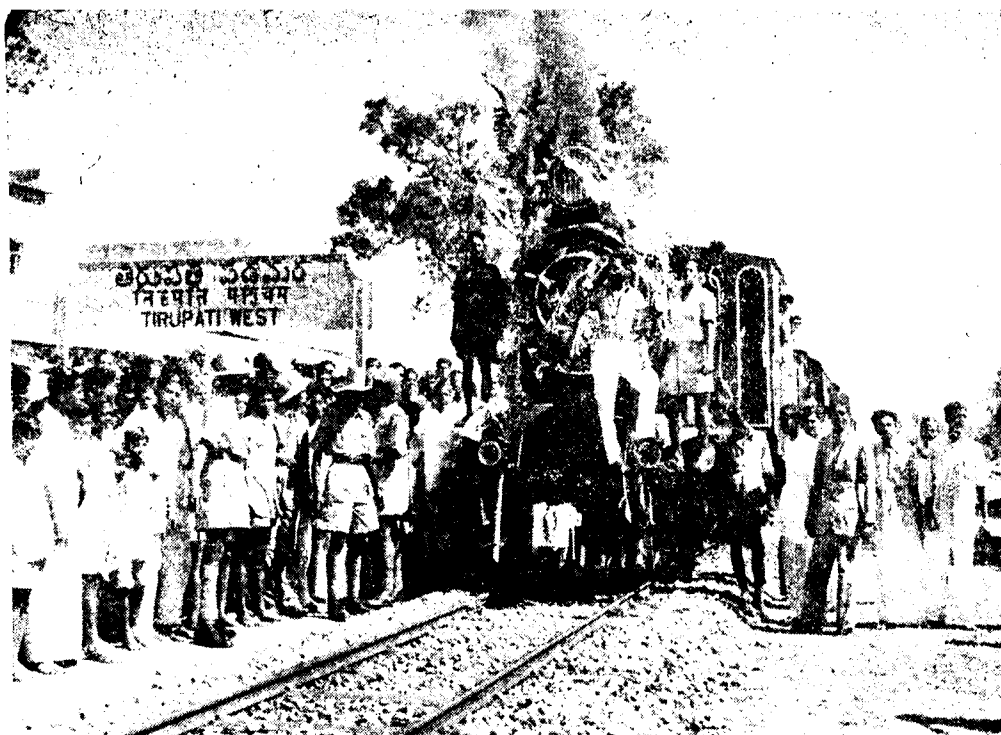


Sri O. V. Alagesan cutting the tape and declaring the station open. With him are Sri M. Ananthasayanam Ayyangar, Speaker, Lok Sabha, Sri T. A. Joseph, G.M., S. Rly., Sri C. Anna Rao, Member, N.R.U.C.C. and Sri T. C. Krishna, Divisional Operating Supdt., Guntakal.



His Holiness Panchen Lama with Sri D. B. Patel, Senior Deputy General Manager, S. Rly. and others at Bangalore Station.





The first train steams in at the new station.

A section of the guests. Sri Ananthasayanam Ayyangar and Sri T. A. Joseph can be seen in the foreground (right).



SOUTHERN RAILWAY

TENDER NOTICE

Renigunta-Gudur Section Conversion to Broad Gauge.

Junction arrangements at Renigunta - "Earthwork in Formation in Renigunta Yard"

The Engineer-in-Chief, Southern Railway, Egmore, Madras-8, invites sealed tenders for the above work upto 12-00 hours on Wednesday the 6th February 1957.

Tenders should be submitted in the prescribed forms obtainable from the Office of the Engineer-in-Chief, Southern Railway, Egmore, Madras-8 or from the Executive Engineer's Office, Renigunta-Gudur Conversion Works, Renigunta, on production of a receipt for the sum of Rs. 10 (Rupees Ten only) paid to the Chief Cashier, Southern Railway, Madras-3 or any Station Master on the Southern Railway towards the cost of each tender form. In no circumstances will the cost of tender forms be refunded. Tender forms are not transferable.

