

284

SOUTH RAIL NEWS.

INDEPENDENCE DAY
NUMBER.

VOL. 5

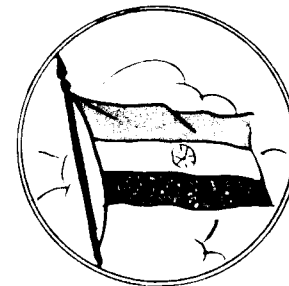
NO. 5

AUG. 1958



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VOL. V

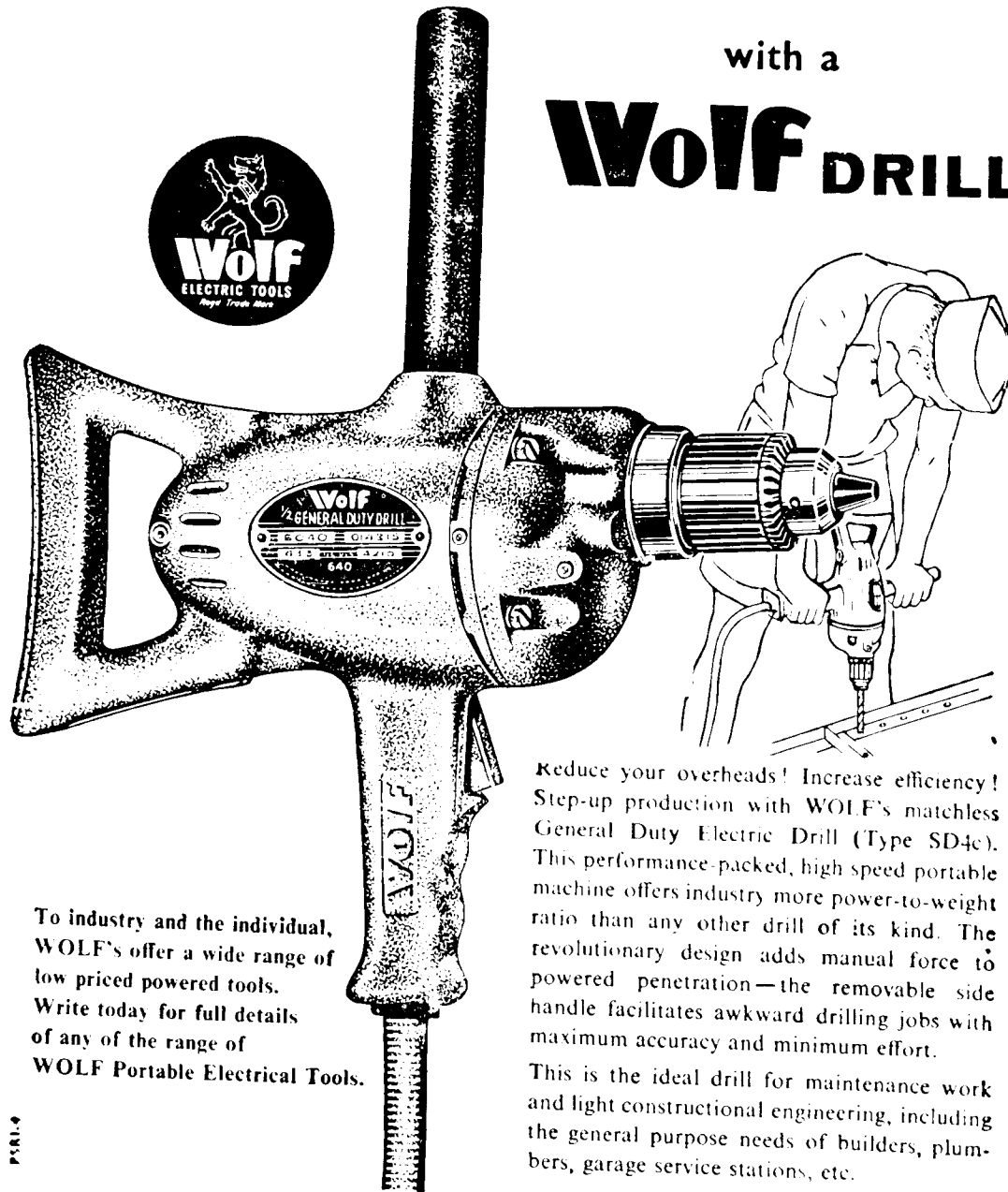
AUGUST 1958

No. 5

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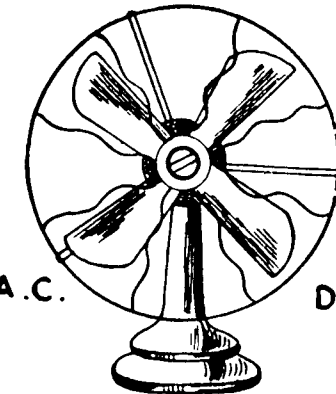


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SOUTHERN RAILWAY

TENDER NOTICE

The Deputy Chief Engineer (Construction), Egmore, Madras-8, invites *separate* sealed tenders for the following works upto 13 hours on Thursday, the 4th September 1958:—

NAME OF WORK	Approximate cash value of the work	Earnest money	Period of completion	Cost of tender form
	Rs.	Rs.		Rs.
<i>Proposed Doubling of Track between Chitteri and Mukundarayapuram in South-West Line.</i>				
Earthwork in Formation, Service Roads, etc., between Chitteri and Thalangai.	6,00,000	18,000	Twelve months	10
<i>Proposed Doubling of Track between Puttur and Pudi in North-West Line.</i>				
Construction of Bridges between Puttur and Taduku on the proposed Down Line.	3,65,000	10,950	Ten months	10

Earnest money as detailed above is to be paid *in advance* to the Chief Cashier, Park Town, Madras-3, within 12 hours on Monday, the 1st September 1958 and the receipt thereof attached to the tender *without fail*.

Further particulars and the tender forms can be had from the Deputy Chief Engineer (Construction), Egmore, Madras-8, on production of a receipt for the sum of Rs. 10 towards the cost of *each* tender form paid to the Chief Cashier, Park Town, Madras-3, or any Station Master on the Southern Railway, within 12 hours on 1st September 1958.

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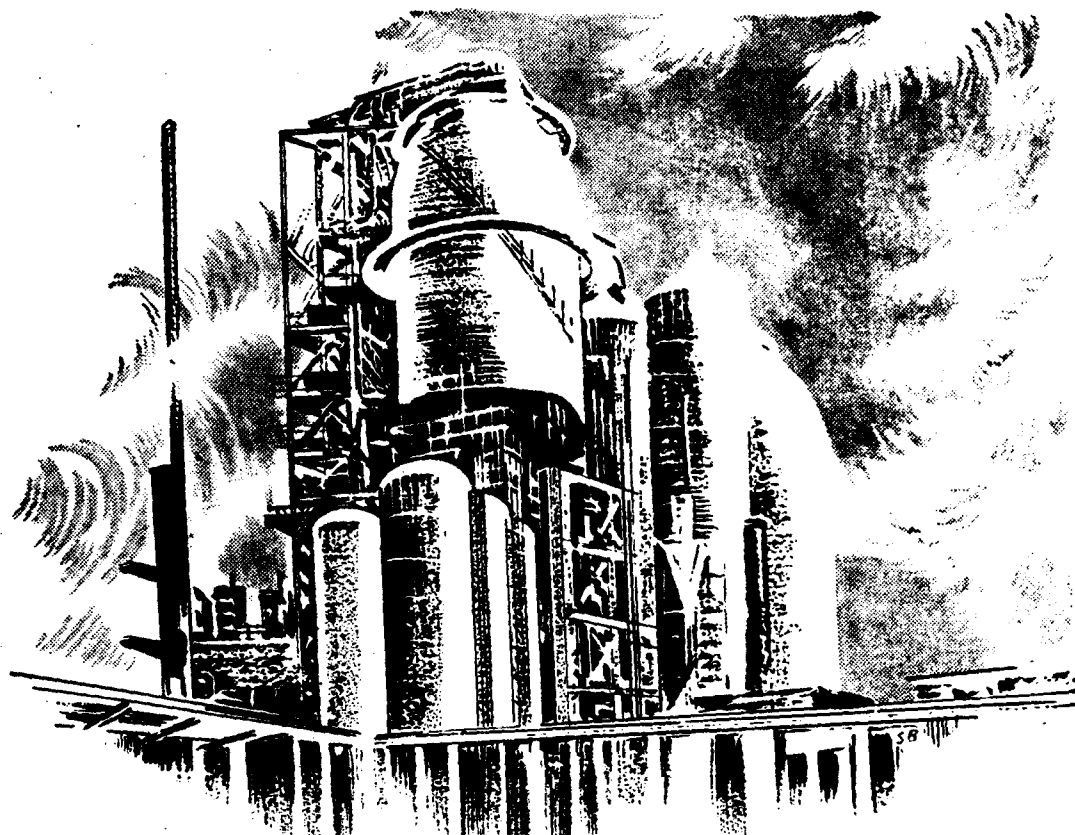
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IC.14



GENERAL MANAGER

On the 15th of August 1958 we celebrate the eleventh anniversary of our attaining independence. This is a day of national rejoicing and we must take our part in it. This also gives us an opportunity of looking back and reviewing our activities during the year we have left behind.

The period has been one of intense activity for all departments. Engineering construction has been proceeding apace and increasing traffic is being handled. The opportunity of work and service that we have today is the envy of railwaymen of the past generations. At no time in the history of the Southern Railway has there been so much all-round activity over the entire railway as today. At no time has there been so complete a realization of the vital role the Railways are playing in the economy of the country. Every Southern railwayman who is in employment today should be proud of the fact that he has a hand in successfully implementing the great task we have set ourselves. Every Southern railwayman should set an example of such devotion to duty as others may well emulate.

The Southern Railway has a splendid record of service to the country, and this has been possible by the whole-hearted co-operation of all grades of staff. Let us on this auspicious day take a pledge to continue our efforts with unabated zeal so that the objects of the Second Five-Year Plan are brought to fruition. The task can only be achieved if there is determination on the part of one and all, and I have no doubts that such determination is there.

Scumby

SOUTHERN RAILWAY

TENDER NOTICE

Tender No. S/236/I/GB4/F/1688/MECH/1

Sealed tenders are invited for the supply of 16 tons Steel bars high tensile 50 tons per sq. inch Round 1" dia. to IRS Specn. R/32/54 Clause 7d or BSS No. EN 17 and will be received by Controller of Stores, Southern Railway, Ayanavaram P. O., Madras-23, before 3 P.M. on 28-8-1958 and will be opened by him at 3 P.M. on 28-8-1958.

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

The last date for the receipt of earnest money, viz., Rs. 500 by the Chief Cashier, Southern Railway, Madras-3, is 26-8-1958.

Tender forms will not be issued after 3 P.M. on 25-8-1958.

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SOUTHRAILNEWS

(Published by the Southern Railway)

VOL. V

EDITORIAL NOTICE

No. 5

K. SRINIVASAN, Editor

All contributions must be clearly typed and double-spaced on one side of the paper only, and signed, not necessarily for publication but as a guarantee of good faith.

Manuscripts and photographs, not accepted for publication, will be returned only if the sender so requires and encloses the usual stamped, addressed envelope.

Contributions should be addressed to the Editor, not by name, and reach him not later than the 10th of the previous month.

The Editor does not assume any responsibility for the accuracy of the news supplied by correspondents or for opinions expressed by contributors. Opinions expressed in the Southrailnews whether editorially or by contributors should be regarded as having no official authority.

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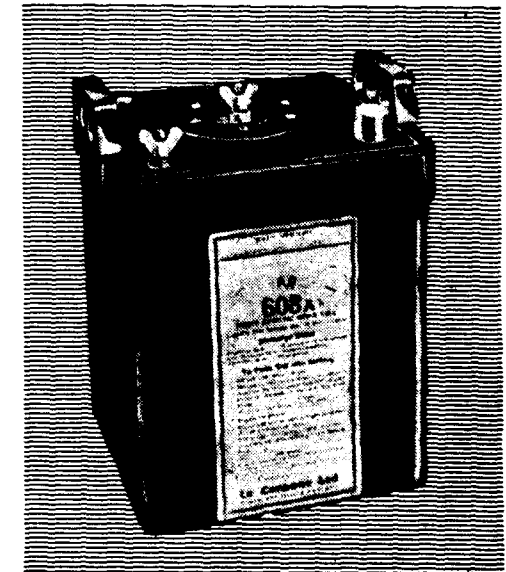
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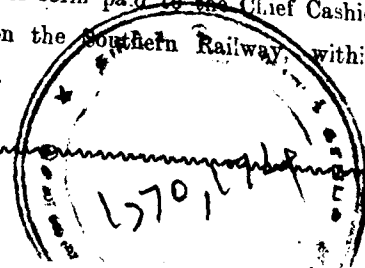
TENDER NOTICE

The Deputy Chief Engineer (Construction), Egmore, Madras-8, invites *separate* sealed tenders for the following works upto 13-00 hours on Tuesday, the 2nd September 1958 :—

Sl. No.	Name of work	Approximate cash value of the work	Earnest money	Period of completion	Cost of tender form
1	<i>Doubling of track between Puttur-Pudi North-West Line.</i>	Rs.	Rs.		Rs.
	Earthwork in formation and service roads in Upline from Ch. 19,000 to Ch. 29,000.	15,75,000	47,250	18 months	10
2	<i>Proposed doubling of track between Talamanchi and Musunur in North-East Line.</i>				
	Earthwork in formation and service roads, etc., between Talamanchi to Bitragunta.	7,25,000	21,750	12 months	10

Earnest money as detailed above is to be paid *in advance* to the Chief Cashier, Park Town, Madras-3, within 12-00 hours on Thursday, the 28th August 1958 and the receipt thereof attached to the tender *without fail*.

Further particulars and the tender forms can be had from the Deputy Chief Engineer (Construction), Egmore, Madras-8, on production of a receipt for the sum of Rs. 10 towards the cost of each tender form paid to the Chief Cashier, Park Town, Madras-3, or any Station Master on the Southern Railway, within 12-00 hours on Thursday, the 28th August 1958.

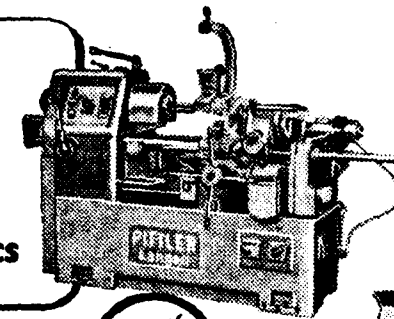


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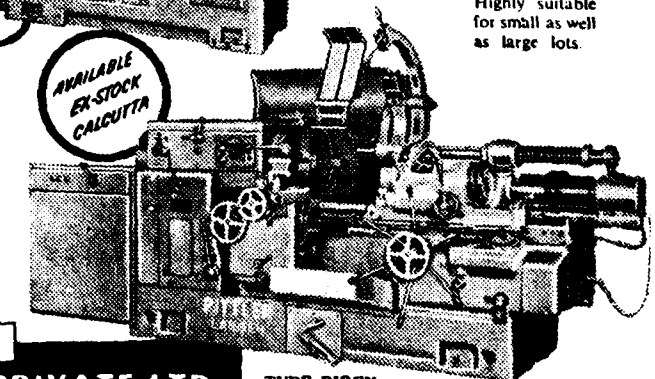


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Southrailnews

VOL. V

AUGUST 1958

No. 5

PROGRESS OF RAILWAY TESTING AND RESEARCH CENTRE, LUCKNOW

NEW TROLLEYS FOR RAILWAYS

NEW cycle trolleys for both the Broad and Metre gauge railways have been designed by the Railway Research Centre, Lucknow. It is learnt that 50 such trolleys have already been despatched to the Railways for extensive trials. The new trolleys can be pedalled without much effort by one trolleyman. They can also be lifted off by two men and the new trolley weighs 300 lbs. It is half the weight of the conventional push trolleys used in the Indian Railways. The normal complement of a push trolley is 4 men and the cycle trolley can be run with three men even on very long journeys.

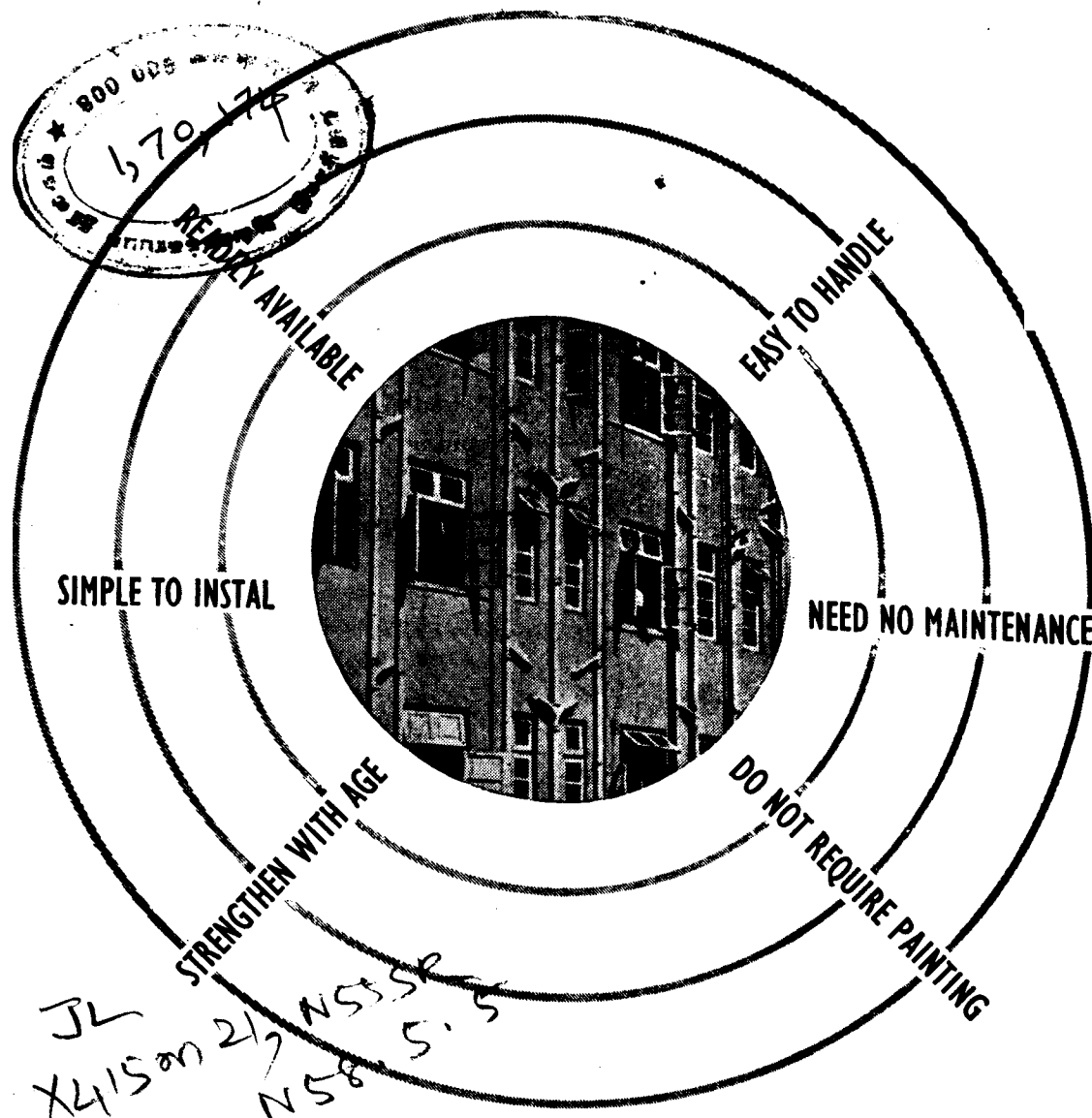
At present there are about 3,000 push trolleys in use on the Indian Railways. A decision to replace the push trolleys will be taken after the results of the extensive trials that are being carried out by the Railways are known. By the proposed arrangement there will be for each trolley economy of one man and also probably economy of material in making the trial, when the same work is done by less men. The men thus released can be utilised for some other productive work. A policy of economy including small items has to be followed not merely because it will save money but will help save the people.

BUGLESS TRAVEL IN SIGHT

A public enemy the bug which troubles railway passengers has to be eliminated. The new discovery which is being perfected in order to eliminate bug nuisance is worth mentioning. Two types of insecticidal varnishes produced by the Railway Research Centre at Lucknow to fight the bug nuisance in Railway compartments are stated to have yielded satisfactory results. The varnishes were applied inside a number of coaches and the results watched. There were no bugs although the coaches were badly bug-ridden at the time the varnishes were applied. Experiments have shown that the varnishes retain their effectiveness even after storage for one year. Experiments are being continued in this direction and it is likely that Railway authorities acquire patent rights for these varnishes which serve insecticidal so far as bugs are concerned.

RAIL CONCESSIONS

As in previous years, concessional return tickets at 1½ single journey fares will be issued on all the railways, from July 15 to September 15, 1958, for class I, II and III. Separate series of 'Mail' and 'Ordinary' return tickets will be issued in case of II and III classes at the appropriate fares available by Mail and Express



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August 1958

and Ordinary trains respectively. Similarly, combined Mail/Express and Ordinary tickets will be issued where necessary.

The period of availability of the return tickets will be 20 days for journeys between 301 and 500 miles; 25 days for journeys between 501 and 750 miles; and 30 days for journeys of 751 miles and over. The return tickets, however, will not be valid for completion of the return journey after the midnight of September 30, 1958. For example, a return ticket issued for a distance of over 750 miles on September 15 will be available for completion of the return journey only upto September 30, 1958.

Break of journey on the return journey will not be permissible, but

it will be allowed on the outward journey, according to the normal rules applicable in case of single journey tickets.

Passengers are required to present the return halves of their tickets at the booking office of the station from which the return journey is to start and have them dated, indicating the date of commencement of the return journey. This is compulsory and passengers holding return halves which are not so dated will be treated as ticketless travellers.

The point to be noted specially is during the current calendar year (1958), September 15 is the last date upto which concessional return tickets will be issued. The last date for availability is 30th September.