Tender forms will be issued upto 12-00 hours on Monday the 4th February 1957.

Earnest money Rs. 13,400 should be paid in advance to the Chief Cashier, Southern Railway, Park Town, Madras-3, not later than 12-00 hours on 4th February 1957 and the receipt submitted along with the tender. No cheque or demand draft should be attached to the tender.

Tenderers are required to submit Income-tax Clearance Certificate, in original, along with the tender. If previously sent and is current, reference to the particular tender with which it was sent should be furnished.

Earnest money is fixed at 5% of the value of the contract and the successful tenderer will be required to furnish 10% of the value as per his accepted tender towards security deposit.

Tenders will be opened at 12-00 hours on Thursday the 7th February 1957 at the Office of the Engineer-in-Chief, Egmore, Madras-8.

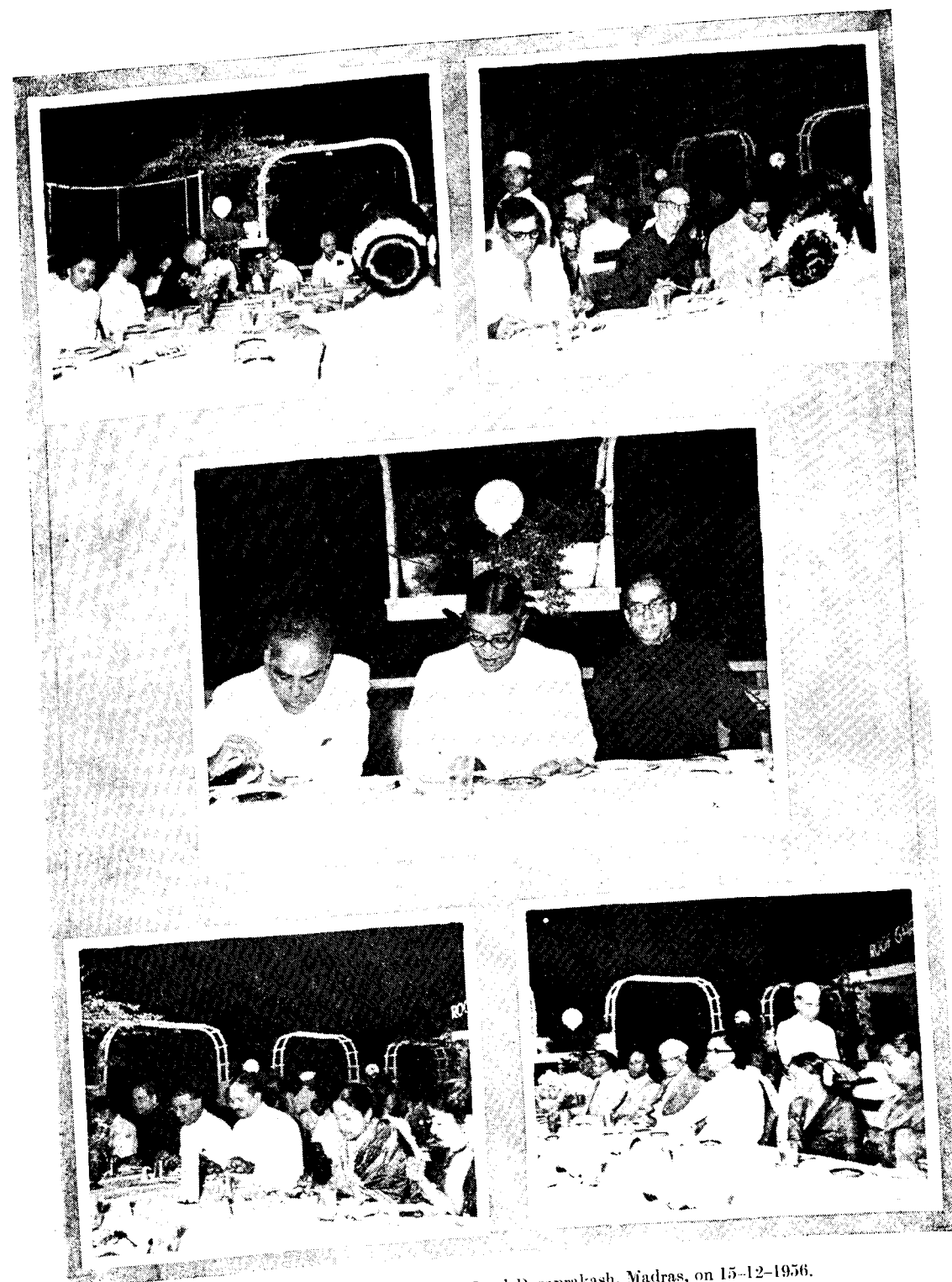
The Engineer-in-Chief reserves to himself the right to reject without assigning reasons, any or every tender or part thereof and does not bind himself to accept the lowest or any tender or part thereof.

ACKNOWLEDGEMENT

We have received two well got-up Calendars from M/s. Mukand Iron & Steel Works Ltd., Bombay and M/s. Burmah Shell Oil Storage and Distributing Co. Ltd., Madras.

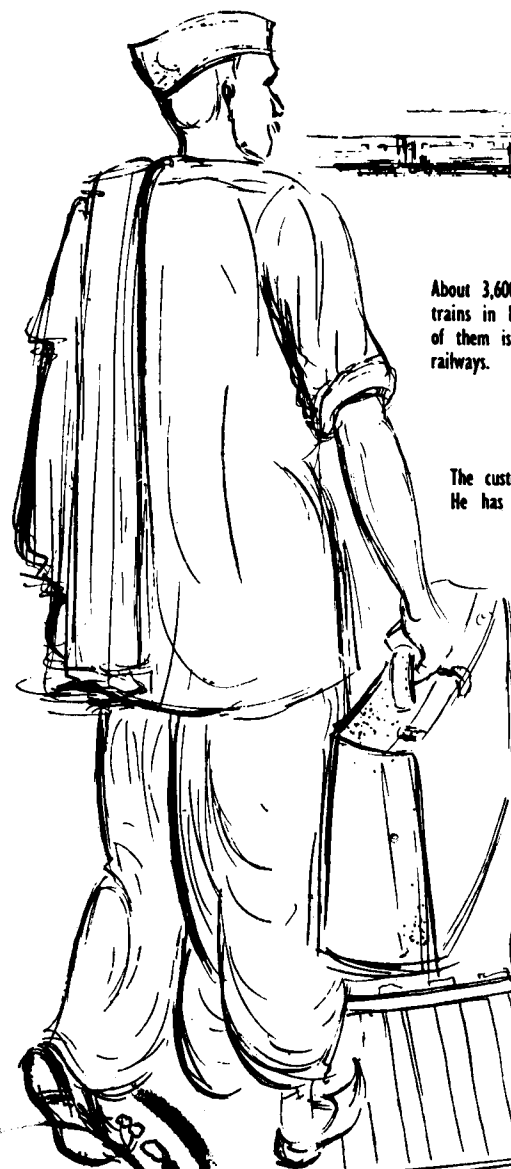


Dinner party to Sri N. Kamalakara Rao, Senior Deputy General Manager, on the eve of



retirement, by officers of the Southern Railway at Hotel Dasaprakash, Madras, on 15-12-1956.
(Photos by P. S. Vedhachalam.)

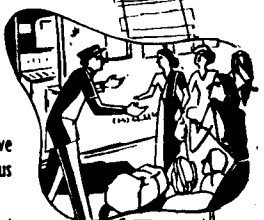
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- the right to get correct information.
- the right to a little extra attention in the case of a woman or a child, or an infirm or illiterate person.



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