A pen drawing of Sri Jagjivan Ram, our Railway Minister by Sri C. D. Krishnamurthy, FA & CAO'S Office, Madras

CALENDAR FOR 50 YEARS (1950 - 1999)

YEARS				MONTHS											
1950	1961	1978	1989	1995	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY				
1951	1962	1973	1979	1990	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	SEP.-DEC.	JUNE	APR.-JULY
1957	1968	1974	1985	1991	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	JUNE	APR.-JULY	SEP.-DEC.
1958	1969	1975	1986	1997	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	JUNE	APR.-JULY
1953	1964	1970	1981	1987	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	APR.-JULY	SEP.-DEC.
1954	1965	1971	1982	1988	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	APR.-JULY
1955	1966	1977	1983	1994	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE
1956	1967	1972	1978	1984	JAN.-APR.-JULY	OCT.	MAY	FEB.-AUG.	MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-APR.-JULY	SEP.-DEC.	APR.-JULY
1959	1970	1976	1982	1988	SEP.-DEC.	JAN.-APR.-JULY	OCT.	MAY	FEB.-AUG.	MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-APR.-JULY	SEP.-DEC.
1960	1971	1977	1983	1989	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	JUNE	APR.-JULY
1961	1972	1978	1984	1990	MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	APR.-JULY	SEP.-DEC.
1962	1973	1979	1985	1991	FEB.-AUG.	MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	APR.-JULY
1963	1974	1980	1986	1992	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE
1964	1975	1981	1987	1993	JAN.-APR.-JULY	OCT.	MAY	FEB.-AUG.	MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-APR.-JULY	SEP.-DEC.	APR.-JULY
1965	1976	1982	1988	1994	SEP.-DEC.	JAN.-APR.-JULY	OCT.	MAY	FEB.-AUG.	MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-APR.-JULY	SEP.-DEC.
1966	1977	1983	1989	1995	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	JUNE	APR.-JULY
1967	1978	1984	1990	1996	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-APR.-JULY	SEP.-DEC.	APR.-JULY
1968	1979	1985	1991	1997	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-APR.-JULY	SEP.-DEC.
1969	1980	1986	1992	1998	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	JUNE	APR.-JULY
1970	1981	1987	1993	1999	MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	APR.-JULY	SEP.-DEC.
1971	1982	1988	1994	2000	FEB.-AUG.	MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	APR.-JULY
1972	1983	1989	1995	2001	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE
1973	1984	1990	1996	2002	JAN.-APR.-JULY	OCT.	MAY	FEB.-AUG.	MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-APR.-JULY	SEP.-DEC.	APR.-JULY
1974	1985	1991	1997	2003	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-APR.-JULY	SEP.-DEC.
1975	1986	1992	1998	2004	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	JUNE	APR.-JULY
1976	1987	1993	1999	2005	MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	APR.-JULY	SEP.-DEC.
1977	1988	1994	2000	2006	FEB.-AUG.	MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	APR.-JULY
1978	1989	1995	2001	2007	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE
1979	1990	1996	2002	2008	JAN.-APR.-JULY	OCT.	MAY	FEB.-AUG.	MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-APR.-JULY	SEP.-DEC.	APR.-JULY
1980	1991	1997	2003	2009	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-APR.-JULY	SEP.-DEC.
1981	1992	1998	2004	2010	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	JUNE	APR.-JULY
1982	1993	1999	2005	2011	MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	APR.-JULY	SEP.-DEC.
1983	1994	2000	2006	2012	FEB.-AUG.	MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	APR.-JULY
1984	1995	2001	2007	2013	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE
1985	1996	2002	2008	2014	JAN.-APR.-JULY	OCT.	MAY	FEB.-AUG.	MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-APR.-JULY	SEP.-DEC.	APR.-JULY
1986	1997	2003	2009	2015	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-APR.-JULY	SEP.-DEC.
1987	1998	2004	2010	2016	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	JUNE	APR.-JULY
1988	1999	2005	2011	2017	MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	APR.-JULY	SEP.-DEC.
1989	2000	2006	2012	2018	FEB.-AUG.	MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	APR.-JULY
1990	2001	2007	2013	2019	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE
1991	2002	2008	2014	2020	JAN.-APR.-JULY	OCT.	MAY	FEB.-AUG.	MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-APR.-JULY	SEP.-DEC.	APR.-JULY
1992	2003	2009	2015	2021	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-APR.-JULY	SEP.-DEC.
1993	2004	2010	2016	2022	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	JUNE	APR.-JULY
1994	2005	2011	2017	2023	MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	APR.-JULY	SEP.-DEC.
1995	2006	2012	2018	2024	FEB.-AUG.	MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	APR.-JULY
1996	2007	2013	2019	2025	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE
1997	2008	2014	2020	2026	JAN.-APR.-JULY	OCT.	MAY	FEB.-AUG.	MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-APR.-JULY	SEP.-DEC.	APR.-JULY
1998	2009	2015	2021	2027	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-APR.-JULY	SEP.-DEC.
1999	2010	2016	2022	2028	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	JUNE	APR.-JULY
	2011	2017	2023	2029	MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	APR.-JULY	SEP.-DEC.
	2012	2018	2024	2030	FEB.-AUG.	MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	APR.-JULY
	2013	2019	2025	2031	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE
	2014	2020	2026	2032	JAN.-APR.-JULY	OCT.	MAY	FEB.-AUG.	MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-APR.-JULY	SEP.-DEC.	APR.-JULY
	2015	2021	2027	2033	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-APR.-JULY	SEP.-DEC.
	2016	2022	2028	2034	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	JUNE	APR.-JULY
	2017	2023	2029	2035	MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	APR.-JULY	SEP.-DEC.
	2018	2024	2030	2036	FEB.-AUG.	MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	APR.-JULY
	2019	2025	2031	2037	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE
	2020	2026	2032	2038	JAN.-APR.-JULY	OCT.	MAY	FEB.-AUG.	MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-APR.-JULY	SEP.-DEC.	APR.-JULY
	2021	2027	2033	2039	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-APR.-JULY	SEP.-DEC.
	2022	2028	2034	2040	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	JUNE	APR.-JULY
	2023	2029	2035	2041	MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	APR.-JULY	SEP.-DEC.
	2024	2030	2036	2042	FEB.-AUG.	MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	APR.-JULY
	2025	2031	2037	2043	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE
	2026	2032	2038	2044	JAN.-APR.-JULY	OCT.	MAY	FEB.-AUG.	MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-APR.-JULY	SEP.-DEC.	APR.-JULY
	2027	2033	2039	2045	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-APR.-JULY	SEP.-DEC.
	2028	2034	2040	2046	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	JUNE	APR.-JULY
	2029	2035	2041	2047	MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	APR.-JULY	SEP.-DEC.
	2030	2036	2042	2048	FEB.-AUG.	MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	APR.-JULY
	2031	2037	2043	2049	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE
	2032	2038	2044	2050	JAN.-APR.-JULY	OCT.	MAY	FEB.-AUG.	MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-APR.-JULY	SEP.-DEC.	APR.-JULY
	2033	2039	2045	2051	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-APR.-JULY	SEP.-DEC.
	2034	2040	2046	2052	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	JUNE	APR.-JULY
	2035	2041	2047	2053	MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	APR.-JULY	SEP.-DEC.
	2036	2042	2048	2054	FEB.-AUG.	MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	APR.-JULY
	2037	2043	2049	2055	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE
	2038	2044	2050	2056	JAN.-APR.-JULY	OCT.	MAY	FEB.-AUG.	MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-APR.-JULY	SEP.-DEC.	APR.-JULY
	2039	2045	2051	2057	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-APR.-JULY	SEP.-DEC.
	2040	2046	2052	2058	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	SEP.-DEC.	JUNE	APR.-JULY
	2041	2047	2053	2059	MAR.-NOV.	JUNE	SEP.-DEC.	APR.-JULY	JAN.-OCT.	MAY	AUG.	FEB.-MAR.-NOV.	JUNE	APR.-JULY	SEP.-DEC.



Sri M. N. Chakravarti, until recently GM/C. Rly., has been appointed as Member (Staff), Railway Board



Sri S. K. Mukerji, CCS/S. Rly. has been appointed as Member, Railway Rates Tribunal

Our Commercial Newsletter

EARNINGS :

The approximate earnings for the month of April 1958 compare as under with the figures for the corresponding period of the previous year :

(Rupees in lakhs)

April

	1957	1958
Passengers ..	1,70.23	1,69.70
Other Coaching ..	32.11	32.71
Goods ..	2,20.50	2,39.25
Sundries ..	7.44	10.41
Total ..	4,30.28	4,52.07

COMPENSATION CLAIMS :

No. of compensation claims received during the month of April 1958—3,118.

No. of claims disposed of and the amount paid during the month of April 1958—3,480—Rs. 1,82,069.71 nP.

No. of claims outstanding at the end of the month—3,637.

No. of days taken to settle a claim—44 days.

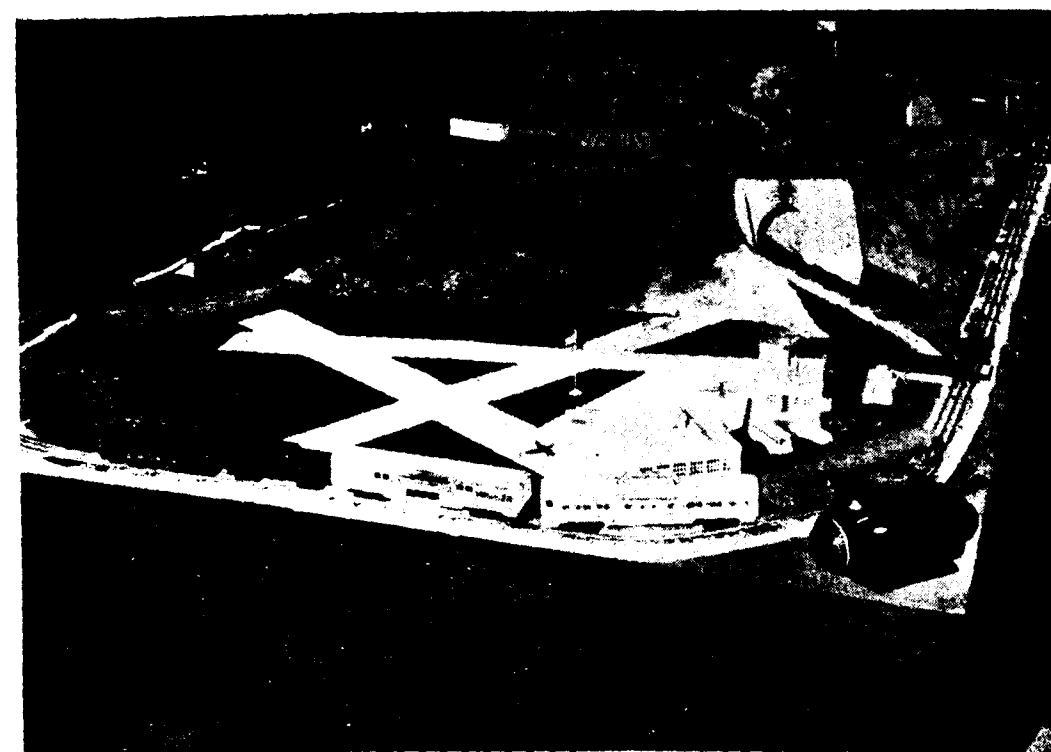
TICKETLESS TRAVEL :

67,771 persons were detected travelling without tickets in March 1958. Out of these 63,057 paid fare and penalty on demand, the amount realised being Rs. 1,38,638 ; 2,919 were prosecuted and 1,436 were imprisoned.



FRUITS OF PEACE EXHIBIT

On view at the USIS, Madras, recently were photographic panels and models of better and faster communication, among other things. Reproduced here are photos of a model railway layout where electric trains ply through tunnels and on hill-tops and an aerodrome sporting model planes



»TECHNOIMPEX«

HUNGARIAN-MAKE RL 2500

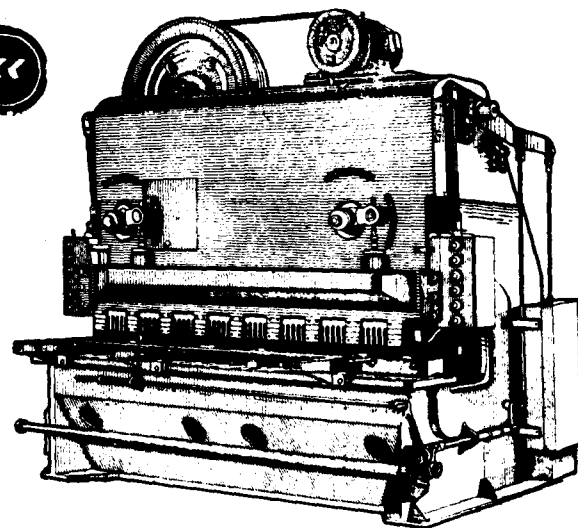
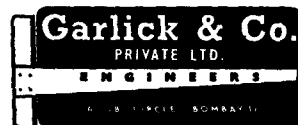
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WORLD OF RAILWAYS

ARTHUR L. STEAD

Our London Correspondent

THE railway conquest of the world provides one of the most fascinating of stories. Most people are aware that railways had their birth in England, from which country the "Iron Horse" and its enthusiastic builders went forth in the nineteenth century to every corner of the globe to furnish mankind with the inestimable benefits of rail transportation.

Generally, credit for bringing railways into the world is given to George Stephenson, the "Father of Railways." He it was who, in September 1825, was responsible for operating the first passenger train over the world's first public railway—the historic Stockton and Darlington line.

Long before George Stephenson appeared in the limelight, however, numerous English pioneers paved the way for the achievement of "Locomotion No. 1" over the Stockton and Darlington system in 1825. This year, there is celebrated the two hundredth anniversary of a real pioneering effort—the securing of the world's very first official permit for railway construction—and it is fitting that this unique event should be recalled by railway folks and railway fans everywhere.

The world's first statutory railway received the assent of the British Parliament on June 9, 1758. The line in question was the Middleton Colliery Railway, near Leeds, England, and the legislation gave permission to Charles Brandling to agree with landowners for the laying of a railway (or "wagon-way", as it was then

termed) from his coal mines at Middleton to a depot in Leeds, the prime object of the venture being "for the better supplying the town and neighbourhood of Leeds, in the county of York, with coals."

Charles Brandling originally came from Tyneside, where he operated several coal mines, and his interest in the Middleton Colliery was acquired through marriage. His immediate aim in building the Middleton Colliery Railway was to enable him to supply coal to Leeds at a lower price than that quoted by competing mines, and before opening his pioneer railway he secured a guarantee from the municipality of Leeds to take 23,000 tons of coal a year from him for a period of 60 years.

As might have been expected, in its original form the Middleton Colliery Railway (or "Brandling's Railway", as it was often styled) largely was based on the rough wagon-ways employed in Brandling's home region of Tyneside. The track gauge was 4 ft. 1 in., and it was constructed of wooden rails resting on longitudinal oak battens tied with cross sleepers about 3 ft. apart. The primitive coal trucks ran on small beechwood wheels with deep flanges, each vehicle conveying about 2½ tons. By degrees, the track was improved, and somewhere around 1,800 iron rails were introduced.

The Middleton Colliery Railway had a total length of 3¾ miles, stretching from West Pit to the Old Staith in the town of Leeds. At the West Pit

**WEDDING & PARTY
PHOTOGRAPHS**

COLOURS

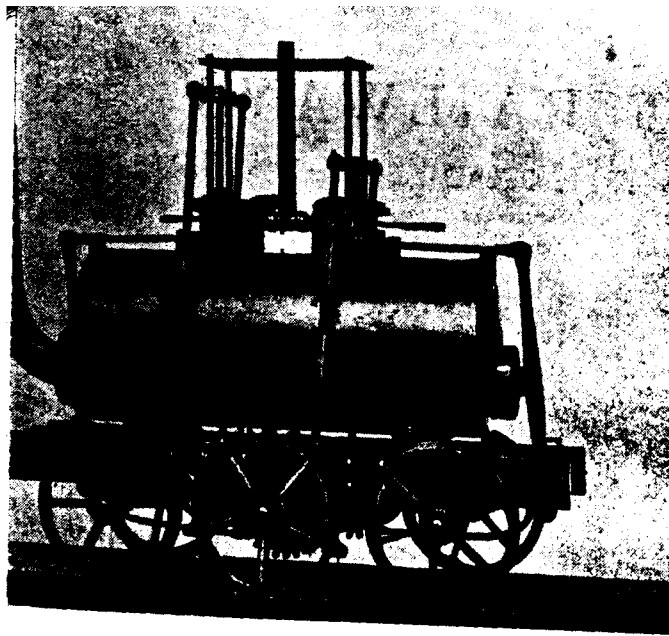
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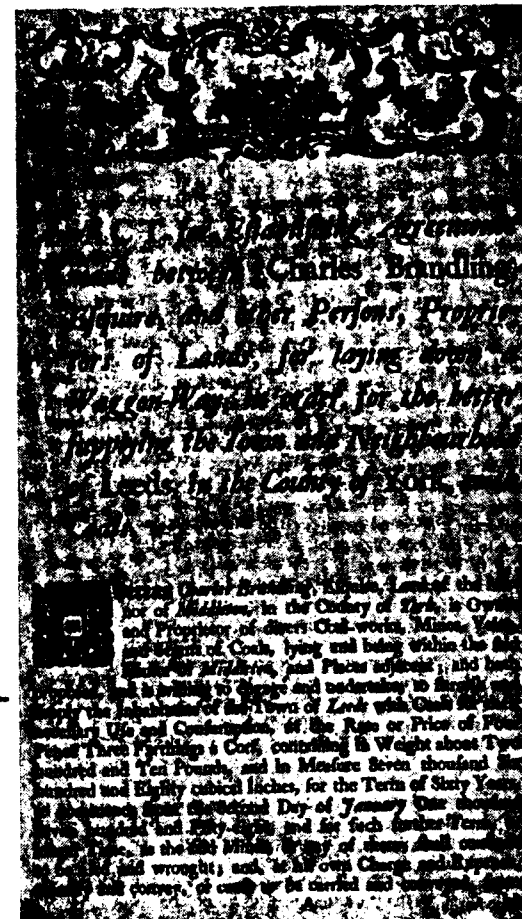
The unique steam locomotive "Blenkinsop" which operated over the Middleton Colliery Railway from 1812

terminus, the line was 400 ft. above sea-level, descending to 95 ft. at the Old Staith. Included in the route of the Middleton Colliery Railway were two sections worked as incline planes, with descending loaded trucks drawing up the empties—a method of working which apparently originated here and soon was followed on other colliery railways.

The first incline on the Middleton line was about 400 yards in length and ran from Town Street to Day Hole, with a fall of about 100 ft. The second incline, 350 yards long, stretched from Belle Isle to Hunslet Carr, with a fall of about 70 ft. These

two inclines were operated by 1,000 ft. long wire ropes controlled by 16 ft. brake drums.

For nearly half a century, the Middleton Colliery Railway prospered as a horse-hauled system, and then, about the year 1810, it was decided to seek an alternative source of power. At the time, clever engineers were dabbling with the possibilities of harnessing steam for use in drawing trains, and in April 1811, John Blenkinsop took out a patent specifying the use of cogs or teeth attached to railway rails, on which locomotives could secure a grip when passing over inclines.



The original Act of 1758 authorizing the building of the Middleton Colliery Railway

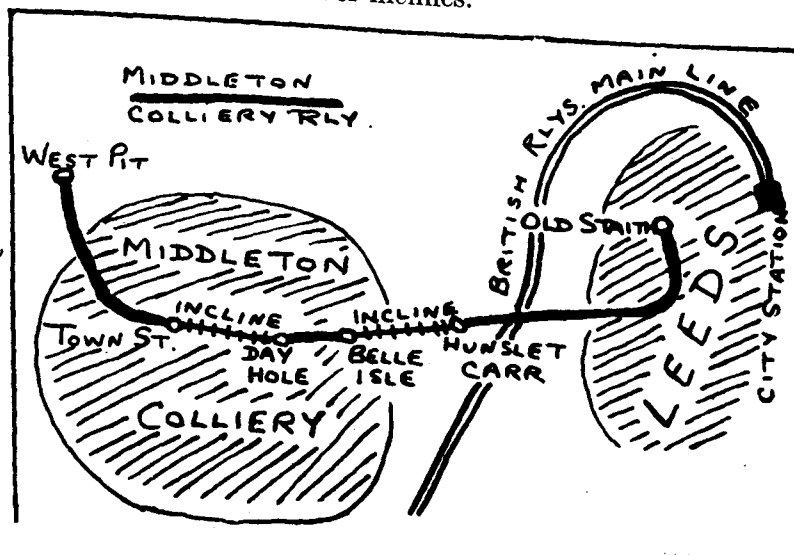
Having equipped the Middleton Colliery Railway with rack rails, Blenkinsop approached Messrs. Fenton, Murray & Wood, and contracted them for five steam engines to be driven on the rack system. The actual design of these locomotives was worked out by Matthew Murray, who had secured patents for steam engines some nine years previously.

Matthew Murray, with his "Blenkinsop" locomotive of 1812, truly made railway history. To him fell the honour of building the world's first commercially successful steam engine, which paved the way for the victorious passage of the "Iron Horse" over the railways of the globe.

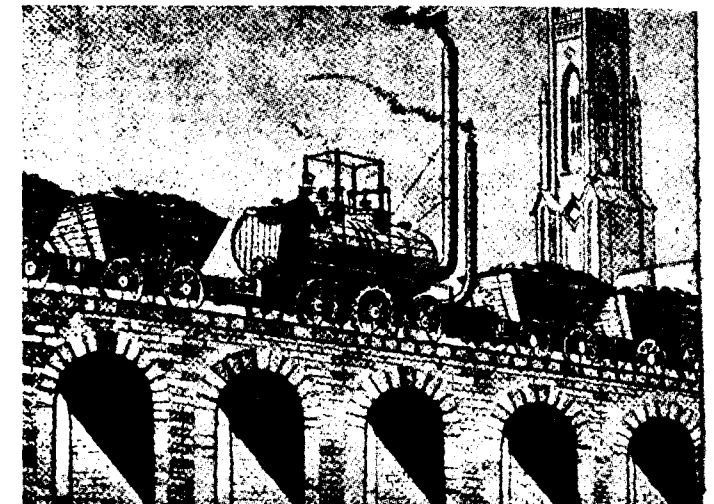
The Middleton Colliery rack locomotives were built in the Round Foundry, Hunslet, Leeds. Each locomotive cost about £380, which included a sum of £30 paid to Richard Trevithick for certain patent rights. Trevithick, of course, was the clever Welsh engineer who pioneered steam haulage over the Merthyr Colliery Railway, but failed to make his adhesion engines a commercial success.

It was on August 8, 1812, that the first rack locomotives began service over the Middleton Colliery line. They

The Middleton Colliery Railway



Train working on the Middleton Colliery Railway around 1815



were named respectively "Prince Regent" and "Salamanca", and it is recorded that on the inaugural run "Prince Regent" drew a train consisting of fourteen one-ton wagons each carrying $2\frac{1}{4}$ tons of coal, *plus* fifty passengers. A contemporary writer spoke of a coal consumption of $2\frac{3}{4}$ pounds for every ton conveyed one mile at 4 m.p.h.

The Middleton Colliery rack locomotives proceeded on their merry way until about 1835, when through a variety of circumstances they were withdrawn from service and replaced by horses. Around 1866, however, steam was reintroduced on the Middleton line, with a Manning Wardle 0-4-0 tank engine.

Somewhere about 1880, the gauge of the Middleton Colliery Railway was changed from 4 ft. 1 in. to the "standard" 4 ft. 8½ in. figure, doubtless to enable wagons of the adjoining main-line railways to pass over portions of the system, and coal wagons of the Middleton Colliery to move over the main-line routes. New 0-6-0 tank locomotives have been brought into use in recent years, and the latest of these, built in 1853 by Hudswell, Clarke & Co., proudly bears the name of "Blenkinsop" as it today handles traffic to and from the Middleton pit-head.

Around the old engine works where the first "Blenkinsop" was constructed in 1812, there are today located many famous locomotive shops, including those of the Hunslet Engine Co.; John Fowler & Co.; and Hudswell, Clarke & Co.—all of which names are familiar in India, to which country they have contributed through the years steam engines in large numbers.

Railway folks throughout the world owe a great debt to the "Blenkinsop" locomotive, and to the Middleton Colliery Railway which this year celebrates its two-hundredth charter birthday. Here is a truly colourful chapter of railway history which ever will shine out among the great pioneering sagas, and be remembered perhaps long after the poor old "Iron Horse" has left us for ever.



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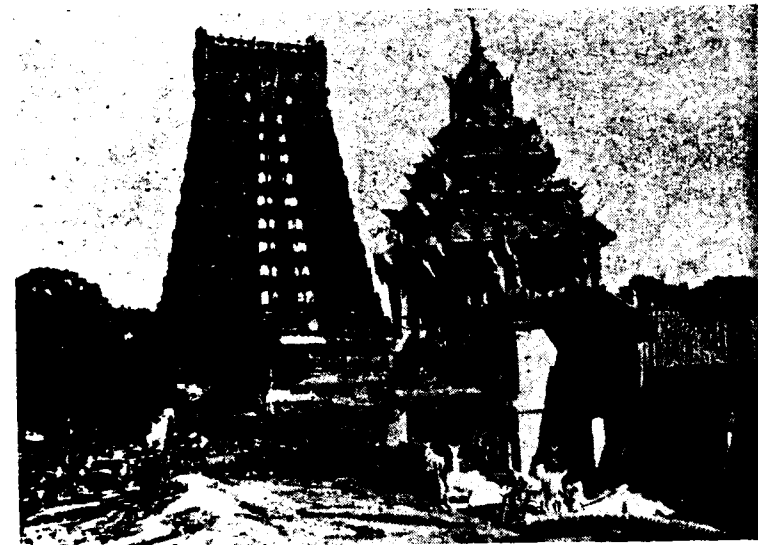
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SRIVILLIPUTTUR

T. N. SRINIVASAN



'Gopuram' and 'Ratham'—Sri Andal Temple, Srivilliputtur

SITUATED in the heart of that ancient land of the Pandyan rulers of South India—at present in the Ramnad district of the Madras state, is an ancient but lovely town of Srivilliputtur, which is the birth-place of that celebrated poetess-saint, Sri Andal. Every devout Sri Vaishnavite visiting South India on pilgrimage will not miss visiting this place, for Sri Andal is held in great veneration by all the sections of this group, and as it was she that had gained the love of the Divine Lord by her "pamalai" or string of lyrical compositions—the well-known 'Tiruppavai' and her less known 'Nachiar-Tirumozhi', both of which occupy a very conspicuous part in the sacred *Nalayira Divya Prabhandam* of the Vaishnavites.

Srivilliputtur is easily reached, as there is a railway station of the

same name on the main line that connects Madras with Trivandrum and is on the Virudhunagar-Trivandrum section of the South-West line, being about 26 miles down Virudhunagar junction. It can also be easily reached by road, as the place is on the main trunk-road and being a prosperous town, it connects the several main places in the Ramnad district by well-maintained roads. To the devout, Srivilliputtur is one of the sacred one hundred and eight *Tirupathis* extolled by the Azhwars and besides this it is the birth-place of the great Periazwar and his still-greater foster-daughter, Sri Andal. Because Sri Gotha, as Sri Andal was also known, was born here and because *Govindan*, the divine Lord lives here, Sri Vedapiran Bhattar, one of the reputed exponents of Vaishnavite traditions sang of this place that he would place the feet

of all those, who mention the name of Villiputtur even once, on his head and worship them fervently. This clearly shows the grandeur of this place, as a sacred locality, worthy of visit and worship.

Long before Srivilliputtur became the birth-place of Sri Andal, it was known as '*Varaha Kshetram*', for it is said that it was here that Lord Vishnu manifested himself as Varaha in his avatic manifestation to kill the demon Hiranvaksha, who had gone to the underworld stealthily carrying the Earth as personified by Sri Bhumi Devi. Vishnu, as Varaha or wild boar, plunged into the ocean and gored to death the demon with his two powerful tusks and brought back the goddess safely above the waters of the sea, restoring her to her proper place.

Later, this place became deserted and a wild forest overwhelmed this locality. But the site was so entrancingly pleasing and quiet that many sages like Bhrigu, Markandeya and others resorted to this forest for performing their penance undisturbed. But their stay was short-lived as a demon by name Kalanemi, knowing that pious people are living there, came to this place and began to disturb the sages in their meditation. Knowing that Vishnu alone can come to their aid and save them from the molestations of the demon, they sought His help. Conceding to the request of the sages, Vishnu ordered His powerful weapon, *Sri Sudarshana* or *Chakra* to proceed forthwith and slay the evil-doer. This done, Vishnu saw that his sacred discus smeared with the blood of the demon and to wash the stain, he ordered Varuna, the Lord of the

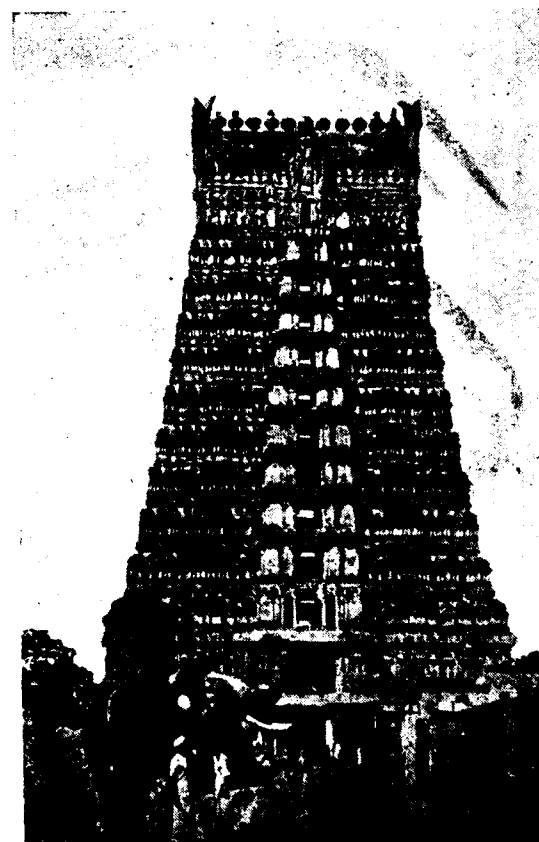
waters, to bring the necessary holy water for that purpose. Varuna, in his turn, directed the three river goddesses, Ganga, Yamuna and Saraswathi to come down to this spot, so that sacred Chakra can be cleaned with these holy tirthams. To this demand the three ancient rivers mixed themselves together and appeared in the present tank known as '*Tirumukkulam*', that still stands at Srivilliputtur. The sages were very happy for this divine help and prayed to the Lord to be pleased to stay there itself for the coming ages. Pleased with their prayers, He deigned to stay as a '*sayana*' murthi under the Banyan tree as '*Vadapatrasyanan*', as He is still known.

After this incident, many centuries rolled by and once again this place became inaccessible due to its becoming again an impregnable forest, infested with all kinds of wild beasts. However, this forest attracted many hunters for the rich game it offered and among them was the brother of the local hunter chieftain known as Villi. This lad used to go often to these forests for catching wild animals and on one occasion he was killed by a tiger. Villi went in search of him and as he was not able to find the lad, he was about to give up his own life in despair and disgust, when the Lord of this place beckoned him to the cave where the tiger had slain his brother. The God also consoled him and directed him to clear the overgrowth of vegetation that hid Him and revive the place. Villi obeyed the divine command and built the village and also constructed a temple for Sri Vadapatrasyana Swamy. From that day the place came to be

known as Villiputtur and as it was made anew, it was also known as '*Puduvai*' the new place. It is under this name as '*Then-puduvai*' that Sri Periazhwar makes mention of this place often in his hymns that form the opening part of the *Divya Prabhandam*.

Sri Periazhwar, also known as '*Vishnuchitta*' was a pious brahmin of Srivilliputtur and was doing the sacred service of supplying flower-garlands and tulsi leaves for the worship of Sri Vadapatrasyana Swamy of this place. He became famous as he was the person who won the religious contest in the court of the then Pandyan ruler at Madura, known as Valadeva, which won for him a bag of gold and the approbation of the ruler. He was a contented devotee and his only misgiving was that he was childless, for which he was praying fervently.

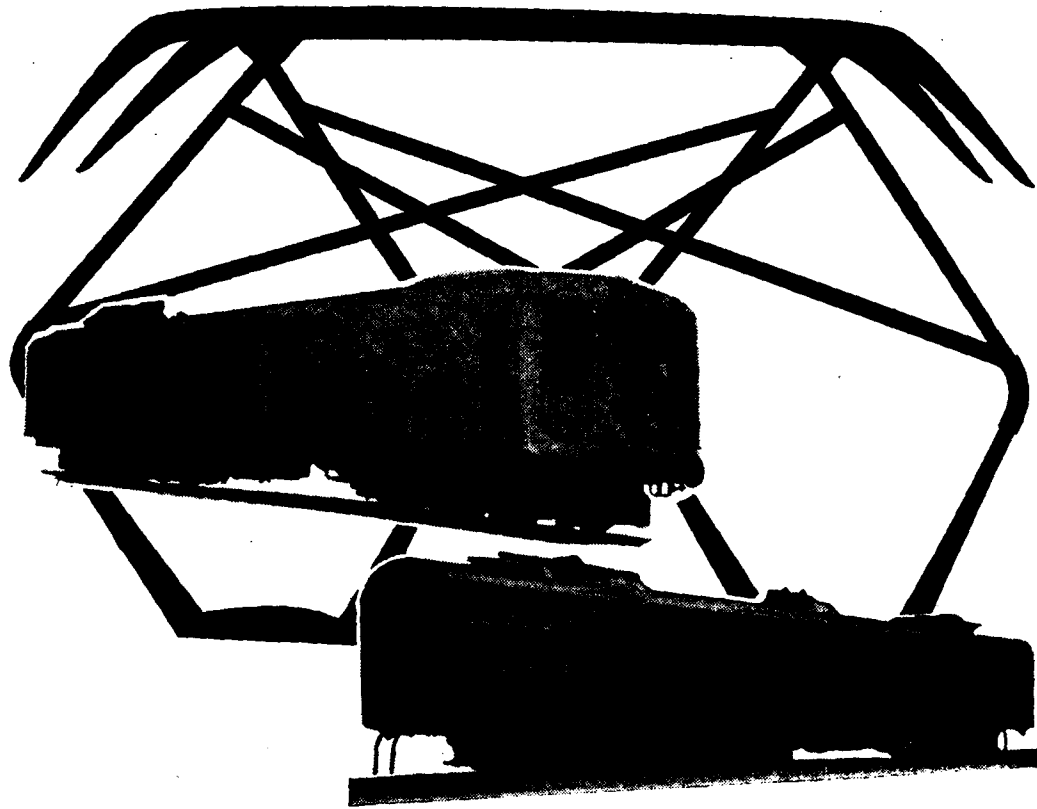
Gathering flowers for worship, one fine morning, Vishnuchitta heard a feeble voice emanating from the bushy tulsi plant and soon found a lovely female babe lying under that aged tulsi plant. His joy knew no bounds and picking up the flower-like child he brought it home and at his Lord's command, named her, Kothai—which means beautiful like a string of flowers. He loved the child so much that he brought her up very tenderly, telling her, as she grew up, stories from the Ramayana and the Bhagavatha. The exploits of Sri Krishna made an indelible impression on the mind of the growing child, which coupled with the stirring lyrics that her father had composed depicting each one of the juvenile leelas of the Lord, made a great mark in her mind. As the



The towering 170 foot gopuram—Sri Andal Temple

child Kothai grew in an atmosphere steeped with the lores of Krishna all the pranks and plays of her became those with Krishna as her nucleus of adoration. Thus grew this child into adolescence, and she began assisting her then aged father in making flower garlands to adorn the Lord Vadapatrasyai. The Azhwar used to do this work in the noon and then go out for sometime and return home in the evening, when he used to take the garlands to the temple.

It struck Kothai that she should adorn herself with these sweet-smelling garlands and she decked



electrifying performance!



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200 motor coaches of the design shown in the lower illustration were delivered to the Central Railway, Brazil. All the electric stock for the service was supplied by Metro Cammell.

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herself with them and enjoyed herself by seeing her own image in a mirror, all the while imagining herself as the spouse of the Lord Himself. Then she used to carefully remove the garlands and place them back in the flower baskets, as they were kept before, so that her father could take them to the temple. This was going on for quite a long time but one day, the father returned home rather early. To his utter surprise mingled with remorse, he saw his daughter defiling the flower garlands by using them herself, before they were taken to the Lord. He did not take her to task lest he should wound her pristine feelings, but went to the temple without the garlands and was moved to tears for his inability to do service to the Lord as he had been doing all these years without a break. But when he was before the Lord, he was informed by a divine voice that he had committed a grave mistake, as the garlands that Kothai wore gained much rather than lost their sanctity, since she was no ordinary mortal child and the Lord ordered that only garlands worn by Kothai must henceforth be made to adorn Him. This bewildered the old man, who however realised the greatness of his foster-daughter, who came to be known from thence as 'Choodikodutha Nachiar'.

Kothai grew into age and the saint wanted to get her married to a suitable youth. But the young girl displayed remarkable wisdom and was composing soul-stirring lyrics. She mentally conceived Srivilliputtur to be Brindavanam, herself and her companions as gopis mentioned in Bhagavatham and the local Lord as Lord Sri Krishna and with this as background, composed pieces of thirty beautiful lyrics,

in which she sported herself along with her companions in seeking Krishna for companionship with them on the banks of Yamuna river. These thirty poetical masterpieces form what is now well-known as 'Tiruppavai', which is said to be the quintessence of the Upanishads, dealing with the soul's yearning to reach the Divine Fountain-head through the channel of Love—*prema*.

Kothai spurned the offers that her aged father brought for her, as she was determined to marry only the Lord of Lords, about whom she had all along been dreaming. The *Guruparamparai* details that the Lord of Sri Rangam, Sri Ranganatha, was so satisfied with this maiden's unalloyed devotion that He ordered His servants to bring her and her father to His presence in His own gold palanquin from Srivilliputtur. Thus brought, Kothai became exhilarated with the Divine vision of her beloved that she was absorbed into Him at the Holy of Holies at Srirangam and became One with Him-- and for the love and grace that she thus won from the Supreme Lord, she came to be known as 'Andal'. On account of her greatness, Kothai is deified and is enshrined in all Sri Vaishnavite temples on the left side of the deity and she ranks equal among the several consorts of the Lord. But her temple at Srivilliputtur—her birth-place—is of special importance, for here she is given a high ranking position, since she is installed on the right side of Lord Ranganannar, in which form she was beckoned to Sri Ranganatha's presence.

The temple of Sri Andal here is a huge one and was built by the Nayakkan rulers of Madura and particularly

by that great Tirumalai Nayakkar, who ruled in the seventeenth century (1623—1659), as he was a great devotee of Sri Andal. It was he that constructed the lofty gopuram that crowns the entrance to this temple, which rises to a height of about 170 feet possessing as many as eleven tiers with an equal number of Kalasams on top. Passing through several well-built mandapams and gateways, the dwajasthamba mandapam is reached. This mandapam is an exquisite masterpiece in Nayakkan school of sculpture and the numerous gigantic images set on the pillars that support this huge mandapam are works of exquisite art that reveal the greatness of our craftsman in plastic art, rich in detail with a wealth of precise composition and clarity.

Going inside, the main shrine of Sri Andal is reached where she is depicted as a very charming and bashful maiden standing on the right side of her Beloved Lord, Sri Ranganannar, who is portrayed as a lovely youth of bewitching beauty. On His left side stands the image of Garuda—the vehicle of Vishnu. In front of this shrine is a small but elegant stone mandapam, which has been completely covered with gold gilded plates. It was in this mandapam that the utsava images of the Divine Pair are brought every Friday for *abhisekam* and *asthanam*. A little to the north of this mandapam is the small well, at which Sri Andal is said to have seen her image after decking herself with the garlands intended for the Lord. In the second prakaram of this temple



Sri Andal with Sri Ranganannar on Thirukalyanam festival day

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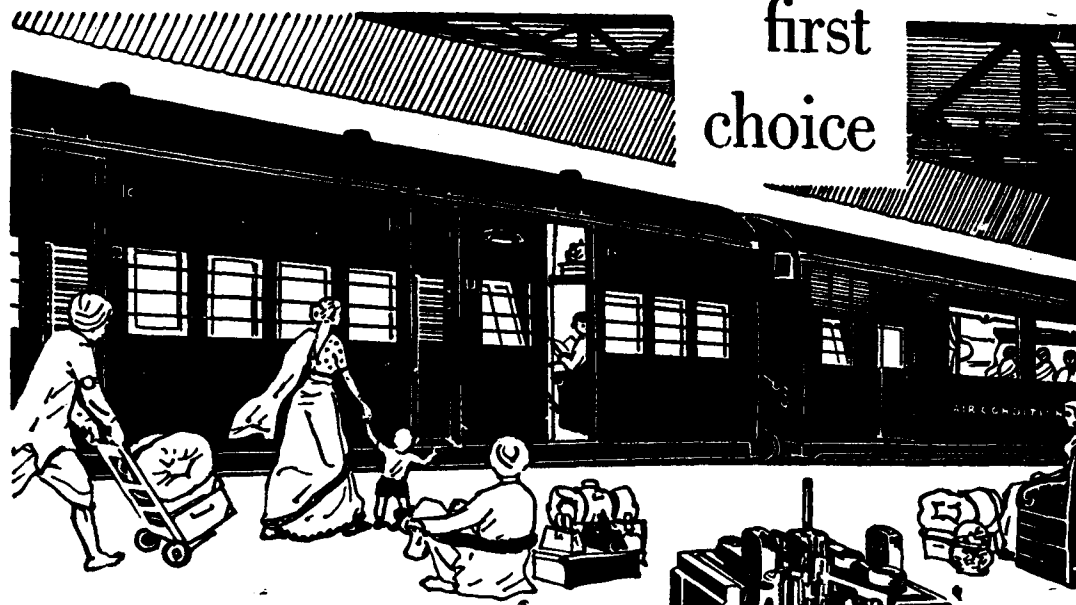
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is the Kalyana Mandapam in which the *Tirukkalyana Utsavam* of Sri Andal takes place on the sacred Tiruvadipuram day every year. On the western side, stands the ancient '*Tirupooranandaranam*' of the flower garden, which was reared then by the saint Periazwar and where Sri Andal was born. Here stands the shrine of the saint and a little beyond is the shrine of Sri Lakshmi Narasimhaswamy. Further to this is the ancient temple dedicated to Sri Vadapatrasayi, the original lord of this place.

The temple of Sri Andal is richly endowed and as such several festivals take place here throughout the year. The festival of Tiruvadipuram in the

month of Adi (July-August) for ten days and the Neerattam festival in the month of Marghazi (December-January) are the most important when the deity is carried on gold gilded vahanams, decked with costly jewels and raiments. Pilgrims from far and near attend these festivals and as one reputed author had said that it was during the month of Marghazi, when Tiruppavai is sung on each of the thirty days of that month that many pilgrims come to Srivilliputtur with prayers in their hearts and go on *Thai* first—the auspicious Sankranti day, fixing the weddings of their female issues taking with them the blessings of Sri Andal—the eternal Bride of the place.

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A RAILTALE

"PINCH" AND "STEAL"

OPRAIL

ONCE upon a time—and that time was yesterday and today—there were two citizens of this land, whom we may call Pinch and Steal. These two individuals seemed to have had a parallel development during their infancy, childhood, schooldays and eventual adulthood.

At an early age, while at school, they had made a wonderful discovery, but by no means original. For they found that many were born to give and others to take. Another delightful discovery was that the givers seemed to be far more numerous than the takers, and that the takers appeared to be equipped with a superior kind of mentality, but of the wrong kind.

So, giving less time to the acquisition of academic knowledge, Pinch and Steal applied themselves diligently and unsparingly to the art of taking, by relieving their school fellows of anything they were foolish enough to part with. In their copybooks they had often written out carefully and laboriously such admirable precepts as 'honesty is the best policy', but they had always itched to add the three letters 'dis' before the word honesty. They had evolved their own golden rule early in life, which they had never written out as a school exercise, and that motto written in their evil hearts was "What's yours is also mine."

When Pinch and Steal grew to manhood, they soon realised that there

were two ways of earning a living: to work hard and honestly for others and get paid miserably for it, or to let others do the hard work, and relieve them of the fruits of their labour. They did try the hard way first, but found the work much too hard to their liking, and the fruits somewhat meagre. After drifting from one job to another, they acquired some tricks of dishonest trade which were to be more profitable to them in the near future. Eventually, they decided to forego the pleasure of honest work and resort to what they considered the easier way. But it was not so easy, as during their school days they found it simpler to cheat school boys than to pit their cunning against adult cunning. However, the opportunities came.

One day Pinch and Steal decided to take a train ride. Of course, it never occurred to them that train rides cost money, so they boarded a compartment innocent of any such thing as a ticket. When the train started to move, they found themselves alone in a first class compartment, and rather luckily, the sole occupants. They took stock of their immediate surroundings and their two pairs of eyes lighted up with avarice.

Said Pinch to Steal, "Look! what we have here friend: lovely mirrors, brand new electric fans, beautiful round light globes, bathroom fittings, bulbs, switches and so on. And to think we've been sweating over the

problem to build up our business 'stock-in-trade'." Said Steal to Pinch rubbing his hands together with glee, "What a gold-mine friend Pinch. And no police or railway watch-dogs around, so what's to stop us. We must make another trip like this—without ticket of course—and come fully equipped with all tools for quick removals, not to forget some suitable receptacle to store away the treasure-trove, eh!"

One good point in favour of Pinch and Steal was that they were less men of talk and more of action. The campaign was planned and carried out shortly after. Using all their acquired cunning, they made several trips in railway coaches at times when they knew they would be alone, and on each trip they stripped the coaches of whatever fittings were easily removable. They soon discovered where they could have access to coaches in lonely yards and there do their steady job of pinching, stealing and removing whatever they could. And a time came when whatever they could not remove they deliberately damaged.

Quite often Pinch and Steal would have fellow travellers, when of course they posed as honest travellers too. On these occasions they would suddenly hear a curse when a passenger would shout, how the blazes can I do my hair in the lavatory when the mirror is missing. Or if evening was shading off into darkness and light was needed, there would be no light, because bulbs or switches were missing, or cables cut. Once again the passenger would curse all railways and railwaymen. When such adverse comments were passed, Pinch and Steal would be the first to agree and add, "what can you expect from these thieving, incompetent railwaymen? And they have the nerve to say that anti-social elements from amongst the free citizens of this country are indulging in all this theft of state property."

But individuals like Pinch and Steal cannot go on for ever. With each raid they make they get bolder and bolder, and more reckless and careless. A time comes when they go too far or over-reach themselves, and one day, they find themselves facing a couple of large policemen, with an invitation for a long and arduous sojourn behind bars and walls.



A RHAPSODY IN RHYME

E. S. MAHALINGAM

IN the fourth discourse of the Bhagwad Gita, the quintessence of the Upanishads and the innumerable scriptures of the Hindu Religion, Lord Krishna has said "Whenever there is decay of righteousness, O Bharata, and there is exaltation of unrighteousness, then I myself come forth." The Lord, continuing assured the Pandava warrior, that in every 'Yuga' he would take a birth as an avatar for the destruction of all evil-doers and protecting the pious and good men and firmly establishing the 'Dharma'. He has risen to the occasion more than once and kept his word. The Dasavatars (ten incarnations) are well known to be repeated.

While he has destructed the evil elements from time to time, he was not unaware of the situation, when the pious and righteous rishis, or the saints going astray at times. There were thousands and thousands of good rishis and men everywhere. Some were ever good even to the bad ones. Some were good at times. Many were still selfish and naughty and proud of the small achievements to their credit. They were illusioned by the Maya and while they prayed and sought the abode of God, they were being misguided into the wrong channels by these evil elements, like selfishness, temper, pride and carnal beauty.

Whenever such an occasion arose, it is said that the Lord came forth and inflicted on them, a penalty as a corrective measure, opened their inner

eyes and guided them into the path of righteousness. There are hundreds and thousands of such instances, mentioned in the great epics and other mythological works. The subject of this illustrated feature is one among them.

In Darugavanam, there were a number of sages who had achieved mastery over their self and lived a pious life with their wives. They performed great 'Yagnas' and were ever seeking to reach the Lord, through the path mentioned in the holy books. Yet they had not reached the stage to know and understand the difference between the truth and Maya. They were proud of their achievements, were blind to truth and many of them were misguided.

So, Lord Siva assumed the role of a beggar 'Bhikshadana', naked in appearance, full of charm and attraction. He took his 'Kapala' (Bowl) in his hand and went through the hutments of the hermits, begging alms from the wives of the sages. In this role, he made himself easily available to one and all in the forest. The 'Rishi Patnis' or the wives of the sages, though they had also mastered over the five senses, were magnetised by the beauty of the beggar Lord and followed him one after the other, though unaware that he was the Great Siva.

The Sages, when they saw their wives following the naked beggar, cursed him, but the curse had no effect on the mendicant. So they



The Great Mahadeva as Bhikshadanar

approached Brahma and asked him who the beggar was and why their curses had no effect on him. The Creator thereupon told them the secret

that they should see God in each and every object, animate or inanimate and leave their pride and have more control over their senses. He further explained that the beggar was no other than the Great Siva as 'Bhikshadanar'. Then they felt ashamed of their not having availed the opportunity given to them and returned to their rituals.

The story is simple. The South Indian sculptors of the Chola period were a set of able craftsmen. Many of them interpreted the great epic stories in stone in the temples built by them. One among them was inspired by this story and executed it on a grand scale in black granite and finished the group perfectly and in proper proportion.

The entire group explaining the theme was lying in a dilapidated temple and was transferred to the art gallery at Tanjore, for each and every one to admire the excellent beauty in stone.

The tableau executed in a size bigger than life itself and dramatically erected within the walls of the gallery outbeats the entire collection of the gallery, in grandness of scale and beauty and a visit to the gallery is worth for this group by itself.

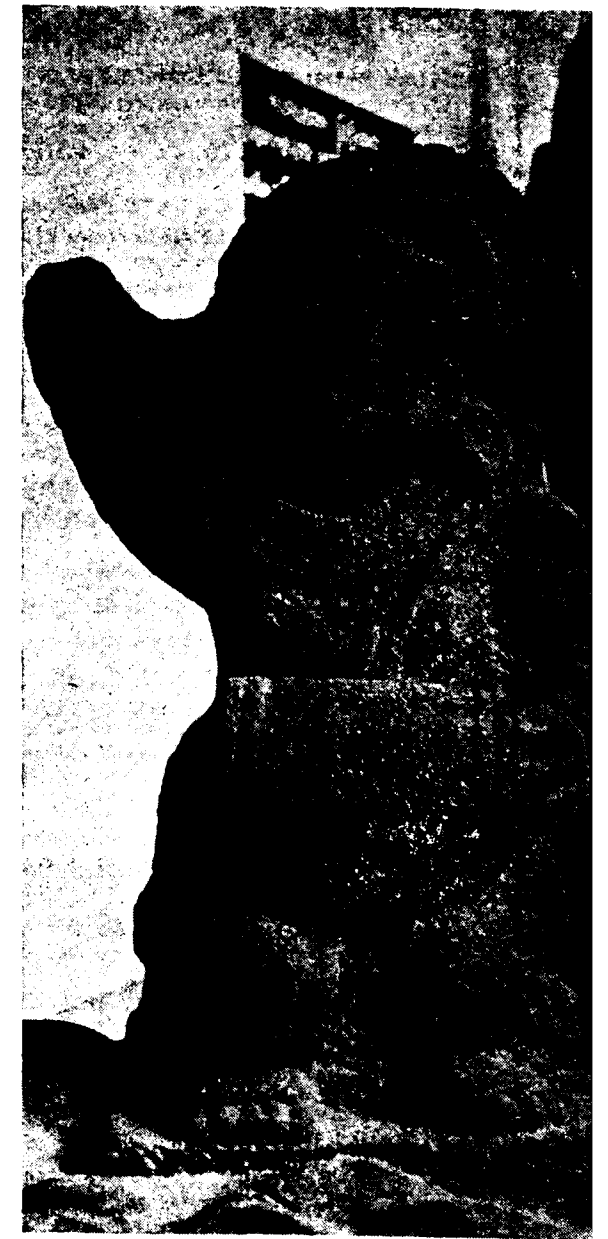
The Lord stands supreme in the centre with a sarcastic look, perhaps pitying the ignorance of the folks. He has a bowl 'Kapala' in his hand. He is holding an 'Udukku' (a small drum) in his left hand and the fingers of the right hand are playing it with a drum stick. If we carefully listen, we may perhaps hear the sound 'Thirin Thirin' emanating from the drum. A well worked crown adorns

his head. He is wearing sandals. A deer is at his feet feeding itself on one side and a demon is squatting on the other side. The face has a magnetic charm. On one side he is accompanied by the "Panchabhutas" or five demons, playing the drum, the cymbal and the gong. Thus the great Mahadeva is represented as 'Bhikshadana' with all his attributes and his gangs.

The bent right leg, at the knee, the drum in his hand being played rhythmically, the raised sandal and above all the very leaning posture, proportionate as it is, spells a charm in the minds of the onlooker.

The mendicant is Siva and has the Godly beauty in his face. Even the Devas were charmed by the beauty of the Great Siva. The wives of the sages were after all human beings. They were naturally enticed by the supreme beauty.

In the sculptural panorama, seven wives are represented. The mood of the seven wives, the posture and the facial expression speak amply of the Chola craftsmanship. One has lost all her balance and is shown leaning on the next woman. The eyes are downcast but stealthily enjoying the charm of the Lord. Her sari is unwinding itself and in her hurry, she is holding it from exposition. One of them came with a big spoon for giving alms but has forgotten the purpose in the illusion. In fact, the entire tableau has a peculiar magnificence and grandeur and is perhaps one of the most well executed group of an ancient Chola sculptor who had dedicated his life to the noble cause of temple art.



The attendant "Panchabhuta" of the Great Siva

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SOME MODERN TRENDS IN RAILWAY WORKING

V. K. STHANUNATHAN, B.Sc. (Hons.)

Railway Staff College, Baroda

FRESH methods are being adopted in all branches of Railway working to improve efficiency. The rail transportation machine is being "geared up" as a whole to the new high speed age of diesel and electric power and perhaps atomic power. The purpose of this article is to point out some of the modern trends in locomotives, signalling techniques, etc., and in new methods to improve the conveniences and comfort of railway passengers.

research and experience over several decades have contributed to making the steam locomotives more efficient in speed as well as in the capacity to haul heavy loads. From the first type of steam locomotives that were built when railways were opened in 1825 in England, various improvements have been made.

Steam locomotives are usually described by their type, their wheel arrangements and their tractive effort. A simple 3-figure system enables the wheel arrangements to be described. The figures separated by hyphens show the number of leading, coupled and trailing wheels in that order. The important steam locomotives now in use in India on different gauges are the following :—

LOCOMOTIVES :

In our country most of the locomotives are steam locomotives. Steam locomotives themselves have an interesting and fascinating history and

Class	Rail gauge	Notation	Diameter of coupled wheels	Boiler working pressure	Tractive effort	Total engine weight
WG	5'—6"	2—8—2	61½"	210 lb. sq. in.	38,890 lbs.	228,000
WP	5'—6"	4—6—2	67"	210	30,600	218,000
HPS	5'—6"	4—6—0	74"	180	22,590	
WM	5'—6"	2—6—4 T	67"	210	19,084	217,700
WL	5'—6"	4—6—2	67"	210	27,640	197,000
YP	3'—3½"	4—6—2	54"	210	18,450	128,100
YL	3'—3½"	2—6—2	43"	210	13,700	862,000
YG	3'—3½"	2—8—2	48"	210	23,450	129,500
ZB	2'—6"	2—6—2	34"	160	10,368	
ZE	2'—6"	2—8—2	34"	160	18,432	97,800

The haulage power of a steam locomotive is expressed as tractive effort in pounds. While a higher tractive effort will enable bigger loads being hauled, the tractive effort does not give any indication of the measure of the speed. The formula for arriving at the tractive effort is :—

$$T = \frac{85 \times p \cdot d^2 \times l}{100 \cdot D}$$

when—

T = Tractive effort in lbs.

p = Boiler working pressure in lbs. per sq. inch.

d = Diameter of cylinders in inches.

l = Length of piston in inches.

D = Diameter of driving wheels in inches.

85% of boiler working pressure is assumed.

It will be seen that the coupled wheel diameter forms the denominator of the fraction. Therefore if the other items, viz., cylinder diameter, piston stroke and boiler pressure are the same in two locomotives, the one with smaller coupled wheels will have the higher tractive effort. We, therefore, find small coupled wheels in goods locomotives where a higher tractive effort is needed. For express work, these small diameters would be unsuitable. Larger wheels carry locomotives further at every revolution and speed will be better with larger wheel diameters; but the bigger wheels would reduce the tractive effort unless the cylinder dimensions or boiler pressure or both should be raised at the same time. It will be

seen that WPs which are put on passenger trains on the BG have a larger wheel diameter and less tractive effort than the WGs which are put on goods trains.

The history of locomotive design is one of continuous experiment in improving the efficiency in all aspects, e.g., like generation and use of steam. Thus, the superheater elements enable more efficient use of the heat available. An interesting development can be seen in the Class 9-2-10-0 locomotive put on British Railways in 1954 with a boiler of Italian design known as Franco-Crosti. In the smoke box a second cylindrical drum is put in below the boiler proper. Feedwater for the boiler passes first through this drum which is equipped with tubes similar to those in the boiler. Exhaust steam and furnace gases instead of escaping through the usual chimney on the smoke box pass through the tubes in the drum. In so doing, the feed water, therefore, enters the boiler at a high temperature and the efficiency of the boilers for producing steam is considerably improved.

The steam locomotive requires replenishment of water at periodical intervals and heavier types of locomotives have tenders carrying large quantities of water. On Indian Railways, water supplies are replenished in the tender from water columns where the trains are detained for the purpose. The modern development, particularly in England, is to replenish water supplies at speed from troughs laid between the tracks on straight and level stretches of track. A scoop under the tender is lowered by a hand-wheel when approaching the troughs and dips about 2" into the

water. At speeds of about 25 miles per hour more than 2,000 gallons of water can be drawn into the tender tank from troughs of about 500 to 600 yards length. Water troughs enable trains to cover long distances without stopping, e.g., as much as the 392 miles run between London (King's Cross) and Edinburgh.

Apart from improvements to steam locomotives, the present tendency on railways in advanced countries of the world is to replace steam locomotives by electric locomotives or diesel or diesel-electric locomotives.

Electric locomotives work on the principle of motors. When an armature is pivoted in a magnetic field and a current passes through the armature a force acts on the armature which makes it revolve. The armature or a set of armatures or drums is mounted on a shaft carrying a pinion which meshes with a gear wheel on the driving axle of the locomotive or motor coach.

Electric trains are of two types, one, where rolling-stock is specially built as complete rakes in which certain coaches are equipped with motors, and wheels in the coaches are driven directly by the motors fitted up. The other type, particularly in the case of goods trains is when the train is hauled by an electric locomotive. Most of our electric suburban trains consist of coaches fitted up with motors and they are called multiple units, that is to say, trains hauled by motors fitted up in the coaches instead of being hauled by a separate locomotive. The advantage is that when extra carriages are put on,

additional power is gained because each unit includes one motor coach.

Electric locomotives are usually carried on two bogies with two or three axles all driven by their own motors. Inside the body, between the driving cabs at each end, are carried the electrical switch gear for starting, reversing and controlling speed and various auxiliary machines which include cooling arrangements for the motors.

Different means of picking up the current for the train are used according to whether the locomotive or motor coach is to operate from an extra rail or overhead wire. In England, many of the tracks have got additional rails for carrying current while the modern traction equipment consists of overhead wire arrangements. Driving controls on an electric locomotive are very easy to handle. Usually, there is an accelerating handle, there is a separate handle for reversing motors and another control which enables higher speeds to be attained and an electric braking control.

In England and in the electrified sections in our own country, till now direct current was being used for running electric trains but recently the tendency has been to use alternating current on the model of the electric systems in France. While the direct current sections were being usually operated at 1,500 volts the AC systems at 50 cycles per second will be operated on 25,000 volts.

The American Railways have been concentrating more on diesel and diesel-electric locomotives rather than

on electric locomotives. Diesel engines are so called because the principle on which they work was discovered by Dr. Rudolf Diesel who first built the engine, which works on the compression ignition system, in 1895. Locomotive diesels may operate on the 4-stroke or 2-stroke cycle. The compression engine does not require sparking plugs like a motor car engine for air in the cylinder is compressed to a degree which raises its temperature sufficient enough to ignite the fuel. The fuel is pumped into the cylinder in the form of a fine spray at the correct moment in the working cycle. The speed of the engine is usually controlled by varying the amount of fuel delivered.

For powers above 300 horse power usually the diesel-electric system is used in which the diesel engine drives a generator supplying current to motors geared to the driving axles. The locomotive is controlled by driving the generator at different speeds thus varying the voltage on the electric motors.

In shunting there are great advantages in having diesel traction because no power is consumed when the engine is not actually working whereas in a steam locomotive fire is kept going all the time when it is standing by in the yard. Frequent halts for refilling or watering are also not necessary. In fact, a diesel engine can work continuously over a week with one filling of its tank and only a short inspection each morning is required before the locomotive starts working.

Considerable advances in passenger train speeds have been made in the

United States with the advent of diesel engines. Nearly, 75% of the United States locomotives are now diesel and Canada also has been trying to introduce diesels. Faster running and more rapid acceleration together with shorter halts for servicing the locomotives *en route* enable very speedy run of trains. The Canadian Pacific Railway and the Canadian National Railways are now having diesel engines for their super-continental expresses. On the Canadian Pacific Railway one triple unit diesel locomotive makes a complete Montreal-Vancouver-Montreal run trip of 5,762 miles.

The search for improving the power for running trains is continuing and attempts are being made to introduce gas turbines for railway locomotion. The success of gas turbine in aeroplanes naturally led railway engineers to consider the possibility of its use for railway locomotives. In the gas turbine fuel is burned under pressure in a combustion chamber and the rush of high gases from the chamber act on turbine wheel in the same way as steam in a steam turbine. The gas turbine rotates at very high speed for example, 7,000 revolutions per minute and electrical drive is used to transmit the power to the wheels and generators are coupled to the turbine through proper gearing instead of being directly driven as in diesel-electric locomotives. Gas turbine locomotives have already been introduced on English Railways and on the U.S.A. Railways.

Below is given the type of locomotives in use in some of the important countries of the World.*

TYPES OF LOCOMOTIVES IN STOCK IN 1956

COUNTRY	Steam	Electric	Diesel or Diesel Electric
France	6,100	1,064	869
Germany	10,624	524	188
Switzerland	232	826	32
U. K.	17,960	71	456
Canada	2,855	44	1,472
U.S.A.	4,343	682	25,738
India	8,554	72	75
Japan	4,966	633	20

* From Sampson Low's World Railways 1956-57

It will be seen that the steam locomotive is giving way at an accelerated pace to electrical and diesel locomotives. In the field of electrification one of the outstanding features of new programme in many countries is the rapid development of high voltage 50 cycle alternative current systems even in countries which already have considerable route mileage electrified at a low voltage direct current. The use of 50 cycle electrification offers certain economies compared with direct current systems not only in the initial capital outlay but also in actual working expenses. British Railways are proposing to electrify nearly 8,500 miles on trunk routes and the French National Railways who were the first to adopt this frequency have already electrified a large part of their main lines. The Portuguese Railways, the Japanese National Railways are also adopting this. In our country also the Calcutta Railways' electrification schemes are to be on the 50 cycle AC system.

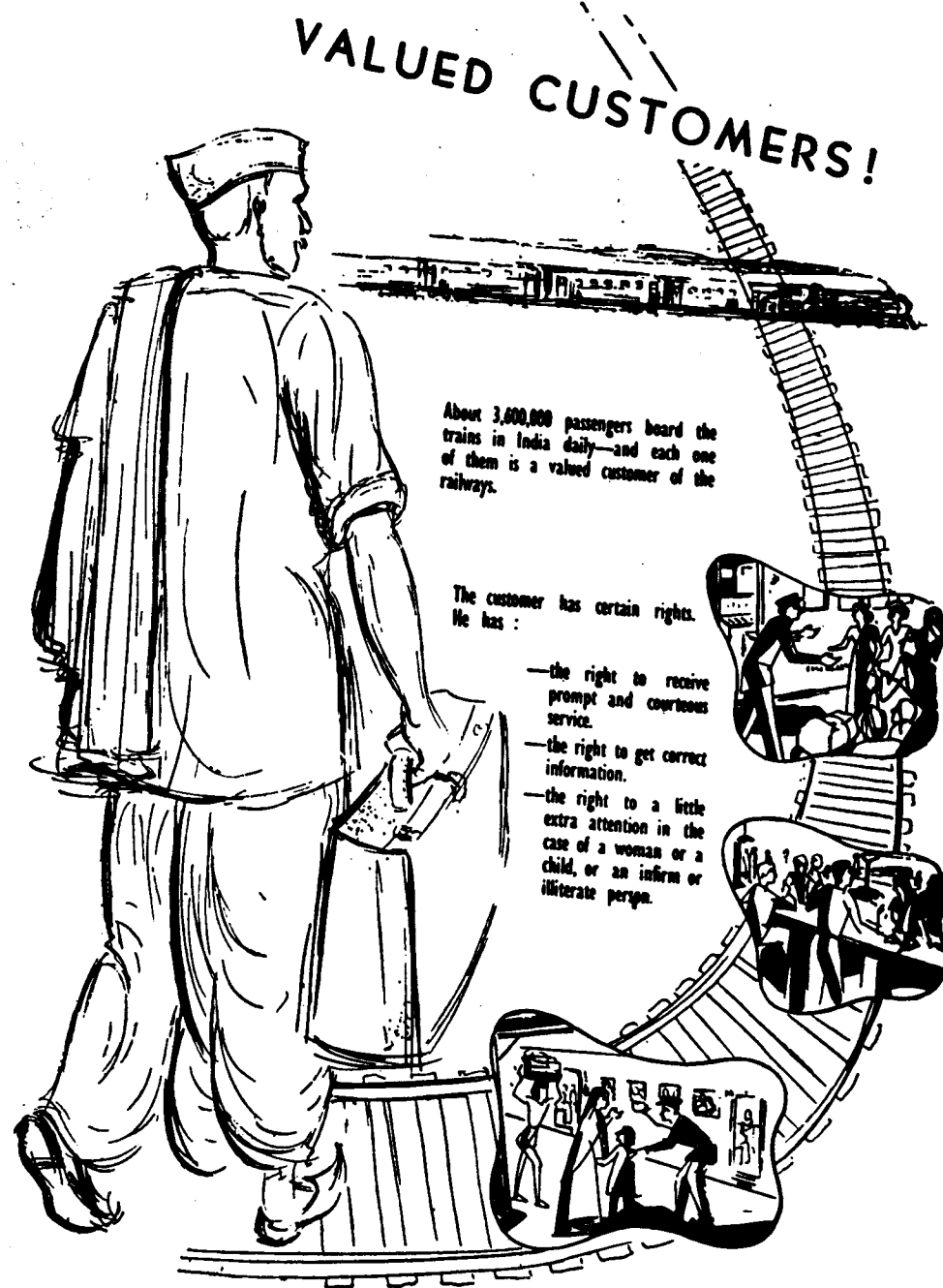
All railways have got a high electrification programme. In Europe the general tendency is to electrify the main trunk routes, use diesel loco-

motive for goods trains on the remaining lines and diesel powered rail cars and train rakes for passenger operation on non-electrified lines. The U.S.S.R. have a big electrification programme. They envisage electrification of 5,000 miles during the next 5 years and their plans are to electrify upto 25,000 miles in the coming 15 years. In the U.S. the electrified route length is about 2,000 miles which is only about 1% of the total route length of the Railways. In India we have about 244 route miles of electrified lines and have a programme for a further 1,060 miles. Japan has already 1,219 miles of electrified lines and is embarking on a 10-year programme of electrification of about 2,050 miles. With the rapidly increasing production of electric power from Hydro-electric schemes, from thermal power stations and in the not too distant future from atomic nuclear power plants it can be expected that, in due course, greater mileages of track will be electrified in all countries of the world.

The largest user of diesel locomotive is the U.S. which has nearly 26,000 diesel locomotive units. This is in addition to diesel powered rail cars.

In spite of these developments, countries like ours will have to continue to use steam locomotives for a long time because electrification requires import of large quantities of equipment from abroad and as far as diesel locomotives are concerned, we are not self-sufficient in diesel oil. Availability of cheap coal makes it necessary for us to continue to use steam locomotives in preference on many sections.

(To be continued)



Issued by SOUTHERN RAILWAY

THE PASSION PLAY AT OBERAMERGAU

C. H. DE SOUSA

OBERAMERGAU is really a small village in the Bavarian Hills of Germany, which has gained its fame because of the Passion Play which is enacted there once in 10 years.

The Bavarian country is as beautiful as it is rugged and the picturesque costumes of its people, their homeliness and simplicity add much charm for the visitor.

As I was a pilgrim for the Holy Year 1950, visiting the principal shrines of Catholic worship in Europe, and as the world famous passion play was scheduled to be held that year as a special case, I decided to see it. I had seen two passion plays got up by the Jesuit Fathers of Bombay and although they were lavish and magnificent I still had a desire to see the genuine article at its home in Oberamergau.

Somehow or other I got the notion that while the Passion Play in Bombay was held on a stage, the one in Oberamergau would be held in the open in the natural scenes and the beautiful countryside of the Bavarian mountains. In this I was a bit disappointed when I discovered that the passion play at its original home was also enacted on the stage.

I managed to secure a ticket for the Passion Play at Oberamergau through a travel agency in London and was therefore booked for the trip there in the first week of September 1950.

The last big town where I spent the night was Munich and here I was able to collect all the information about the Play and make the acquaint-

tance of fellow travellers bent on the same mission.

After going some miles from Munich to Murnau we had to change trains and get into the smaller train which was to take us up the Bavarian hills. In a train similar to the narrow gauge up our hill stations we covered the distance of 30 miles in about 3 hours and arrived at Oberamergau at about 11 A.M. on the day previous to which we were to see the play.

Apart from the beautiful scenery what struck us most was that the whole of the population had prepared itself long in advance for the play, the men allowing their hair and beards to grow and even the small boys of 10 and 12 had long hair.

There is an interesting story related about one of these small boys. It seemed that an American lady who had her luggage moved from the station to her hotel by these little boys and girls paid them the same rate in spite of the fact that the boys apparently carried the heavier luggage. In the course of the conversation which was told to me by an American Gentleman at my hotel who knew German, the boys were discussing among themselves "the lady thinks that we are all little girls in spite of the fact that we wear boys costumes because we have let our hair grow. How are we to let them know that we are boys and should be paid more than the girls?"

It may be well if I give the reader at this stage an account of how the Passion Play at Oberamergau originated.

It seemed that in the year 1633 the village of Oberamergau was visited by a plague which began to take a tremendous toll of its population. No medical measure taken appeared to have the slightest effect of diminishing the death-roll. Eventually the Parish Priest and the people of Oberamergau on their bended knees prayed to God to spare them and promised that if they were spared they would enact the Passion of Christ once every 10 years. Once this vow was taken, the plague subsided and the people of this tiny village have ever since kept their promise in performing the play once in 10 years and sometimes oftener.

A year before the play is fixed to be performed the whole of the town population meet and select a Working Committee who will organise all matters connected with the Play. At a subsequent meeting the various actors and actresses who will take part in the play are chosen and of course it is considered a great honour to be chosen for the roles of Christ and the Blessed Virgin which is done by popular choice.

The choice of the Blessed Mother in this Year's play was perfect. She was a young girl with a very delicate rose petal complexion and the most exquisitely chiselled features approximating to the most beautiful pictures of the Madonna by the world famous artists.

As soon as the characters are chosen, they immediately start growing their hair and beards to represent the twelve apostles. The high priests and the members of the Sanhedrin, Herod, Pontius Pilate, Mary Magdalene and the various other smaller characters start thinking, learning and living their parts, until the time of the play

comes, when intensive rehearsals are held. By the time the play is performed each actor and actress is word and figure perfect.

I arrived at Oberamergau on the 2nd of September 1950 and went straight to my hotel where I was made comfortable and given a meal. The hotel was actually the house of Anton Frimbergor temporarily converted into a hotel to accommodate 6/8 people. The family was quite attentive. It was after arriving here that I learnt that the play would not be held in the open but in a very large hall starting at 8-30 on the next day.

At the appointed time I was ushered into a huge big hall with a dome shaped roof and no pillars, large enough to accommodate about 5,000 people. The state was about 150 feet long and about 50 feet wide, with various scenes which were changed from time to time.

At the appointed hour about 60 men and 60 women all dressed in a uniform which is at once plain and attractive enter from either side of the stage and when they are assembled begin to sing various parts from well-known music from classical Catholic authors on the Passion. The singing takes about 15 to 20 minutes and then when all these people have left the stage the scenes of the Passion starting with the entry of our Lord into Jerusalem on Palm Sunday. In this scene practically 50% of the town population young and old take part waving palm leaves before our Lord as he enters Jerusalem and shouting "Hosanah to the Son of David."

In this way the singing and the scenes of the passion are repeated one

after another without interval for a period of 4 hours at a stretch, and because of the very long rows of seats it is impossible to leave one's seat to go out and stretch ones legs.

The play starts again in the afternoon at about 2-30 and continues without an interval till 6 P.M. when the whole Passion Play comes to an end.

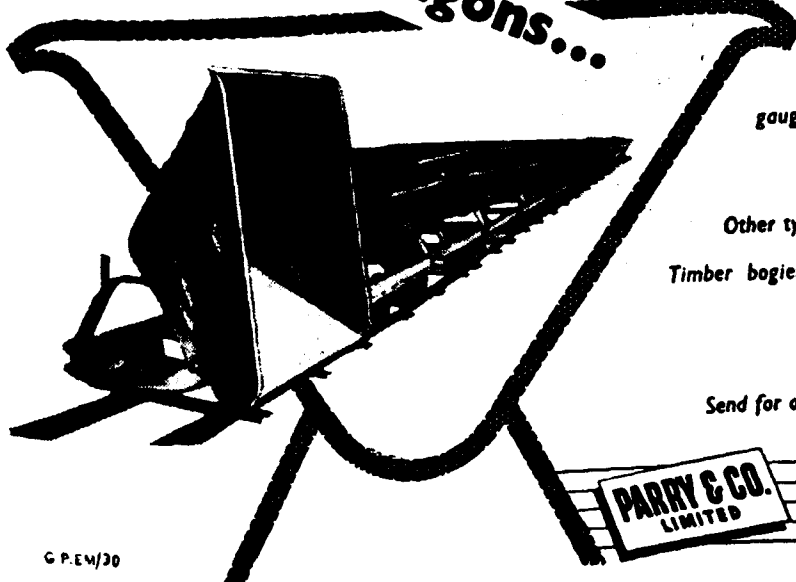
Having seen two excellent Passion Plays in Bombay I was in a position to compare scene by scene and in the evening of the play I sat down at my hotel and wrote a 6 foolscap pages of appreciation of it for the Committee and made certain suggestions how certain of the scenes could be made more impressive. At the end of about 3 months on my return to India I received a letter from the Committee thanking me for the suggestions and stating that they try to make the

least use of artificial lighting and aids but that they would bear my suggestions in mind for the next Play.

At this time in Oberamergau there are a number of exhibitions of religious art and music and concerts given by well-known artists and I was a regular visitor to all these. As I visited all the concerts without fail my entrance fees were reduced by the authorities on each occasion because of my appreciation of their efforts.

I visited the interesting country side of the Bavarian Hills and some of the places of interest as for instance the factory which makes some of the best violins in the world. Some of the Churches in this area are masterpieces of the Rococo style of interior decoration which was indeed a pleasure to behold.

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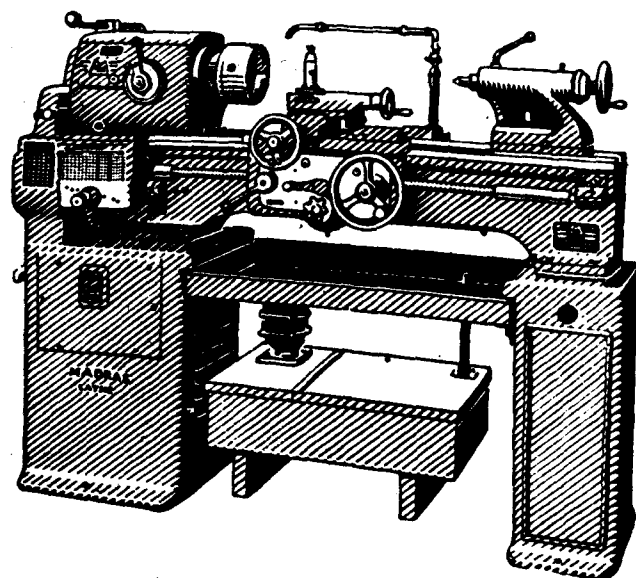
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'OLYMPICS'

T. P. S. KENT

"Olympia and the Olympics symbolize an entire civilization superior to countries, cities, military heroes or even the ancient religions."

OLYMPIA, is a name gone down in history for the foundation of modern Olympics, owes its origin to Olympia in ancient Greece. There were numerous treasure houses, temples and religious buildings in Olympia, but the most important building was the Olympium, which housed one of the seven wonders of the world—a huge ivory statue of Zeus with robes of solid gold. The figures of the Greek god was forty feet high. The most important building for the athletes was the gymnasium with its long colonnade—covered track. The main floor of the gymnasium, called the palaestra, was about 250 feet square and was like our present-day gyms except that it had sand as flooring. Here the pancratium contestants practised under the supervision of trainers and judges for the month preceding the actual games.

The Greek thoroughness in athletics antiquity may have surpassed even that in England in the early part of the twentieth century or that in the United States today. According to records all the athletes followed a strict regimen which began early and ended late. After a breakfast of fermented bread and grape juice, a morning of punishing exercises was followed, with no stop for lunch—by more training in the afternoon and a mighty dinner. In the earlier Olympics, vegetables, fruits and plenty of cheese comprised the menu. Later, fish and meat appeared. According to some original sources,

Mile of Grotona ate a boiled ox at one sitting. Although there may be some exaggeration in this story, there is evidence that the Olympic athletes of ancient Greece average over six pounds of meat per man per dinner. From the earliest days, alcoholic beverages and cold drinks were taboo.

The ancient Olympics started with the Olympic Oath taken by the athletes and judges before the statue of the God Zeus. The athletes swore to observe the rules—the judges swore to be fair—and, all prayed for personal success and the success of the games. Then came the parade around the stadium, the contestants grouped by city or country. Trumpets were blown at the beginning and at the end of each event. A branch from a palm tree was placed in the hands of the winner and a wreath made from the leaves of the wild olive trees was put on his head. A closing ceremony at the end of the games always featured prayers of thanks.

For 1,300 years there was a lull, but the silhouette of the Grecian temple had never been lost, although the stadium with the athletes and audiences had disappeared. In 1829, the French Government and later, in 1875, the German Government, began to dig Olympia out. In 1881 the ruins, still projecting a golden era in history, were completely uncovered, and there is no doubt that the scientists and historians dug up not only the secrets of the site of the ancient Olympics

but their spirit and glory as well, and that the renewal of this spirit led to the many efforts towards a renaissance of the Olympics, first by the Greeks in 1859 and 1870—which failed—and then by the French in 1892.

Thrilled by the romance and glory of old Greece and by the Olympic spirit of drawing people together through sports, Evangelios Zappas, a Greek living in Rumania, first contributed a large sum of money, and, on his death, following the failure of the first Olympics, willed money to re-establish the Olympic games in Greece. The Greek Government supported Zappas and accepted the money, but ineffectively organized the games. Both the resulting games were good examples of what not to do! The

1859 games were held in a square—Place Louis and in the streets of Athens, as no stadium was available. Confusion and chaos resulted. Although the king and queen and many dignitaries attended, spectators were trampled on and injured by mounted police trying to keep the streets open for contestants, and athletes were arrested for acting like spectators. Boys and old men entered the competitions at the last minute and actually ran in some of the preliminary heats in order to get through the police lines. A blind man presented himself to the officials for one of the events, using the opportunity to sing a song to the multitude, for which he was not unrecompensed. One of the long-distance runners dropped dead in the two-mile race. There was chaos, there

SOUTHERN RAILWAY

TENDER NOTICE

Sealed tenders in the prescribed form will be received by the Chief Engineer, Southern Railway, Madras-3, upto 16-00 hours on Tuesday the 26th August 1958 for construction of a new building for Divisional Offices at Olavakkot.

Tender form can be obtained from the Chief Engineer on production of a receipt for Rs. 10 paid to the Chief Cashier, Southern Railway, Madras-3, or to any Station Master on the Southern Railway. Under no circumstances will the amount paid for the tender form be refunded. The tender form is not transferable.

The tender forms will be issued only upto 15-00 hours on Tuesday the 19th August 1958.

Approximate cost of Contractor's portion of work is Rs. 6,13,379. An earnest money of Rs. 18,400 should be paid before 15-00 hours on Thursday the 21st August 1958.

Further particulars can be had from the Chief Engineer, Southern Railway, Madras-3.

was confusion at the 1859 Olympics which were held thirty-seven years before the first officially recognized modern Olympiad. Though unsuccessful, they were a logical connection between the dim past and the uncertain future.

For the 1896 Olympics held at Athens the Greek Government spent \$100,000 in addition to the Zappas money to make possible the First Olympics. George Averoff, a rich Greek merchant in Alexandria, had been the donor of \$390,000 with which was restored the Panathenaic Stadium. The King of Greece was so exuberated with the success of the first Olympics, that at the close he proclaimed "May Greece be destined to become the peaceful meeting ground of all nationalities, and may Athens become the permanent seat of the Olympic games."

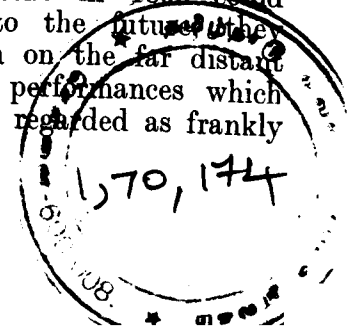
Modern Olympics has not changed much throughout the decades. There is very little today that is completely new in track and field events. The original standing broad jump usually from a marble step into a loose sand pit has led to the running broad jump; the triple jump now called the hop-step and jump; and later, the jump with the help of a pole—to the pole vault. Since primitive man had to burdle stones and bushes as he ran away from a mammoth, hurdle races were also added.

By far the most exciting event was the marathon. The contest was run over the exact course that Pheidippides had taken in bringing the news of the Greek victory at Marathon to anxious Athens. There were twenty-five starters. Spiridion Loues was a Greek

shepherd. He had heard on the hills, as he watched over his sheep, that athletes from all over the world were coming to Athens and that his country would have a difficult time upholding the tradition of the past. A tireless runner, although physically a very small, short man, he saw himself as the one hope of Greece to win the marathon. Baron de Coubertin, a great public relations expert, told the world that Loues spent two nights before the race praying and that the day before the race he fasted. In any case, he was one of the starters the next morning. The favourite, Lermusiaux, a Frenchman, led for almost half the race. Then he was passed by Arthur Blake of the Boston Athletic Association, who had never run twenty-six miles before. After nineteen miles, Blake had to quit. Loues, who had kept a steady pace, was the next to take the lead. When three miles remained to go, Loues, was still in the leading position. Word was sent ahead to the Royal Box and to the crowd—a Greek crowd who were waiting in a frenzy of enthusiasm. An uproar burst as Loues trotted into the stadium. To make the day even more glorious for Greece, a Greek was second and a Greek was third.

The persistent enthusiasm of Baron de Coubertin to revive modern Olympics had triumphed over every conceivable opposition. The dream of this idealistic Frenchman had become a reality. If those who thronged the Stadium at Athens in 1896 could have looked into the future they would have seen on the far distant horizon athletic performances which they would have regarded as frankly quite impossible.

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FOREIGN EXCHANGE REQUIREMENTS AND SOUTHERN RAILWAY

K. SRINIVASAN

THE Second Five-Year Plan involved, even on the initial estimates, heavy foreign exchange expenditure. It provided for a relatively low level of food imports. These estimates have turned out to be on the low side. The foreign exchange cost of some of the projects in the Plan has gone up, and there have been additional demands on the country's foreign exchange resources, e.g., for larger food imports and defence. A major factor to be borne in mind in this connection is that several of the new industries started in recent years depend for maintaining their output levels on imported raw materials and components. The allowance made in the balance of payments estimates for such imports during the Plan period has proved inadequate.

In view of the difficult foreign exchange situation, the allocations of available foreign exchange re-

sources are being made in terms of the 'core' projects. Efforts to secure assistance from abroad have also been directed to meeting the needs of the 'Core' projects, i.e., the steel plants, coal mining, railways, ports and certain power projects. These projects, it is felt, are vital from the point of view of future development and should be seen through as a matter of first priority if the necessary foreign exchange resources could be raised.

In the first two years of the Second Plan the progress has been so swift that the difficulties in the situation are noticed. Some of the 'core' projects are already in an advanced stage of execution and have to be completed as early as possible, so that their benefits do not get unduly delayed. In addition, projects linked up directly to external assistance have to be proceeded with.

	Likely actuals for the first three years of the Plan				Estimates for the last two years 1959-60 and 1960-61	Total 1956-61
	1956-57	1957-58	1958-59	Total for three years		
(in crores of rupees)						
1. Domestic Budgetary Resources :						
(a) Balance from current revenues.	139	150	150	439	320	759
(b) Railways' contribution ..	34	45	50	129	121	250
(c) Loans and small savings ..	200	127	217	544	440	984
(d) Unfunded debt and miscella- neous capital receipts ..	(-) 14	(-) 25	28	(-) 11	40	29
Total ..	359	297	445	1,101	921	2,022
2. External Assistance	38	100	300	438	600	1,038
3. Deficit Financing	238	464	215	917	283	1,200
Total resources outlay ..	635	861	960	2,456	1,804	4,260

On the basis broadly of the first three years' trends and taking into account some improvement in receipts under-loans and small savings, the resources available for the two years 1959-60 and 1960-61 may be placed at Rs. 1,804 crores as compared to the requirements of Rs. 2,344 crores. This, it may be noted, already assumes external assistance of Rs. 300 crores for each of the two years.

The Contribution of the railways has been rising steadily over the first three years of the Plan. The estimates in the table above for the next two years of the Plan postulate a step-up in this contribution to Rs. 60 crores each year as compared to Rs. 50 crores in 1958-59.

As regards external assistance a total of Rs. 600 crores for the last two years of the Plan is assumed. This may be compared with the total availability of Rs. 438 crores over the first three years. The five-year total of external assistance on these assumptions comes to Rs. 1,038 crores, which is Rs. 238 crores more than was envisaged in the initial financing schemes for the Plan.

Out of the total outlay of Rs. 1,125 crores for the various programmes under the railway plan, approximately Rs. 425 crores will be required in terms of foreign exchange. For locomotives Rs. 81 crores, wagons 82 crores, rolling-stock of special type 125 crores and steel Rs. 137 crores. The foreign exchange requirements are mainly for special types of stock like electric and diesel locomotives and special wagons.

The Southern Railway is assisting in the procurement of foreign exchange

by promoting development of iron ore export. On the Southern Railway ore traffic has shot up nearly two and a half times—from 3.61 lakh tons in 1951-52 to 8.85 lakh tons in 1956-57. This has naturally put a severe strain on the line and clearance capacity of several sections and harbour terminals. The problem was aggravated by the closure of the rail route to Mormugao (in Goa) in July 1955 and the subsequent diversion of traffic to Indian ports. Plans are now in hand to further develop rail line capacities. A Rs. 2 crore scheme has been drawn up to increase the line capacity on the Hospet—Guntakal and the Guntakal—Madras sections to enable movement of one million tons of ore per annum to Madras Port.

The expansion of mining development from 1951-52 to 1956-57 indicated by a rise in output of all ores has thrown a considerable burden on the Southern Railway and caused considerable congestion at the east coast ports of Madras, Vizagapatam, Cocanada and Masulipatam, especially since November—December 1955, when, for political reasons, the Londa—Mormugao railway was closed.

The difficulties were line capacity of Hospet—Bellary and Guntakal—Arkonam sections, the transshipment capacity of Guntakal—Bezwada and Bezwada—Masulipatam sections. Until the middle of 1956 only 28 wagons per day of iron ore were being transhipped from Metre Gauge to Broad Gauge at Guntakal. Since then, however, the capacity has been diversified for transshipment of 50 Metre Gauge wagons per day and works are in hand to step up the transshipment by 25 wagons more per

day. Even general transshipment capacity at Guntakal is being increased from 2.56 lakh tons to 3.83 lakh tons per annum. The present capacity for the movement from Metre Gauge portion of Bellary area to the four ports, viz., Madras, Vizagapatam, Cocanada and Masulipatam is 4.31 lakh tons. When the increase in the capacity via Guntakal traffic is achieved, this capacity is expected to be augmented to 5.58 lakh tons. As clearance capacity of Bellary—Hospet section is less than the volume of ore traffic from Metre Gauge side the said traffic is to be diverted to the Broad Gauge stations like Guntakal, Timmanacherla and Gooty. The clearance capacity for these Broad Gauge stations is 4.02 lakh tons per annum. Thus, the combined Metre Gauge and Broad Gauge capacities for ore from that area are :

Metre Gauge 4.31 lakh tons.

Broad Gauge 4.02 lakh tons.

Total capacity being 8.33 lakh tons.

This is expected to be increased to 9.6 lakh tons per annum.

As for rail capacity available, the movement of ore at different sections of the Railway totals to 14.72 lakh tons per annum.

Regarding the estimated capacity of the Madras Port at present, it is 4 lakh tons per annum, as against these facilities for moving over 6 lakh tons by rail at Madras are available on the Southern Railway. In order to cope with the traffic brought by the Railway and also to cope with the proposed increase in traffic in

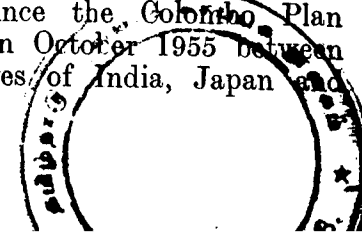
view of the encouragement for sending ore via ports out of India to Japan, Holland, Yugoslavia, Poland, Czechoslovakia and Denmark, it is necessary to increase the Madras Port capacity. A separate yard has already been laid on the foreshore of the present Madras Harbour, and some other works have been executed.

Speaking on 22nd October 1956, when the Hon'ble Minister for Railways & Transport visited Madras Port, the then General Manager of the Southern Railway said that they were making a lot of flat wagons out of old and condemned carriage bodies for the transport of steel. A dump also has been constructed for the storage of steel materials not immediately removed. The export of iron ore was 2 million tons annually. The final target was about a million tons. The Railway was making arrangements to move this quantity into the harbour in target period and these wagons bringing in iron ores would be available for moving the imports in the return direction.

Iron ore export from India to foreign countries, especially to Japan is a source for earning foreign exchange.

As for Masulipatam Port served by the Southern Railway, daily about 20 wagons of iron ore are being received and dealt with for export.

India and Japan have been negotiating a joint project for improving the export of iron ore from India to Japan, and discussions have been going on since the Colombo Plan Conference in October 1955 between representatives of India, Japan and U.S.

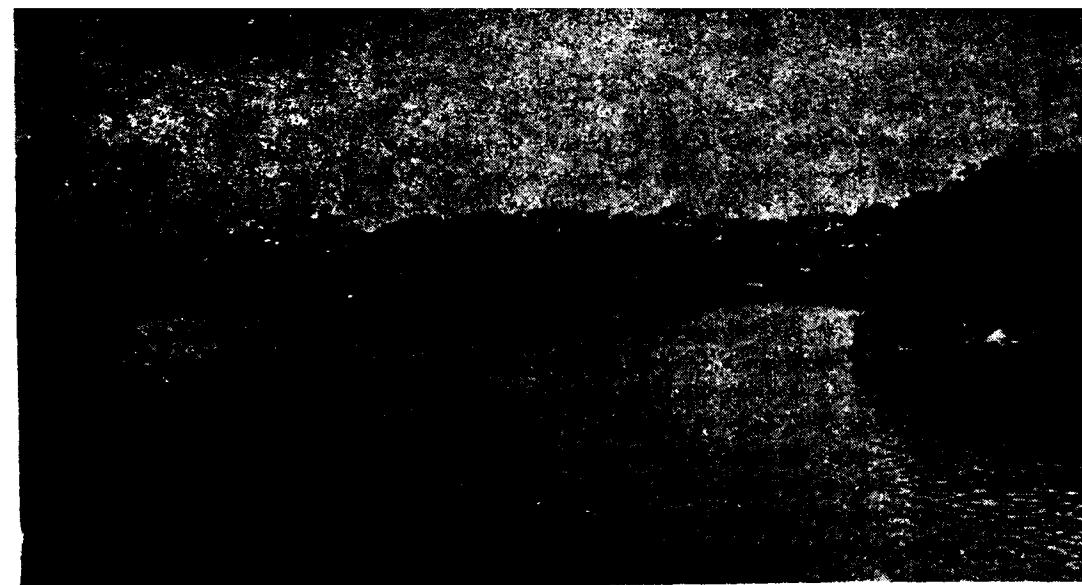


After detailed discussions and examination of the feasibility of the railway constructions in the area involved by a firm of well-known American consultants, negotiations were undertaken with the representatives of the Japanese steel industry last year. An agreement was reached in March 1958 between India and Japan for the undertaking of the project, estimated to cost on the whole about 67 million dollars. Of this 32.5 million dollars represent the foreign exchange component and 34.5 million dollars local currency requirements.

The Government of India is to bear the entire cost of the project in Rupees. Japan has agreed to make available credit up to eight million dollars in yen for purchase of necessary equipment in Japan. The U.S. Government has accepted the project as eligible under the Asian Economic Development Fund and agreed to finance foreign exchange expenditure upto sterling 20,000,000. The

American loan is to be used for the acquisition of commodities and services required for the improvement and expansion of railway and port facilities allied with the ore project. A 111 mile rail line between Sambalpur and Titlagarh is expected to be constructed and a rail link of approximately 25 miles installed to connect the ore site with the south-eastern railway and the wagons and engines provided to permit rail movement of the ore from Kiriburu to the port of Visakhapatnam. The port and harbour facilities at Visakhapatnam are also to be expanded.

As it is, a portion of the ore traffic from Southern Railway is finding its way out from Visakhapatnam Port. Thus it is clear that by transport of iron ore on the Southern Railway, the export of the same *via* ports like Madras, Masulipatam, etc., served by the Southern Railway, foreign exchange for Second Plan is being procured.



VEDANTHANGAL BIRD SANCTUARY

G. S. RAJU

LOCALITY AND HISTORY :

VEDANTHANGAL is a village in Madurantakam Taluk in the Madras State, 54 miles away from Madras on the Madras-Trichy Trunk Road. The Vedanthangal Lake occupies 300 and odd acres. In the middle of the lake there is a grove of about 550 *Barringtonia acutangula* trees. When the lake is full, the trunk will be submerged in water while the branches with leaves alone will be visible above water. It itself is a feast to the eye. It is believed that birds from all over the world are found there for they get their food in abundance and conducive for breeding and the most important reason is that it gives natural protection to the young ones. These birds nesting at Vedanthangal do not nest in isolated colonies, but promiscuously—each nesting tree holds several species. They build their simple stick nest close together on top of the trees.

This annual breeding colony in the heart of the irrigation tank has been going on from time immemorial but only now it has attracted public attention. Shooting of these denizens of the lake within a radius of 20 miles of the tank is prohibited.

BREEDING :

The home of a bird is always taken to be the place where it breeds. For a period varying from four to five months during the year, *i.e.*, from November to March, is the breeding time. At the height of the breeding season, some million birds and their young ones occupy the nesting colony. May be in India there are many other sites for the water-birds. May be some of them larger too but nowhere else can we hope to see so many birds, in so small an area. It is this congestion of the breeding birds so close to humanity and so plainly

visible from the tank bund that makes Vedanthangal spectacular and unique.

APPROACH TO THE SIGHT :

From the grand Southern Trunk Road, a road branches off at mile 47 and this is called Uttaramerur road. As you enter the approach you will find a mango grove on the right. If you go cautiously without scaring the locality you can see in the innocent jungle Babblers or popularly called "Seven Sisters." Then you reach a small scrub jungle called Valluvapakkam Reserve. Here you will be greeted by a covey of quails and Partridges emerging from the bushes in search of food. On the road side bushes and telegraph wires you will see well groomed and handsome green Bee-eaters doing quick twists and turns on wings as they fly to swoop on the winged insects with unerring accuracy. If you have a keen eye sight you can see the Indian courser, a most beautiful looking bird. You can see King crows or Drongos, jet Black-birds, and Blue Jays in single or in pairs as if in meditation and clusters of Mynas flitting from bush to bush making a terrific noise. You will also meet in the plains Skylarks, Finchlarks and parties of Red wattled lapwings. After passing over this you take the road to Vedanthangal lake. The flora on both sides of the bund is interesting. You will find a Babul tree with the most ingenious weaver birds. On the shady groves and delightful bowers you will see the golden Oriole with beautiful yellow and black colour and a red beak to match the environment shooting out of the green foliage. It is a beautiful songster and good whistler singing a familiar song "Did-you-do-it" in quick

succession but she is extremely a shy lady. Over the palm tree you can see the golden backed Wood Peckers going round and round the trunk in creeper fashion in search of insects. If you look carefully into the cane brakes below the bund you will find another beautiful bird called Indian Pitta of the size and shape of Brahmini Myna with multicolours. On a walk round the lake you will come across the common King Fishers and the piped King Fishers performing acrobatic feats, Grey Wag Tails, Hoopoes, Robins, Bush Chats, Marsh Barriers, Shrikes, Swallows, Koels, Parakeats, Doves, Sunbirds, Rivertern, Vultures, Crow Pheasant, Blue Rock Pigeon, Tailor Birds, Teals in large flocks, Sandpipers, Yellow Wattled Lapwings, Terns, Grey Pelicans, Black winged Stilts, Coots, Crows, Egrets, Herons, Cormorants, the Shag, the Darter, Open Bill, the Spoon Bill, the white Ibis and hordes of other birds. In the midway you will hear a call tuk-tuk-tuk from a solitary tree; this is the crimson breasted Barbet familiarly known as 'Cooper-Smith.'

VISITING TIME :

The best time for visiting the Vedanthangal Bird Sanctuary is in the morning, preferably before eight or late in the afternoon. During the day majority of the birds disperse to the adjacent tanks in search of food and they begin to arrive in thirties and forties and sometimes more in the evening at about half past five, within a short time before dusk all the trees are crowded with birds and

(Continued on page 61)



THE ELEVENTH BIRTHDAY

15th AUGUST 1958

On this day eleven years ago
Voice of IND did rent the sky
As Free and Freed in curt ego
With Freedom torches held in high
With conches blowing soft and gay
Announcing birth of babe Freedom
That grows sturdier day by day
With choicest grace from HIS KINGDOM.

Oh ! ye, bells ring out in full till hills resound your chime,
All trumpets, bugles sing chorus with drums that keep the time,
Oh ! ye, artists tinkle, gingle in best of parts you knew,
Scientists, Statesmen, Silent thinkers, Salient writers anew,
Ladies, Lads and Kids, Kiddies and Peerless Peasants and Monks,
Philosophers, physiologists and lords of all the ranks,
All high or low, in wealth or wit embark Freedom Babe's growth
To everlasting eternity in onward march henceforth.

Oh ! that day of days our epoch
That transformed us in single breath
As free to think in good tempo
And rule ourselves our State and wealth.
Oh ! what a day to peep at back,
A glorious red-letter day of days
That lit our hearts and took aback
Of the noble ways of alien race.

Oh ! for that day to dawn, many strove of whom Mr. Hume was first
To found Congress and free our links of foreign rule ; a pest.
The creamy giant wits of our State then in non-violent means
Wrought freedom from Foreign clutch. (Many thanks to Mountbattens).
Ha ! my mind rejoice the day of days with heart and soul,
Rejoice readers to sing in one that reverberate pole to pole
Our Anthem 'JANA GANA' and salute our Tricolour Banner full-mast
That flutters daily and glitters gaily shattering ill-shoots ablaze.

And now our Babe has past full eleven
With 'Panch-Sheela', our greatest guide
By plans of Five years one by one
Embracing every branch and field
Of arts and parts, fine arts and crafts,
Of texture, culture and agriculture
With utmost careful Exchange Drafts
That tend best to our Babe's nurture.

Airway, Waterway, Roadway, Railway all means of transport, bleat
Under the Five-Year plan to get in more to Railway's crest
One thousand, hundred and twenty-five of crores to betterment
Of filling addition, alteration, renewal, replacement
For quick, prompt, better and safe service to 'valued public' at large
By night or day in sun or shower, at wharf or deepest barge.
So, with honest utmost best let every one feel right
That our Babe and all its worth should none we loose at sight,

To foster fondle in ways hundred
The day of days my good gracious.
Your day, my day of kin-kindred
To knell and bell in auspicious
And pledge our wit and grit at work
Fetching ever increasing fame
For ever and ever with least of lurk
In History of world, a golden name.

The birth of Babe on day of days to India's nativity
Showered bowers of fraternity of towering dexterity
Of prosperity to posterity with unique unity
That places, poses equality in the Nation's comity
Oh! the day, Renaissance day. How I adore thee
To sing this song today earnest, for thy growth to see
And love to live to love and learn and serve our race by dint.
So lead aright in Light my God; for ever await Your hint.



V. E. THIRUVENGADIAH,

Hon. Auditor, N.J.O. Cultural Association, Madras-23



COURTESY

C. S. SIVANANDAM,

Asst. Station Master, Trichinopoly Fort.

Awake! Arise! the hour is late!
The Angel of courtesy knocks at the door,
She is in haste and cannot wait
And once gone comes no more.

Life love and hate,
Hearts made sad or gay,
Homes made happy or desolate,
She is the cause every way.

To rescue the troubled and tempted,
To heal and to correct
The fiery tongues of the Bad,
And her visit is to protect.

In every form of human deed and speech,
From Cape Comorin to Himalayas,
She is the sweet voice to teach
The display of courteous ways.

Patience and gentleness in words
Are the cures that abate,
Where the murmur of distress
Echoes in life desolate;

Whereas, strong and hurtful words
With a rude and slighting sound,

And sharp to cut as swords,
Provoke complaints pouring around.

Smiling broad as sunshine,
Radiant in face with hopes
As the eyes speak of love genuine,
Blesses with all that words cannot express;

But, frowning brows and twitching lips,
Irritant in face, and cloudy,
And burning eyes are slips
In all that is life's tragedy.

In every form of human deed,
From the simplest to the highest,
A selfless act is good indeed
To show the man at his best.

Alas! in every act of selfishness,
Receding from Man to Beast,
In all kinds of meanness
Discourtesy to human value is manifest.

Awake! Arise! the hour is late!
The Angel o' courtesy knocks at the door,
Hear her sweet voice to relate
Her glorious virtues hailed more.

THOUGHTS ON WOMEN'S RIGHTS AND DUTIES

(Contributed)

THE view taken by Milton on the rights and duties of women is sublime while the view taken by Novelists and the majority of writers is human. Milton mentions that there is "nothing lovelier to be found in woman than to study household good and good works in her husband to promote". He makes Adam say that "God is my lord and I am your lord" and he makes Eve say "my author and disposer what thou biddest unargued I obey.....God is thy law and thou mine". One can discern variety in Shakespeare's Julius Caesar, where he portrays the concern a mature minded woman has got for her husband's work and honour. Portia, the wife of Brutus the stoic, was disturbed over the prospect of her husband getting rid of Caesar in a plot against Caesar. In the case of Calpurnia, wife of Caesar, Shakespeare makes us feel that she is common place and not possessing the excellence of Portia.

As for Milton, he devotes more attention to the sublime aspect and for ridiculing the frivolous aspect as when he says "to dance, to dress, to sing, to troll the tongue and roll the eye, to these the sober race of men whose life religious titled them the sons of god should yield up all their virtue, all their fame to the trolls and to the smiles of the fair female atheists for which the whole world ere long a world of tears must weep".

He criticises the putting of wanton dresses to such happy interview of fair event of love and lust, songs, garlands, flowers, charming symphonies which attracted the heart of Adam.

In the case of Shakespeare, he has got the knack of making human beings happy by dwelling on the human side of affection. In the Comedy of Errors, just as in Tamil Dramas and in Tamil Novels, we have got terms of endearment, such as "dear hearts, dearer hearts, eye's dearer, sweet hopes, aims, sole earth's heaven and heaven's claim. It is possible that on certain occasions Shakespeare rises to great heights. It is equally true that he is human and also he is ridiculous when the situation warrants. Probably Milton would not have dwelt on all these aspects as his predominant note is sublimity of thought.

Reverting to the subject under discussion, it may be said there are roughly four kinds of marriages in the world. One is the orthodox *dharmic* marriage, which is the marriage of Rama and Sita. Bringing Sita adorned with various ornaments and placing her before Raghava, king Janaka, Sita's father, addressed the enhancer of Kausalya's joy, saying "This Sita my daughter do thou accept, good betide thee, as thy partner in the observance of every duty; do thou take her hand by thine; may she be of

exalted piety, and devoted to her husband; ever following thee like thy shadow". Saying this, the king sprinkled Rama's palm with water sanctified with mantras.

Then there is the *Gandharvic* type of love marriage. The marriage of Dushyanta and Sakuntala represents this type. The third type of marriage is commonly known as *Rakshasic* marriage which is done by kidnapping the bride. There is lastly the *pisachi* marriage like those of ghosts as in the case of Ushaparinayam. In the dharmic marriage as that of Rama and Sita all religious ceremonies are observed. Kannikadanam, Mangalyadharanam and Saptapati are three of the essentials and the marriage thus performed is considered irrevocable. In the case of Dushyanta and Sakuntala, they had to go to litigation and court. This shows that this is not such a long-lasting marriage as that of Sita and Rama. Though in *dharmic* marriage there are many difficulties, it is worth putting up with minor difficulties.

Reverting to the main point, the household duty is recognised as the primary duty of a woman though there was a poet who wrote that the modern woman should know how to drive a car, to drive a golf ball and to drive the man. He also added that

she should come out instead of sitting at home and working indoors and the poet greets the woman who brings the day for all to go their chosen way. These are all ultra modern ideas. It seems relevant to refer to a parallel from Tennyson who believes that man is for the head and that woman is for the heart. "Man is for the sword and she is for the needle". Here, one is reminded of the satire of Moliere, the French Writer on "School for Wives" such as "powders, paints and pomades and thousand other ingredients which give colour to the cheeks, she must put far away from her. She must hide under her hood the killing glances of her eyes. She should not have dealings with men who have got only business with madam and not with monsieur." These are all satirical sayings. The poet on modern women is one extreme. This is a satire which goes to the other extreme. Most probably a sober woman would like to ignore both and attend to the kitchen, mind the children and lead a human life. This is probably what the majority of women would appreciate. Though it is necessary to move with the times a sober woman would not forget herself but would model her life in such a manner as is conducive to good health happiness and peace.



"BEYOND THIS EARTH"

WHAT thoughts come to our minds when we look up into a lovely blue sky during the day, or the black, star studded night sky? Which of us does not say or think such words as, how wonderful, how amazing, how immense, and how so far away it all seems to be.

Perhaps one day, or night, when you are sky-gazing you see a tiny speck moving slowly, oh, so slowly across that vast blue sky-dome, and you may hear a faint buzzing sound. Then you suddenly know that the tiny speck is an aeroplane flying several thousands of feet up. As you look closely and follow the movement of the aircraft with your eyes, it seems to be quite near the blue sky above, and yet so far away from the earth below. If the time is night, you may not see the aircraft, but perhaps it's pin-point red and green wing-tip lights winking, and it appears that the plane is quite close to those lovely stars, which are really billions and billions of miles away from our earth.

Now, what is all this immense distance we see when we look up at the sky? We may call it space, but space so immense and far away, that we cannot measure it. And yet because man has learned to fly, and has now discovered the terrific force of the atom, he will not rest content until he can use this power to

build rocket and space ships so that he can voyage to other planets.

First, let us consider the Moon. The Moon is smaller than our own Earth, and is much closer to us in space than any of the stars. If we had an atomic or rocket space-ship that was powerful enough we could perhaps voyage to the Moon in a few days. But what would the Earthmen find there when they landed off their space-ship?

First, they would be far from happy, as there the days are very hot and the nights very cold. Then again the Earthmen would not be able to breathe, as the air surrounding the Moon is not like the air we breathe on earth. Also, there are no plants, no food, no water. The Moon seems to be a land that is dead, with dried-up mountain and craters. But then, we may ask ourselves, why should anyone want to go to the Moon? Well, there are the scientists who are always searching and probing deeper and deeper into the mysteries of the Universe. If they could get to the Moon, and find some means of keeping alive there, they would be so much nearer other bodies in the heavens, which they could then observe and study.

But, in spite of what these fearless scientists would like to do, at the present stage of our knowledge, they would not be able to build a rocket ship to go fast enough and have

enough fuel for that long, long trip to the Moon and back. Another terrible obstacle is that when even the rocket ships man can now build, take off from the earth, the shock would be so tremendous that no man would live to land on the Moon.

There are other obstacles on the way too, such as the meteors. These are heavenly bodies moving about in space at a terrific speed. If the Earthmen's rocket ship hit one of these on the way, well, there would be no ship and nobody alive to tell the tale.

Scientists are also not sure whether there is much radioactivity on the Moon. With all the atomic explosions that have been set off on the Earth in the last two years, we have read of the destructive effect of radioactivity. So if there was much of this on the Moon, as soon as the Earthmen stepped out of their rocket ship on to the Moonland, they would perhaps disappear in a puff of smoke because of the radioactivity that might be there.

Next, we take a look at Mars. This planet is also smaller than the Earth; in fact about half its size. Scientists who have studied the stars through their powerful telescopes are almost sure that plants grow on Mars, and they even think that there might be snow, because Mars has what are known as polar caps that melt in the summer and get larger in the winter. For a long time scientists thought there were canals on Mars, but some think these canals may only be long strips of plant life.

The next question we ask is—Is there life on Mars? The answer seems to be both yes and no. There may be life, but not like what we have on

Earth, as the air on Mars is much different, consisting mainly of a gas called carbondioxide. Earthmen would not be able to live or breathe on Mars unless they wore oxygen masks.

There are other planets which we know by name—Venus, Mercury and Saturn. But none of these would be a good place for Earthmen, as it gets so hot during the day and so cold at night that Earthmen would never be able to live longer than a few hours there.

Next, we think about the stars, what we see in the sky as tiny pin-pricks of light at night. How many are there? Man can only make guesses. In fact, no man in his lifetime even if he lived one hundred years, would be able to count how many stars there are in the Universe. These little pin-points of light we see, are in reality so large that one million of kind of Earth would just about fit into one. And how far are these stars from Earth? Millions and millions of light years. But such words cannot give us even the slightest idea of the vastness of the space in the Universe, and the mind of man—your and mine—can never measure or understand that awful immensity.

Thousands of years ago, when man began to think he looked up to the sky and saw a large bird like a tiny speck flying up near the blue sky, said to himself, "one day I too will fly up there."

The thousands of years passed, and man's dream did become fact. He made a machine that took him away from the earth and way up into the blue sky above. Today he is flying in giant and powerful aircraft

thousands of feet above his Earth and so much nearer the stars. One part of his dream has come true. But he has not stopped. He thinks, "why can't I fly to the Moon." And when man thinks too much, he also acts. Within the last year man has gone a step further. He has made a spaceship that has launched what have been called 'baby moons' to circle round the earth, and with animal life in it. But the problem has not yet been solved. Man hopes that he can go further and further away from his earthbound home to the vast spaces beyond this earth, and who knows perhaps the babies who are being born this year will see, by the time they are grown up, a space ship reaching the Moon, and so much nearer the star-studded heavens.

UNCLE TELLATALE.

M. R. Venkatesan, Personal Assistant to Sri S. V. Ramaswamy, Deputy Minister for Railways, was married on 19th June 1958 to Padmavathi, daughter of Sri G. Krishna Iyer, E.E./Madras State Electricity Board, at Mylapore, Madras



Vedanthangal Bird Sanctuary

(Continued from page 54)

the whole scene becomes one of animation. It is a grand sight to see.

CONCLUSION :

Vedanthangal Bird Sanctuary, as a large mixed heronery, is unique and there is nothing like it elsewhere in India or probably in the whole of Asia. A Chinaman who is said to be the specialist in water-birds stayed there for a month. The Naturalists Association of India members visited this place during December 1957 and later on some Swiss members visited this place and said that they have seen nowhere in the world such a grand bird sanctuary as Vedanthangal. It is a fast becoming Tourist centre.

DEVELOPMENT OF RAILWAYS AND ITS IMPACT ON OTHER INDUSTRIES

The following is a talk given by Sri P. N. TALATI, Controller of Stores, Southern Railway, for the benefit of District Industries Officers from various states in India undergoing training at the S.I.S.I., Madras—[Ed.]

AS you are already aware, the entire success of the Second Five-Year Plan depends on the efficiency of our Transport System. In order to cater for the additional raw materials and finished goods that the Railways will be required to carry during this period, it is necessary that they should embark on a very vast expansion programme. The Railways have in fact been asked to plan for an additional carrying capacity of about 61 million tons per annum, by the end of the Second Plan Period over and above what they carried at the end of the First Plan. The increase is roughly 58%.

Let us first see what the Railways have achieved in the First Plan period. The Railways started their First Plan with their limited resources grossly over-taxed, with their depleted rolling-stock burdened with an uneconomically large percentage of overage units. For the Railways, therefore, the First Plan was necessarily a plan of rehabilitation. Although the First Plan gave the Railways Rs. 400 crores to spend, the actual expenditure was Rs. 423.73 crores. Of this Rs. 240.81 crores was spent on Rolling Stock largely on rehabilitation account. Even so, at the end of the First Plan, the Railways were still saddled with the following overage stocks :

30.8% of the locomotives,
19.6% of the wagons, and
33.7% of the coaches

on the line. In spite of these handicaps, railway operational efficiency during the plan period touched new record peaks which in certain directions put in the shade the highest levels of performance achieved under the regulated traffic conditions of the Second World War.

During the last decade, there has been a continuous upward trend in freight traffic. The total mileage covered by trains in the country rose from 134.1 to 198.5 million miles, an increase of 48%. The plan had provided for an annual increase of only 10% during the Plan period, but the actual increase was of the order of 24.8%, whereas the increase in rolling-stock for the same period was 7.8% in Locos and 16.7% in wagons.

As already stated previously during the Second Plan period, we are to cater for an increase of about 61 million tons over and above what we carried at the end of the First Plan. The itemised break up of this additional traffic is :—

	Million Tons
Steel	25
Coal	13
Cement	5
Other traffic	18
Total	61

August 1958

DEVELOPMENT OF RAILWAYS . . .

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Sri P. N. Talati

The magnitude of the task that has been entrusted to the Indian Railways will be appreciated when it is realised that the total rail capacity for goods traffic as it obtained in the last year of the First Plan—the product of 103 years of the growth of national economy—is now required to be increased by 58% in just five years. Gentlemen, I would ask you to ponder over the gigantic task which the Indian Railways have taken upon themselves. For effective discharge of this heavy responsibility, the Railways have to undertake large scale development of their own resources and equipment.

Out of the total proposed Second Plan outlay of Rs. 4,800 crores in the public Sector, the Railways have been allotted Rs. 900 crores, of which

they themselves have to find Rs. 150 crores. In addition, the Railways will spend Rs. 225 crores representing their own contribution to the Railway Depreciation Fund. In other words, the Railways themselves will find nearly one-third of the amount that is likely to be spent on the Railway Plan, which fact is not appreciated by many outsiders. The principal items of expenditure in the total Railway Plan of Rs. 1,125 crores are :

	Rs. in Crores
Rolling Stock ..	380
Line capacity works including Goods sheds ..	186
Track Renewals ..	100
Electrification ..	80
New Line construction ..	66
Workshop Plant and Machinery ..	65
Staff Quarters and Welfare ..	50
Rail Users' Amenities ..	15

The balance Rs. 183 crores is to be spent on other miscellaneous items. The Railways have made commitments amounting to Rs. 1,024 crores, which is made up of a throw forward of Rs. 205 crores from the First Plan and Rs. 819 crores against the Works Programme for the first three years of the Second Plan.

The main item of work for Increased line capacity, is the construction of 842 miles of new Railway lines mainly for inescapable operational needs. Of this, 615 miles of lines have already

been approved at the anticipated cost of Rs. 56.95 crores. Gentlemen, you have probably not hitherto realised that to construct one mile of new line, you require more than Rs. 9 lakhs. Besides this new construction, the plan provides for doubling of 1,607 miles of track, conversion of 265 miles of M.G. to B.G. and renewal of about 8,000 miles of existing track which has fallen into arrears due to shortage of Rails and Sleepers. The impact of this work alone on the Industries in the country can well be imagined. Besides major items like Rails and Sleepers, several small fittings like Fish Bolts and Nuts, Cotters, Steel keys, Tie Bars, Steel and C.I. Bearing Plates and Dog Spikes will be required by the millions.

As you are mainly concerned with Small-scale Industries, it may interest you to know that for our 1958-59 Works Programme on the Southern Railway alone, the Permanent-way fittings asked for are of the order of approximately 11,000 tons, valued at roughly Rs. 73 lakhs. We shall welcome any steps taken by you to develop the existing capacity for these items in the country. You can multiply these figures safely by ten times to arrive at the immediate requirements of all the Railways in India for the sanctioned works in 1958-59.

Then there is the electrification of 1,434 miles of existing Railway lines to be undertaken during the Plan period and this should provide an excellent opportunity for the manufacturers of electrical goods to expand their business considerably.

To cater for the anticipated increased traffic and partly in replacement of

old Rolling Stock, provision has been made to procure the following Rolling Stock :—

2,364—Locos,
11,575—Coaches, and
1,07,247—Wagons

during the Second Plan period. At the end of the First Plan period, the position was :

9,172—Locos,
23,426—Coaches, and
2,41,813—Wagons.

Very roughly, therefore, we shall be increasing our rolling-stock by 25% Locos and 50% Coaches and Wagons. It has been proposed to allot Rs. 28.5 crores during the plan period for the remodelling of several existing Railway Workshops and construction of new repair shops. As a result of this programme, the overall annual capacity for stock repairs and overhauling is expected to increase in the case of B.G. Locos by 26%, M.G. Locos by 72%, B.G. Coaches by 76%, M.G. Coaches by 116%, B.G. Wagons by 90% and M.G. Wagons by 87%. The demand for Loco, Carriage and Wagons duplicates and components will, therefore, correspondingly increase and this again will necessitate expansion of capacity in the private sector, as the Railways themselves cannot manufacture all their requirements. I shall read out a few typical items for which there will be regular demand.

Signalling and Safety.—The Plan provides for an outlay of Rs. 25 crores for Signalling and Tele-communication

Development works and works connected with greater safety of trains. The total value of works approved upto 1957-58 Works Programme was Rs. 15.52 crores. Safety works include the provision of Lock and Block Instruments on double lines, Token Instruments on Single Lines, Track Circuits in important yards and interlocking of level crossings, Catch sidings and Slip sidings. Increased tele-communication facilities will be provided by way of more long and short distance wireless links, very high frequency equipment and additional section control circuits. I shall again read out a few items which have been demanded for our 1958-59 Works Programme to enable you to know the nature of the Railways' requirements in this connection.

Considerable capacity in the country has been developed for the manufacture of important mechanical signalling items, such as Lever Frames, Compensators, point rodding, etc., but there is practically no indigenous capacity for electrical signalling items. The supply position in general has been unsatisfactory and there has been heavy short fall in supplies of even mechanical signalling items for want of adequate raw material. It is hoped the position will improve during the current year.

You are probably aware that early in January 1955 a Railway Equipment Committee was set up with a view to accelerating progress in achieving self-sufficiency to the maximum extent possible. In pursuance of their policy, the Ministry of Railways decided to set up Show Rooms at Delhi, Calcutta, Bombay and Madras to display representative samples of Imported Railway Equipment and important Indigenous

Railway Stores in short supply. Incidentally, the Madras Show Room was the first to be opened on 1st June 1955. A Catalogue of the items exhibited is available for sale showing the consumption of each item. The Ministry of Railways also has issued a Catalogue of the Rough Estimates of future requirements of Imported Railway Equipment and important Indigenous Railway stores in short supply, giving approximate estimates of annual requirements during the Second Plan Period. For the benefit of such of those who have not seen these catalogues, I shall read out a few items at random. The Exhibition at Madras was kept open for a period of 17 months from June 1955, and a proposal is now under consideration for re-exhibiting some of the items once again at a convenient place for the benefit of manufacturers interested in the same.

Further, as a result of the recommendation of this Railway Equipment Committee, I am sure, you are all aware that Regional Railway Equipment Advisory Committees have been set up in Madras, Calcutta, Bombay and Delhi, and have been functioning for over one year. Their constitution is of a very representative character. Your Institutes are participating actively in the deliberations of these Committees and the six representatives from various trades and manufacturers from the Private sector are allowed to express their views freely and you all have made a contribution in one way or another to develop the resources of our poor country and establish additional indigenous capacity. As your Institute is mainly concerned with Small-Scale Industries, it will not be out of place to give you an idea of

consumption on my Railway alone of possible of being manufactured by that some of the smaller items which are Industry :—

BUILDER'S HARDWARE INDUSTRY

Serial No.	MATERIAL	Estimated requirements during Second Plan Period
1	Hinges all types (25 sizes)	76,829 Nos.
2	Hasps and Staples (11 sizes) (all sizes)	11,224 ..
3	Tower Bolts, Pad Bolts (8 sizes), Aldrops, etc.	33,014 ..
4	Hooks and Eyes (7 sizes)	7,777 ..
5	Locks (Cabinet and Furniture Locks) (11 sizes)	2,682 ..
6	Wood Screws (165 sizes)	1,85,782 Gross.
7	Wire Nails (11 sizes)	T. 31
8	Pins Panel Iron (9 sizes)	T. 2-4-3-13

SURVEY OF INDUSTRIAL FASTENERS (BOLTS, NUTS, MACHINE SCREWS, RIVETS, DOG SPIKES, ETC.)

Serial No.	MATERIAL	Actual Consumption for the past three years (1954-57)
1	Bolts of sizes (161 sizes)	T. 541
2	Rivets of sizes (68 sizes)	T. 334
3	Dog Spikes of sizes (5 sizes)	Nos. 32, 17, 873
4	Fish Bolts of sizes (5 sizes)	.. 1, 43, 330

As you Gentlemen are from various provinces all over India, you can take this demand as a rough guide of the requirements of each of the other Railways where you are posted.

I may mention, in this connection, that your Institute has recently recommended some Small-Scale Units in Madras for placing Educational orders for some of the items and these are being arranged. Gentlemen, I can assure you that the Railways are most anxious to assist the Small Industries Service Institute in their effort to locate idle capacity and/or

expand the existing capacity for the manufacture of several hundreds of various items required by us. Whenever your Institute sends us a list of firms capable of and interested in the manufacture of ancillaries and components for Railway requirements, we first ascertain what Machinery and Equipment are available with them and the number of men employed to enable us to determine their capacity and the nature of the items they would be able to manufacture. A list of such stores has already been drawn out, and whenever we are in the market for these items, enquiries are sent to

firms with small workshops. The response, I must admit, has so far not been very encouraging. We have also arranged to endorse some of our enquiries for items suitable for manufacture by Small-Scale Units to the Director, Small Industries Service Institute, Madras, to enable him to distribute the same to Small-Scale Units interested. Also, at the personal request of Major Renga of your Institute to me, I have agreed to furnish, free of charge, samples and specifications on loan to your Institute to help the Small-Scale Units to quote against our enquiries. So far, they have taken advantage of 30 such items. On their part, samples of such items as Locks, Tower Bolts, Spikes, Dog Spikes, etc., manufactured by the Small-Scale Units for our Railway have been submitted for our approval, but I regret to say that, with a few exceptions, the other samples have not been favourably reported upon. We are fully alive that these Units, with the limited resources and technical know how, cannot be expected to turn out finished products of A-1 quality, and while we are prepared to allow a margin for such limitations, we cannot and will not accept components which are far below standard.

We are also fully conscious of the cogent necessity to conserve Foreign Exchange, and before we finally decide to incur Foreign Exchange expenditure, we explore all possible avenues to avoid importation and only when it is established beyond all doubt that the expenditure is inescapable, that we utilise our limited allotment of Foreign Exchange. We, therefore, do exercise constant and close vigilance to ensure that available indigenous materials are utilised to the fullest

extent, and that wherever necessary and possible, development of indigenous products is encouraged.

Cast Iron scrap surplus to Railway's own requirements of foundries is allotted to firms engaged in the manufacture of Cast Iron sleepers and other materials for Railways.

Most of our melting scrap is consumed by the Mysore Iron and Steel Works, Bhadravati. They are also interested in the purchase of our fresh steel turnings and borings which they use for Ferro Silicon.

I shall now deal with the question of utilisation of the large accumulation of steel scrap available with Railways. In 1957, a decision was taken by the Ministry of Railways to impose a ban on the outright sale of steel scrap and to utilise the same for Railway purposes to the maximum extent possible. Steps were taken to ensure that the scrap was distributed to such concerns who were capable of manufacturing items required by the Railway. To give just one example, we have recently entered into a contract with a Small-Scale Unit in the private sector for the conversion of our scrap carriage and wagon tyres into Beaters. For want of raw material, their factory was not working to capacity and they were very happy to use the condemned carriage and wagon tyres as raw material. Similarly, we have a large stock of condemned rails which could be converted into various useful items such as tie bars, etc., and your Institute can explore this avenue of expanding capacity to the fullest extent. The Railways will be always willing to issue their scrap on barter basis, i.e., for the manufacture of equipment required by them, with advantage to

SOUTHERN RAILWAY

TENDER NOTICE

The Deputy Chief Engineer (Construction), Southern Railway, Egmore, Madras-8, invites sealed tenders for the following works upto 13-00 hours on 22-8-1958:—

NAME OF WORK	Approximate cash value of the work	Earnest money	Time for completion of works	Cost of tender forms
<i>Quilon-Ernakulam Railway Construction—Section I</i>	Rs.	Rs.		Rs.
Junction arrangements at Quilon				
Construction of Staff Quarters—Type I—69 Units; Type II—36 Units and Type III—1 Unit.	2,59,000	7,770	6 months	10

Last date of deposit of earnest money with the Chief Cashier, Southern Railway, Park Town, Madras-3 12-00 hours on 19-8-1958.

Last date of issue of tender forms .. 12-00 hours on 19-8-1958.

Date of opening of tenders .. 15-00 hours on 22-8-1958.

Plans may be perused either in the office of the Deputy Chief Engineer/Construction, Egmore or in the Office of the Executive Engineer, Q. E. Railway Construction, Ernakulam South.

Further particulars and tender forms can be had either from the Deputy Chief Engineer/Construction, Egmore or from the Executive Engineer, Q. E. Railway Construction, Ernakulam South, on production of a receipt for Rs. 10 towards the cost of tender forms either from the Chief Cashier, Southern Railway, Park Town, Madras-3 or any Station Master on the Southern Railway.

August 1958

DEVELOPMENT OF RAILWAYS . . .

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themselves and profit to the manufacturers who are starved of their requisite Raw Materials.

The Railways are purchasing more and more equipment and stores, year after year, and the phenomenal increase in the value of stores purchased can be judged from the following figures given separately for the Southern Railway and for all Railways put together :—

YEARS	Rupees in crores.	
	Southern Railway	All Indian Railways
	Rs.	Rs.
1954-55	16-57	107-67
1955-56	18-46	126-27
1956-57	23-46	171-37

Quite an appreciable percentage of these are still Imported and the Railways are just as anxious as you are to see that the Imports are gradually reduced to the minimum. I have been through your Training Syllabus

and I am sure that with the excellent training you have received, each one of you individually and collectively will prove yourselves active agents in exploring and developing latent capacity and resources for expanding our Industries for the manufacture of Railway equipment in the country and thereby attain self-sufficiency in the not distant future. You are well equipped for the task and it now remains for you to work with zeal borne of patriotism, so that we can make a substantial reduction in our Foreign Exchange expenditure. It is gratifying to know that Purchases from Cottage and Small-Scale Industries during 1956-57 recorded an improvement of 18% over the previous year, i.e., from Rs. 318 lakhs to Rs. 377 lakhs. If you come to us for assistance of any kind, you will not find us lacking in co-operation. So good luck and God speed.—JAI HIND.

N.B.—The author of this lecture is indebted to the Publications Division of the Ministry of Information and Broadcasting, Government of India, for their booklet "Wheels for the Plan" issued on behalf of the Ministry of Railways in April 1958, from which the statistical information has been collected.

A group photo taken after the speech



SOUTHERN RAILWAY

TENDER NOTICE

The Deputy Chief Engineer (Construction), Egmore, Madras-8, invites sealed tenders for the following work upto 13 hours on Monday, the 25th August 1958 :—

NAME OF WORK	Approximate cash value of the work	Earnest money	Period of completion	Cost of Tender Form
	Rs.	Rs.		Rs.
Doubling of track between Gudur and Manubolu in North-East Line.				
Construction of bridges in Reach I miles 84/20 to 86/9.	7,63,100	22,893	12 months	10

Earnest money as mentioned above should be paid *in advance*, to the Chief Cashier, Park Town, Madras-3, within 12 hours on Thursday, the 21st August 1958 and the receipt thereof issued by him attached to the tender *without fail*.

Further particulars and the tender forms can be had from the Deputy Chief Engineer (Construction), Egmore, Madras-8, on production of a receipt for the sum of Rs. 10 towards the cost of tender form paid to the Chief Cashier, Park Town, Madras-3, or any Station Master, on the Southern Railway within 12 hours on Thursday, the 21st August 1958.



INDIAN RAILWAY TECHNICAL BULLETIN

Edited and Published by the Director, Research, Railway Board, Lucknow

The May issue of this Quarterly Bulletin contains articles on recent developments, projects and other matters of current interest to Railwaymen in India, Research Reviews, brief developments on foreign railways, technical abstracts, Notes and Views, etc. 'Tele-communication and Signalling Problems' is an interesting article by Sri K. K. Gupta. During recent years there has been considerable development in the field of high voltage standard frequency electric traction. This system, however, created several problems including those relating to signalling and tele-communications which had to be studied and solved. In view of the fact that the Railway Board have decided to adopt high voltage 50 cycles as the future standard for main line electrification in India, an analysis of some of the problems involved has been carried out and details of the work done towards solution of these in some countries such as France, Japan, Britain, etc., are given in this article. In the article "On the Difficulties of Traffic to Assam and a Possible Solution" the goods and passenger traffic statistics of the Indian Railways are examined and it is shown that the operating ratio is higher with the metre gauge system than with the broad gauge

ones. It is argued by the author Sri A. K. Chakravarti that the conversion of the Assam Rail Link into a broad gauge system is an economic proposition as this would reduce the operating expenses by an amount sufficient to compensate for the cost of conversion. "Statistical Concrete Quality" is another interesting article by Sri R. Nagarajan. An attempt has been made in this article to apply statistical quality control methods to medium and small concrete constructions in order to maintain the desired degree of uniformity in concrete quality. The different statistical techniques involved are explained with relevant tables and charts. In the Research Review a summary of the Annual Report of the Research Centre, Association of American Railroads has been given. The other regular features are also interesting.

KURUKSHETRA

Published by the Ministry of Community Development, New Delhi

The ABU CONFERENCE NUMBER of the Kurukshetra is full of useful information with an attractive cover page in the oriental art design. Sri Jawaharlal Nehru in his message observes that there is abundant criticism of the work being done in the Community Development areas. But the major fact remains that the Community Development programme in India is far the most revolutionary

thing and the results so far achieved are truly astonishing. It is only five and a half years ago that this programme was started and now it is the warp and woof of rural India. This is not so much because of its vast spread over hundreds of thousands of villages, but rather the new life which it has been creating and which we see bubbling up where there was stagnation and lifelessness before. It is the business of the National Conference on Community Development to consider the multitude of problems that face them and to give proper direction. It is only through self-reliant co-operation that our people will flourish and go ahead. The Government aims to have in every village a school, a panchayat and an all purpose co-operative. Thus it lays the basic foundations for our political, economic and cultural development and build up self-governing democratic units in the larger democracy of India. The poem "ABU MEET" by Sri R. Jagannathan is very interesting. The author brilliantly portrays the natural beauty of the Mount Abu. The sunset at Mount Abu viewed down on the plains from an elevation of 4,000 ft. is a rare phenomenon caused by refraction of high rays. The articles "On the Second Front" and "Immediate Objectives" are very interesting. "Community Development and Local Self-Government" is another interesting and informative article by Sri B. Mukerji, I.C.S. A summary of the resolutions and recommendations of the ABU CONFERENCE has been given in this Number. The feature, Gleanings from the Press, is a novel idea of the Editor portraying the public opinion irrespective of criticism

or appreciation. The "Last Page of the Editor" is very suggestive. There are plenty of informative cartoons and proverbs in this issue.

BHARAT SEVAK

*Published by the Bharat Sevak
Samaj, New Delhi*

The July 1958 issue of this official organ of the B.S.S. is as usual informative and interesting. When the national government conceived the idea of planned economy to raise the Indian citizens from the depth of poverty it was felt that a non-official and voluntary social service organization like the Bharat Sevak Samaj could play a significant part in this task. For the principal object of the Bharat Sevak Samaj is social mobilization, which is the *sine qua non* of any concerted effort at national betterment. Sri Gulzari Lal Nanda, Chairman of the Bharat Sevak Samaj, gives a clear outline of the task that lies ahead of the B.S.S. in this issue. The article "Social Significance of Malaria Eradication" is very informative. Malaria, known to humanity since antiquity, has always held pride of place as a "major murderer of mankind". Although lacking in the dramatic element, for centuries it has been seriously hampering our social and economic progress and has presented a tough problem to the scientists and administrators. It still ranks high in the list of man's afflictions and continues to affect the health of millions living in the rural areas. The social and economic losses caused by this disease are enormous on account of its adverse effects on health, agriculture, industry and the development projects. The article deals with the

significance and implications of the National Malaria Eradication programme of the Government of India. "A dream that may come true" is another interesting article. Man has never yet discovered the paradise on earth that he has always dreamed of. But new knowledge and understanding, if wisely applied, can help to make his dreams come true. In this article Dr. Axel Hojer pictures a future when a long healthy and heavy life will be the birthright of every child. "World of Work" is an informative feature. Young persons looking for a career should know not only what they want but also where they are wanted. They should know something about the world of work. This article will be very useful to them. Other regular features are also interesting. There are number of photographs and diagrams in this issue.

INDIAN INDUSTRIES

*Published by Sri Krishna Srinivas,
Madras-17*

(Annual 1958)

The Annual under review is brilliantly got up with plenty of reading matter, specially with reference to the Second Five-Year Plan, well written on varied topics by business magnets of both India and abroad, with a profusion of illustrations and an attractive cover page specially illuminating the same. Dr. Radhakrishnan in his Foreward stresses the need for a planned development in India and observes that in this development the two sectors, private and public, will have to supplement each other and raise production, but the basis of all developments in the country is the stepping

up of agricultural production and that it should not be neglected. Sri J. R. D. Tata in his article "Iron and Steel Industry" describes the brilliant part played by his TISCO and its great future in India's Industrial development. Sri D. N. Jalan, President, Indian Chamber of Commerce, powerfully pleads in his article for regaining some of the former glory of the Indian Jute Industry. Of the memorable builders of Industrial India, the name of Birlas will blaze in letters of gold. Sri Birla's survey of Indian Planning is very masterly, illuminating and distinguished. Sri K. C. Mahindra in his article "Productivity" offers a brilliant solution to low agricultural productivity in this country. India is building for prosperity and Sri D. M. Khatau, a renowned industrialist portrays in his articles Associated Cement Companies, the magnificent part played by his illustrious organisation. The articles "Martin Burn aiding India's Progress" Rayon Industry, "Cair in Indian Economy" are also interesting. "Typewriters made in India" by Mr. B. K. Karanjia is very informative. Mr. Karanjia, an excellent journalist himself, traces the history of typewriter industry in his inimitable way. In electric lamp production India is making astonishing progress; the article "Electrical Lamps" brilliantly portrays lamp manufacture step by step. The other fare supplied throughout the magazine are also interestingly delicious and will be very useful for businessmen and public alike. The photographs are well reproduced. Neatly printed and luxuriously got up the Number sets up a standard for journals of its kind.

S. VEDANTAM

SOUTHERN RAILWAY

TENDER NOTICE

The Deputy Chief Engineer (Construction), Egmore, Madras-8, invites sealed tenders for the following work upto 13 hours on Wednesday, the 27th August 1958 :—

NAME OF WORK	Approximate cash value of the work	Earnest money	Period of completion	Cost of tender form
	Rs.	Rs.		Rs.
<i>Doubling of Track—Bezavada-Waltair section in North-East Line.</i>				
Earthwork in Formation and Service Roads between Rajahmundry and Dwarapudi (Miles 359½ to 371½).	7,20,000	21,600	18 months	10

Earnest money as mentioned above should be paid *in advance* to the Chief Cashier, Park Town, Madras-3, within 12 hours on Friday, the 22nd August 1958 and the receipt issued by him thereof attached to the tender *without fail*.

Further particulars and the tender forms can be had from the Deputy Chief Engineer (Construction), Egmore, Madras-8, on production of a receipt for the sum of Rs. 10 towards the cost of tender form paid to the Chief Cashier, Park Town, Madras-3 or any Station Master on the Southern Railway, within 12 hours on Friday, the 22nd August 1958.

“ANANDA NILAYA VIMANAM”

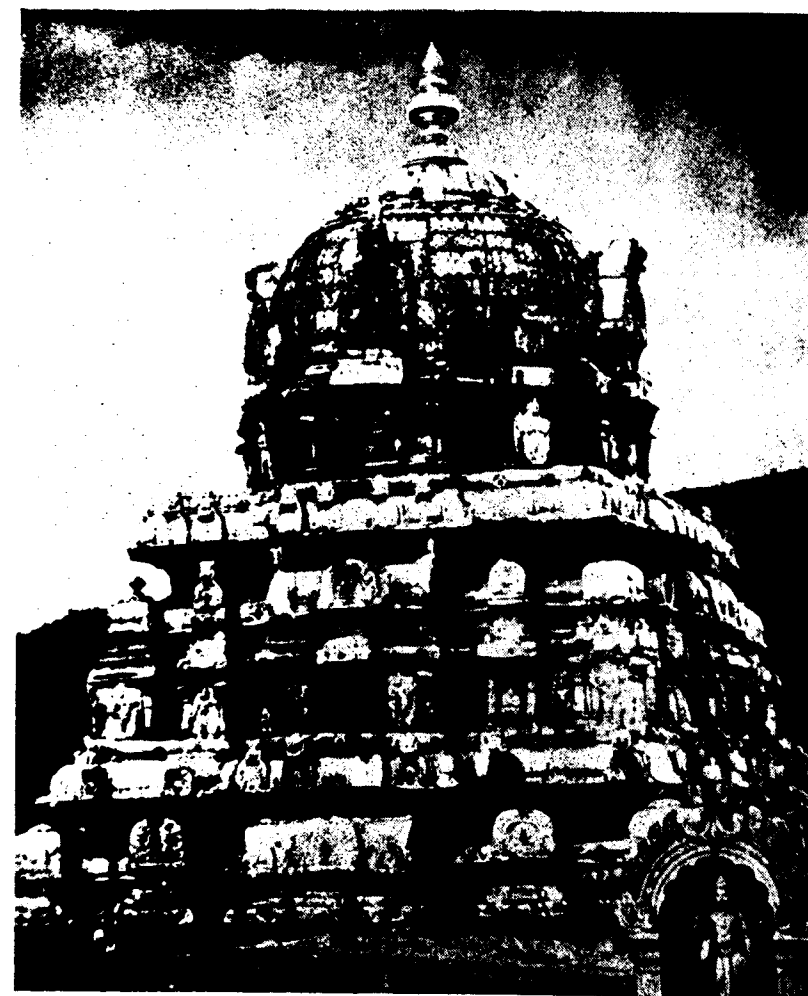
of

Sri Srinivasa Perumal at Tirumalai Hills

T. N. S.

ON Wednesday, August 27, 1958, Hills—the abode of Sri Srinivasa Perumal, whom every Hindu adores one of the most unique festivals ever within living memory for with deepest veneration. For it can be said with certainty that no Hindu the past few centuries is being celebrated on that sacred Hills—Tirumalai can afford to ignore this renowned

“Ananda Nilaya Vimanam”—a close up view





*The temple of Sri Srinivasa at
Tirumalai Hills*

place of pilgrimage and one of the most reputed and richest temples in the whole of Bharat—a place of hoary antiquity and religious importance.

Lord Srinivasa's temple dates back to pre-historic days and one of the most enchanting features of this temple is the gorgeous gold-gilted Vimanam that stands over the *Sanctum-Sanctorum* of the presiding deity, Lord Sri Venkateswara as Southerners call Him, whom the Northerners adore by the name Sri Balaji. This Vimanam is known as "*Ananda Nilaya Vimanam*" and it is one of three gold-gilted vimanams in South India set over Vishnu shrines here—the other two being the 'Pranvakara Vimanam' at Srirangam near Tiruchirapalli and the 'Somaskanda Vimanam' at Alagarkoil near Madura.

The Vimanam at Tirumalai Hills is a pyramidal one of about forty feet in

height having a square base and rising in three tiers, the top of which is in the shape of a huge lotus bud kept inverted, crowned by a single gold Kamalasam, conforming to agamic sastras and rules.

Pilgrims coming to this temple all the year round gaze in admiration of this huge structure covered over with copper plate gold-gilted ornamental cover, shining resplendent against the cool morning sun and also blazing brilliant in the rich warm hues of the setting sun. At night, its soft brilliance is enriched both by the mellowed moonlight harmoniously coupled with the brilliant beams from the powerful electric spot-lights set on the several sides of this Vimanam. So much so, both night and day, from far and near, it is an indelible sight to see this well-shaped Vimanam standing aloft over the massive walls of the temple, with

August 1958

"ANANDA NILAYA VIMANAM"

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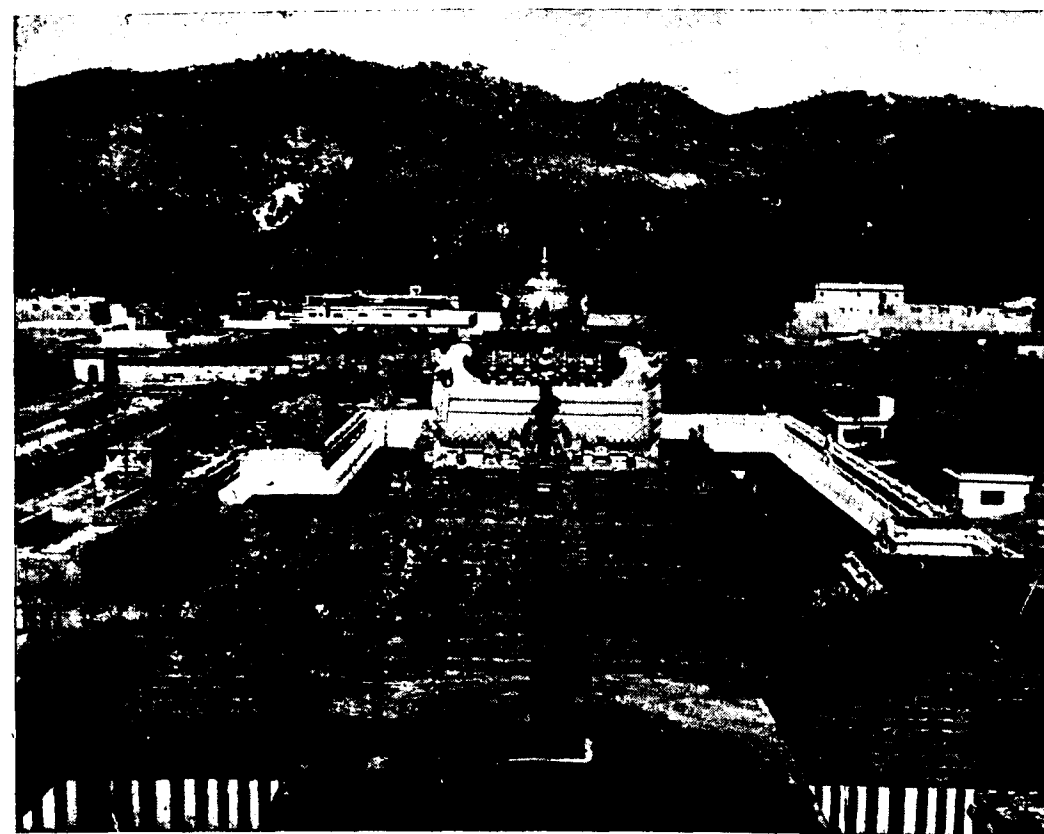
two gopurams in front, all set against the undulating background of mountain ranges, which covers the horizon all round to a considerable height.

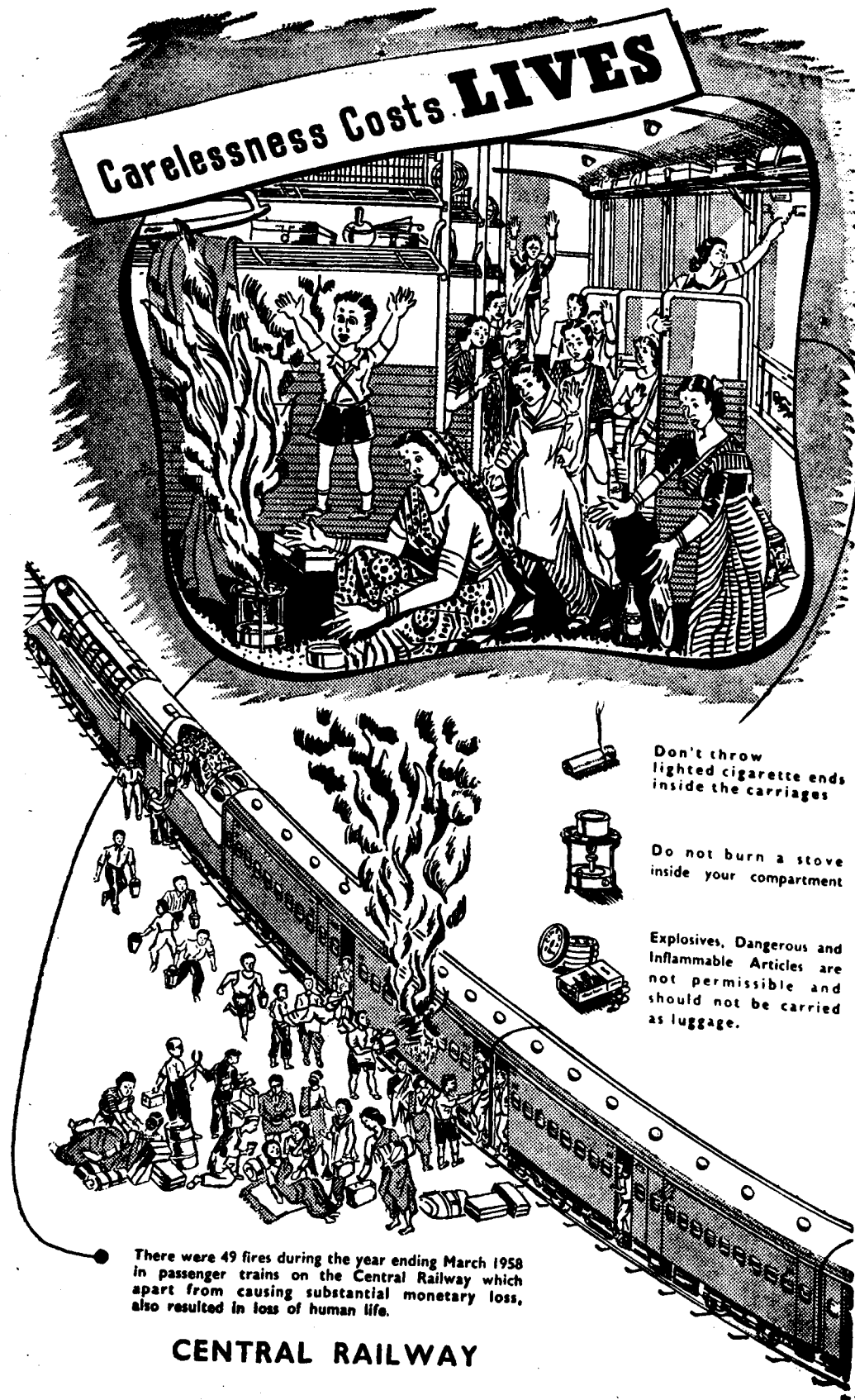
According to epigraphical records, it is evident that this Vimanam, originally an ordinary masonry structure said to have been built by Thondaiman Chakravarthi of legendary fame, was plated with gold by Jatavarman Sundara Pandya in the middle of the fourteenth century. Later the Vijayanagar rulers and their officers like Saluva Mangideva, who played an important part in the campaigns of Kumara Kampana had the copper

plates renewed with fresh coatings of gold, which was in the later half of the fifteenth century. During the rule of Emperor Venkata I in the seventeenth century, the acharya purusha of the Vijayanagar rulers—Kotikanyakadanam Tatacharyar of Kanchi completely renovated the metal-casing of the Vimanam and installed the golden cover that we were all seeing till about a few months back.

Due to ravages of time and fury of nature, coupled with the untold mischief done by the troublesome monkeys that have made Tirumalai good home for themselves, much of

Tirumalai (Tirupati) Temple and surroundings





Motorable road leading to Tirupathi

the plates have been damaged and a few lost by removal. The gold covering had gone in several places and so this once magnificent structure presented a patchy appearance. The present management of this rich temple took upon themselves this most arduous task of fitting a fresh casing made in pure thick copper sheets, heavily gold-plated at a very enormous cost running to about twenty lakhs of rupees. For this task, the old plates were removed, the inner masonry structure was reconditioned and then the newly made plates, which are exactly similar to those that had all along adorned this Vimanam were fixed again.

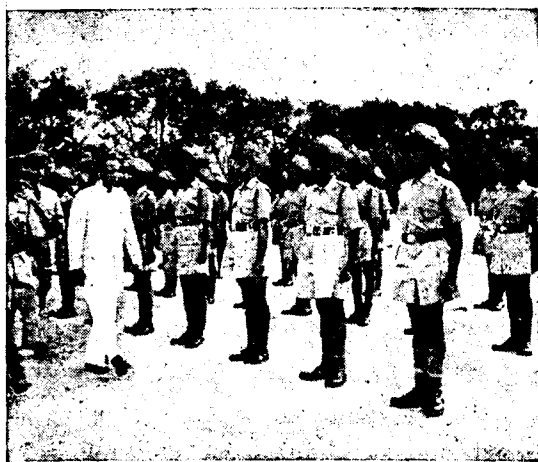
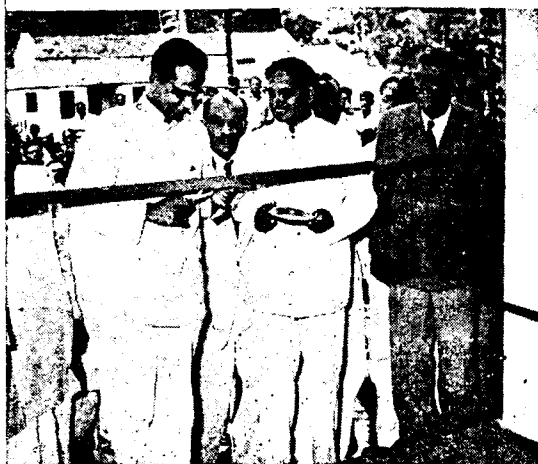
The 'Prokshanam' festival, which many call as 'Kumbabhishekam' is

to take place this month end when the innumerable devotees of Sri Srinivasa can feast their eyes with a gigantic gold 'Ananda Nilaya Vimanam', shining resplendent again over the abode of that 'Kaliyuga' Perumal—Sri Venkatesa of Tirumalai Hills. It must be admitted that besides the enormous cost involved in making this gigantic project to fruition, as now a tola of gold costs about a hundred and odd rupees, the charming workmanship of the Vimanam reveals the existence of really good craftsmen in our part of the country, who perhaps, for want of proper encouragement and application, seek other fields of activity for their living, thus proving the famous maxim "Art is long, but Time is short."



A view of the Hospital at Pakala

Sri P. A. Menon cutting the ribbon and declaring the hospital open.



IMPROVED MEDICAL FACILITIES AT PAKALA AND ARKONAM

At 10 hours on Sunday, the 13th July, the new Railway Hospital at Pakala (Health Unit No. I) was opened by Dr. P. A. Menon, Chief Medical Officer, Southern Railway, Madras. Sri K. J. Chandy, Divisional Superintendent, Southern Railway, Guntakal, presided over the function. There was a gathering of more than 2,000 within the premises of the hospital. Dr. K. Ragavendra Rao, D.M.O./Guntakal, welcomed the guests. Sri K. J. Chandy recapitulated his previous experience 11 years back when he was DTS/Guntakal. The face of things had changed considerably during these years. Many improvements had been made. He congratulated all those connected with organising the function and all those who are connected with the work of construction for having brought it to a successful conclusion.



Dr. P. A. Menon, C.M.O., inaugurating the function said: that the hospital was not a certificate issuing institution. It was a beneficial welfare institution. The outlook on hospital has changed during the last few years. In this Health Institution, there was the Sanitary side and also the preventive side for working the hospital. It had the scheduled equipment and costs about Rs. 1,21,000.

The Doctor-in-charge of the Hospital, Dr. B. L. Narasimhan proposed a vote of thanks and the function came to an end after the inauguration by Dr. P. A. Menon, C.M.O., who cut the tape and declared it open. With the singing of the National Anthem, the function came to an end.

There was also Vana Mahotsavam performance. Each Officer present planted a tree. Some officers planted mango trees and some others shade trees in and around the hospital.

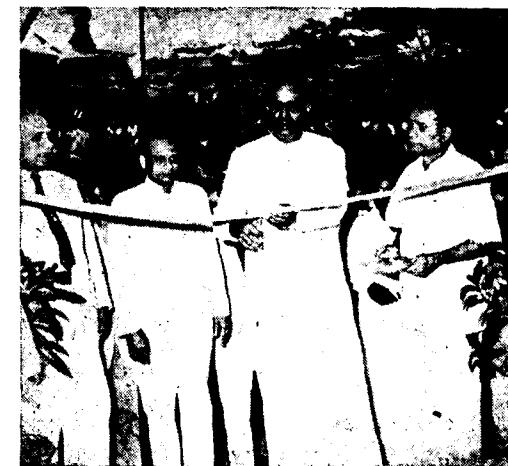
The new Grade I Health Unit (Railway Hospital) at Arkonam



Dr. P. A. Menon planting a sapling at Pakala

was scheduled to be opened by Sri D. B. Patel, Divisional Superintendent, Rayapuram on 12th July. A distinguished guest, Sri Baktavatsalu Naidu, Deputy Speaker, Madras

Sri Baktavatsalu Naidu opening the Health Unit at Arkonam





A section of the gathering present on the occasion

Deputy Minister for Railways for having kindly consented to preside over the day's function, and for laying the foundation-stone of the Divisional Office, in spite of his multifarious engagements and also with the limited time at his disposal.

The Deputy Minister for Railways after laying the marble foundation-stone with the chanting of the holy "manthram", specially arranged for the occasion, made an earnest appeal to all the employees of the Railway to work hard and foster the spirit of promoting goodwill among the staff, having the motto of serving to the best interests the passengers who form the back bone of the Railways. He complimented the railway staff at Hubli for their good performance and wished them a bright future.

A hearty vote of thanks was proposed by the Divisional Engineer, Sri M. N. Singlachar, for the benign presence of the Deputy Minister in making this function a success.

The pleasant function ended with the singing of the National Anthem by Sri Jantli.

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MADRAS-2



Smt. S. V. Ramaswami cutting the ribbon thus declaring the centre open

HANDICRAFT CENTRE FOR WOMEN AT HUBLI

A simple, but an impressive function was got up in the M.T.S. Colony on the evening of the 5th June 1958.

In a well-lit Pandal put up in front of the units adjacent to the Colony Co-operative Stores, Srimathi Seethalakshmi Ramaswamy formally opened the Handicraft Centre. On arrival at the Colony, Srimathi Seethalakshmi Ramaswamy and party were received by the residents of the Colony, and she was garlanded by the children, followed by a welcome song by them.

Smt. S. V. Ramaswami speaking on the occasion



Welcoming Srimathi Seethalakshmi Ramaswamy, the Divisional Personnel Officer, Sri T. V. Madhav made a brief outline of the Handicraft Centre sponsored by the Railway, to benefit the lower income groups residing in this Colony. He also thanked Srimathi Seethalakshmi Ramaswamy for having consented to inaugurate the function.

Speaking after cutting the ribbon and declaring the Handicraft Centre open, Srimathi Seethalakshmi Ramaswamy exhorted the ladies assembled there to take advantage of this centre and to see that more and more people take up the habit of this handicraft so that their contribution to the well being of their families be enhanced. With a fervent appeal to the ladies assembled, she wound up her address by requesting them to work hard and improve the standard of living of the lower income groups.

The function was well attended by the employees and their families residing in the M.T.S. Colony, as also by the Railway Officers and Members of their families.

The function terminated at 7-45 P.M. with the singing of National Anthem by the children.

THE NATIONAL COUNCIL MEETING

OF THE
BHARAT SCOUTS AND GUIDES, MADRAS STATE
AT

Madras on the 19th and 20th July.



August 1958

S. R. NEWS

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The Divisional Railway Users' Consultative Committee, Guntakal, met at Renigunta on 26th July

Sri R. Dattatary, Clerk, CCS's Office, Rates Section, who participated in the Cultural show, "Katta Bomman", conducted during Railway Week in Delhi, receiving a medal awarded by the Northern Railway from Sri K. Swarup, CAO/ICF



SOUTHERN RAILWAY

TENDER NOTICE

Tender No. S/236/VII/F1/AJJ/2395.

Sealed tenders are invited for the supply of 368 cwts. of wire galvanised stranded 7 strands of 14 S.W.G. each ISD/G/Ware/36 and will be received by Controller of Stores, Southern Railway, Ayanavaram P.O., Madras-23, before 3 P.M. on 8-9-1958 and will be opened immediately thereafter.

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

The last date for the receipt of earnest money, viz., Rs. 500 by the Chief Cashier, Southern Railway, Madras-3, is 4-9-1958.

Tender forms will not be issued after 3 P.M. on 2-9-1958.

Controller of Stores.

SOUTHERN RAILWAY

TENDER NOTICE No. V

Sealed tenders in the prescribed form will be received up to 16 hours on 29-8-1958 for the following:—

Name of the work	Approximate value of contract	Earnest money	Cost of tender form	Period of completion
	Rs.	Rs.	Rs.	
Chickjajur—Improvements to water supply.	64,800	1,944	10	6 months

1. The cost of tender form must be remitted to the Chief Cashier, Southern Railway, Madras or Divisional Accounts Office, Mysore, or to any Station Master on the Southern Railway and the receipt issued therefor may please be sent to this office.

2. Last date of issue of tender form—15 hours on Monday, the 25th August 1958.

3. Last date of receipt of earnest money—15 hours on Tuesday, the 26th August 1958.

4. Tenders received will be opened at 16 hours on 29-8-1958.

5. Further particulars and tender form can be had from the Divisional Superintendent (Works), Southern Railway, Mysore.

FACTORS WHICH INFLUENCE TRAIN SPEEDS

T. S. PARTHASARATHY

Deputy Chief Operating Superintendent (Goods)

RESPECT for time varies widely from country to country. It is best in countries where the density of traffic is high as the railways there cannot afford to deal with trains in a leisurely manner. Where even express trains stop at junctions only for a minute and are started away when the second hand in the drum clock on the platform completes a circle, not only the railway staff but also the passengers get keyed up to the situation. The duration of the stoppage does not permit of any warning bell being rung before the train is started, not to speak of any 'first bell' being rung five minutes before the departure. Food and other habits of passengers automatically get adjusted to this method of working. Passengers either take their meals in the dining cars or get them served in baskets which are supplied within the time allowed.

To counteract false time reporting, many countries employ locomotive speed recorders, the most popular varieties being the Hasler speed-time meter and Flamand speed-distance meter. These meters record, besides speed, time and distance and in some cases air pressures (or vacuum as the case may be), observation of signals and working of train control systems. The recording is done by sealed meters which cannot be tampered with by the train crew and the tapes are sent to the district offices to provide an easy means of checking delays at stations, observance of speed restrictions and efforts made to regain lost

time. The high initial cost and the difficulty in maintenance of such meters have stood in the way of their being introduced in all countries.

The *ad hoc* Committee mentioned in my previous article recommended that, in the absence of speedometers on engines, drivers of fast trains should be provided with special schedules for use when running late showing the minimum time to be taken between selected points. The Railway Board directed that the special schedules suggested showing the minimum time to be taken between selected points on the run to ensure that the maximum permissible speed was not exceeded should be embodied in the Working Time Tables. Accordingly the minimum permissible running time for each block section is indicated in the Working Time Tables.

The *ad hoc* Committee also made the following recommendations with regard to the framing of Working Time Tables.

Formerly the railways used to add for each stop 2 to 3 minutes for acceleration and deceleration to the through running time for the distances at the average booked speed. The Committee indicated that the then existing allowance was often inaccurate. It was, therefore, recommended that the necessary time allowance should be determined from and supported by recorded data. The Board accepted the recommendation and directed each railway administration to take steps to ascertain the time allowance

SOUTHERN RAILWAY

NOTICE No. 1

Divisional Superintendent, Southern Railway, Vijayawada, invites sealed tenders for the following works to reach him at 12 hours on 1-9-1958 :—

Serial No.	NAME OF THE WORK	Approximate cost of the work	Earnest money to be paid
		Rs.	Rs.
1	Tadepalli—Replacing the existing rail type coal Tranship platform with masonry ones 3'-6" wide on GTL end BZA Division	44,419	1,333
2	Supply of granite stone ballast 1½" ring alongside the track from mile 474/0 to 477/18 on BZA-WAT Sec. Qty. 2,00,000 C.ft.	1,06,000	3,180
3	Supply of granite stone ballast 1½" ring alongside the track from mile 437/10 to 440/0 on BZA-WAT Sec. Qty. 1,30,000 C.ft.	70,000	2,100
4	Supply of granite stone ballast 1½" ring alongside the track from mile 440/0 to 443/0 on BZA-WAT Sec. Qty. 1,50,000 C.ft.	80,000	2,400
5	Supply of 1½" ring hard stone ballast alongside the Railway track for a length of 9.5 miles between miles 118/20 to 150/20 in connection with making up of ballast deficiency on BTTR Sec.	1,02,000	3,060

Note :—1. Last date for the sale of tender forms 15 hours on 26-8-1958.

2. Last date of receipt of earnest money by the Chief Cashier, Madras, or Divisional Pay Master, Vijayawada, 12 hours on 30-8-1958.
3. Tender forms can be obtained from the Divisional Superintendent (Works), Vijayawada, on production of a receipt for Rs. 10 paid to the Chief Cashier, Madras, or Divisional Pay Master, Vijayawada, or to any Station Master on the Southern Railway, towards the cost of each tender form for each work.
4. In no circumstances will the amount paid for the tender form be refunded. Further particulars can be obtained from the Divisional Superintendent (Works) Office, Vijayawada.

for acceleration and deceleration in connection with booked stoppages and speed restrictions. It is, therefore, necessary that the policy adopted on each railway should conform to recorded data. On the Southern Railway, the standard adopted is 2 minutes.

PROVISION FOR LOSS OF TIME :

The general practice is to make allowances for time lost by traffic and loco in the margin provided in the working Time Tables between the maximum permissible and the maximum booked speeds. In addition, it is the practice on the Southern Railway to allow an extra time of about 5 minutes for every 100 miles to cover any unforeseen traffic or loco detentions. The *ad hoc* Committee accepted that the margin between the maximum permissible and maximum booked speeds was sufficient to cover incidental traffic and loco losses in time. It has been indicated subsequently that rounding off of running time gives a further margin in several cases.

SPEED RESTRICTIONS :

The *ad hoc* Committee recommended that the practice then followed on all railways to make allowances of time required to observe speed restrictions whether permanent or temporary should be continued. So far as the permanent speed restrictions are concerned the running time schedules worked out on the basis of the maximum booked speed takes into account the permanent speed restrictions concerned. With regard to temporary speed restrictions, it is not, however, possible

to provide the requisite allowance in advance. The practice hitherto followed on the Southern Railway is to obtain the half-yearly forecast of engineering speed restrictions from the divisional engineers. These engineers are expected to take into account the number of sanctioned works, the condition of the track, etc. and ask for the minimum additional time required for covering speed restrictions for each half-yearly period. If this forecast is fairly accurate, there will be no difficulty in providing the time asked for on the particular sections so that trains may not lose time on this account. The forecast is, however, deviated from in 90% of cases in practice on account of shortage of materials and various other causes. However, the forecast of speed restrictions which is received about 3½ months in advance of the date of effect of the Working Time Tables is scrutinised in detail in the Transportation Branch and if it is feasible to provide the time asked for without missing connections or without seriously exceeding the overall time of important trains, the allowance is made on the sections concerned.

TIME ALLOWED FOR CROSSINGS :

The time allowance given in the Working Time Tables for crossings or passing through loops should naturally be in conformity with the station working rules which, in turn, depend upon the standard of signalling and interlocking provided and the need for the movement of pointsmen, etc., in connection with the reception and despatch of trains. It is considered essential that, whatever rules are framed for the safe working of trains,

adequate provision of time to permit the staff to carry out the instructions scrupulously is absolutely necessary. This aspect requires careful attention particularly in respect of key-locked and non-interlocked stations so that adequate time is allowed for the movement of pointmen at normal walking speed between the station and the outermost facing points, exchange of keys and setting and manning of points, etc. The time allowance to be given actually is to be determined by each railway on the basis of practical tests. The railways have accordingly been addressed recently, carefully to check up and verify whether the allowance given in the Working Time Tables is actually adequate at the various types of stations for effecting crossings of trains in strict accordance with working rules. It has, however, been stipulated that standing instructions should be issued to all concerned that irrespective of any inadequate provision that may be made through a mistake in the Working Time Tables, the staff must observe the working rules and instructions strictly and if, in consequence, some detentions occur, they have to be condoned.

UNIT OF TIME :

The Indian Railways in general adopt one minute as the unit of time in the Working Time Tables barring a few exceptions. So far as the Southern Railway is concerned, the following exceptions may be noted :

In respect of the Madras Suburban steam services on the Broad Gauge only half a minute halts are allowed

at certain comparatively less important stations. The intersectional running time is, however, given only in full minutes.

In respect of the Madras-New Delhi De luxe express trains, the running time has been determined to the nearest higher $\frac{1}{4}$ minute. The unit of time in this case, may, therefore, be taken as $\frac{1}{4}$ of a minute. It became necessary to adopt this smaller unit of time as it was necessary to reduce the overall running time of the train to the maximum extent possible.

So far as the Electric suburban services are concerned, the unit of running time now adopted is only one minute. Prior to 1st November 1948, the unit of running time in the case of electric trains was given in 5 seconds. This was, however, discontinued later presumably because of there being no immediate necessity to reckon the running time in fractions of a minute as the minimum headway between trains used to be 6 minutes.

The standard unit of time on which the booking of running time is done in Japan is 15 seconds except in the case of electric cars in suburban areas where the unit is 10 seconds. All trains and electric cars are required to run punctually to these low units of time. The watches supplied to the drivers and guards show the seconds quite clearly.

INFLUENCE OF MOTIVE POWER :

The time a train needs from stop to stop is composed of acceleration period, normal speed period and coasting and braking periods. The degree

of acceleration depends upon the excess of tractive force over train resistance. When loads are up to the limit of engine power, it may take a long time to gain normal speed. This is undesirable especially on lines with long gradients and hence the plea for shorter trains on such sections.

From the point of view of passenger traffic, railcars have a special advantage because of their high acceleration power. For goods traffic, Diesel locos are generally better than steam locos from the acceleration point of view but in countries, like India, in which vast deposits of coal are locally available and Diesel oil has to be imported, arguments usually weigh in favour of retaining steam locomotion. When goods trains with their fully-authorised loads run on single line sections, the average speed is not so important as the prevention of slow-downs at signals and while passing stations. In fact, the elimination of stops by increasing non-stop trains influences line capacity very favourably.

Train speeds are also limited by light tracks which will stand certain axle loads only at limited speeds although railcars might be allowed at higher speeds. On single lines, other factors as high acceleration and higher speeds allowed while entering stations are as important. Gain is greatest where distances are longest. For instance, an air-braked goods train with a maximum speed of 31 m.p.h. will attain this speed in about 6 minutes and will have to reduce its speed 4 minutes before its arrival at a station. If the time during which a higher speed of say 40 miles would have been possible is 10, 20 or 30

minutes, the saving in time would have been around 2, 4.5 and 6.5 minutes respectively or 10, 15 and 17% respectively of the total time whereas the maximum speed was 30% higher.

A non-air-braked train with a speed of 20 m.p.h. will reach its maximum speed in 5 minutes and will have to diminish speed 5 minutes before arrival. If the time during which a higher speed of 30 m.p.h. would have been possible is 10, 20 and 30 minutes respectively, the saving in time would have been around 2·5, 5·5 and 8 minutes respectively or 12·5, 18 and 20% of the total time whereas the maximum speed was 50% higher.

The following comparison between a steam locomotive and a Diesel locomotive may be found interesting.

Steam Locomotive—(1) The maximum horse-power is only available at $\frac{2}{3}$ of the maximum speed. (2) Starting power limited to 25% of weight of driving wheels. (3) Foul fire and bad coal may easily cause delays. (4) Time is lost because of watering, refuelling, fire-cleaning and boiler washing.

Diesel Locomotive—(1) The maximum horse-power is available from the start. (2) Starting power limited to 30% of weight on driving wheels. (3) For the same horse-power as a steam locomotive, it pulls out of stations much more easily. (4) More reliability in regard to availability of maximum horse-power. (5) Higher mileage between general overhauls.

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(6) Especially suitable for yard shunting services because of high availability.

TRACTIVE FORCE-SPEED DIAGRAM :

For each locomotive, a tractive force—speed diagram indicates the pulling power available at each speed and these diagrams are supplied by the manufacturers. For steam locomotives, one can make several diagrams for a certain number of pounds of coal burned per hour per square foot of grate; the diagram mostly used is the one in which economic boiler conditions exist.

Diagrams of Diesel locomotives show a continuous speed below which overheating of traction motors has to be feared. In these diagrams, the train resistance on different gradients can be drawn in. Where resistance lines and tractive lines meet, one finds sustained speeds possible.

RAILCARS AND LOCO TRACTORS :

Railcars are marked by a high horse-power per ton of train weight and have therefore a high acceleration capacity. The commercial speeds of such cars can be very high, almost twice those of mixed trains and if mixed trains are replaced by railcars for passengers and by loco tractors for goods traffic, it may be possible to manage both efficiently within the available line capacity. The reason is that the loco tractor trains can be run practically at any time and that railcar schedules, because of their short running time, may find a place where mixed trains could not be run.

Loco tractors of 70 to 120 H.P. can pull trains of 5 to 10 wagons at commercial speeds of 20 m.p.h. These are extensively used on the Dutch, French, Belgian and German Railways. They are assigned permanently to a station and run by station staff themselves to timings which suit the stations and do not hinder other movements.

AUTOMATIC BRAKES AND COUPLING :

The provision of automatic brake in America and Europe (not in U.K.) ensures less overshooting of signals and greater safety. It also ensures higher speeds and no slowing downs while approaching stations.

The introduction of automatic central coupling gives the possibility of heavier trains, *e.g.*, in America, where a goods train may consist of 125 bogie wagons and may be more than a mile long. Japan started in 1926 fitting up all wagons with automatic coupling and Indonesia in 1948. The same preference has been shown by railways in Africa, notably South African, Rhodesian and Sierra Leone railways. The provision of automatic central coupling totally eliminates the delay that is caused for coupling up wagons especially in marshalling yards.

STATION LAYOUTS :

Fully interlocked stations, preferably with arrangements for simultaneous reception of trains, increase capacity and can save 3 to 6 minutes for each crossing. Special high speed points can also increase the speed of trains

by avoiding their slowing down while entering stations. Although there is provision in the General Rules of Indian Railways for allowing a speed of 20 m.p.h. over turn-outs, the speed has been restricted to 10 m.p.h. for reasons of safety. In other countries, however, high speed turn-outs have been provided over which speeds up to 45 m.p.h. are permitted.

CROSSING STATIONS :

Long block sections affect the commercial speed of trains as no other single factor does and they should therefore be broken up wherever possible. The influence of other factors on train speeds, such as despatching, communications, signalling systems, token systems, etc., will be dealt with in a later article.

SOUTHERN RAILWAY TENDER NOTICE

The Deputy Chief Engineer (Construction), Egmore, Madras-8, invites sealed tenders for the following work upto 13 hours on Thursday, the 21st August 1958:—

NAME OF WORK	Approximate cash value of the work	Earnest money	Period of completion	Cost of tender form
	Rs.	Rs.		Rs.
Doubling of track between Vinna-mangalam and Tirupattur in South-West Line.				
Supply of Sand Ballast between Jalarpet and Tirupattur	22,970	680	Two months	10

Earnest money as detailed above is to be paid in advance to the Chief Cashier, Park Town, Madras-3, within 12 hours on Monday, the 18th August 1958 and the receipt thereof attached to the tender without fail.

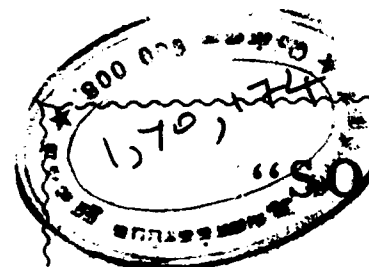
Further particulars and the tender forms can be had from the Deputy Chief Engineer (Construction), Egmore, Madras-8, on production of a receipt for the sum of Rs. 10 towards the cost of tender form paid to the Chief Cashier, Park Town, Madras-3, or any Station Master on the Southern Railway, within 12 hours on Monday, the 18th August 1958.

'Help us to help you'

"Cleanliness is next to Godliness", according to an old adage. Clean surroundings radiate joy. More than that they help in controlling diseases. On Railway Platforms, in Waiting Rooms and in Carriages, etc., where people gather, it is of paramount importance to maintain proper hygienic conditions, to preserve the health of the passengers. You can help the Railways in this fight against diseases by:

Extending your co-operation for keeping the surroundings clean and by availing of the services of Sanitary Staff provided at stations whenever required.

(Issued by Northern Railway on behalf of Indian Railways)



"SOUTHRAILNEWS" NOTICE

October Number of the 'Southrailnews' to be published on 2nd October 1958, Mahatma Gandhi's Birthday

It is fitting and proper that the October Number of any magazine in India is brought out on the Second October, which is Mahatma Gandhi's Birthday. The Father of the Indian Nation also gave some advice to railwaymen, besides setting an example by his austere life. Mahatma Gandhi has also given advice to railwaymen, especially about third class travel and also ticketless travel.

This Special Number bought and preserved, read and referred to, offers unique value to Advertisers. The advertisements are a constant reminder of the products and their utility. You will be interested in this October Number under preparation and would like to advertise in it. We shall thank you to send your advertisement material by 20th September 1958. Kindly advise your space requirements early, so that we may reserve the space and ensure the best possible position for you.

The Mechanical details and rules are given below for your ready reference:

RATES FOR ADVERTISING		Per insertion
ORDINARY:		Ra.
Full Page		100
Half Page		55
Quarter Page		30
COVER:		Not available
Front		250
Back		200
Inside Front		200
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SPECIAL POSITIONS:		
Facing—		
(i) Front Inner Cover		150
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Facing Editorial—		
(i) Full Page		125
(ii) Half Page		70
By the side of Contents and Editorial Notice—Half Page		70
Facing Contents—		
(i) Full Page		125
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MECHANICAL DATA		Screen 100
Blocks		8" x 5 1/2"
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Half Page		4" x 2 1/2"
Quarter Page		Art paper two colours.
Cover Page		Imitation art paper.
Inside Pages		

CIRCULATION

The 'Southrailnews' circulates over the entire area covered by the Southern Railway which includes the States of Madras, Andhra, Kerala, Mysore and Bombay. The Minister and Deputy Ministers for Railways and Transport, the Chairman, Members and Directors of Railway Board, General Managers, Controllers of Stores, Chief Engineers (Civil, Mechanical, Electrical and Signal and Telecommunications) of Indian Railways, Industrialists and Commercial Firms are on our permanent mailing list. Copies are available at Railway Bookstalls.

Though this will be a special number with a multicolour front page it will be sold at the usual price of 37 Naye Paise to the public and 25 Naye Paise to the Railwaymen per copy.

18-A, Mount Road, }
MADRAS-2.

EDITOR,
'Southrailnews'

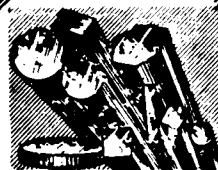


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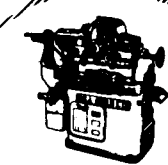
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