

No. RW/RD/8/WB/77-OR

Dated the 17th March, 1983

To

The Chief Engineers of all States, dealing with National Highways/Other Roads

Sub : Research Project R-2-Spectrum of Axle Loads on National Highways—Dissemination of Study Results

As the State PWDs are aware, the Ministry sponsored sometime back a project on the spectrum of axle loads on National Highways with the following objectives :

- (i) To collect data about the frequency distribution of axle loads of commercial vehicles plying on different roads in different regions.
- (ii) To rationalise the procedure of design of road-pavement based on collective data received from different regions.
- (iii) To collect data about traffic intensity and its breakup.
- (iv) To streamline the policy about weights and dimensions of vehicles.
- (v) To evolve a suitable method for design of road crust based on axle load distribution in the region.

2. Earlier to this project there was hardly any data collected about axle loads distribution on commercial vehicles plying on different roads in different regions in the country. The pavement design procedure currently being followed is based on the number of commercial vehicles of more than 3 tonnes laden weight regardless of the axle load frequency distribution. The study on axle load distribution has now been completed in respect of important National Highways in the States of Haryana, Rajasthan, Uttar Pradesh, West Bengal, Maharashtra, Gujrat, Kerala and Tamil Nadu. A summary of the results of the study is enclosed for your information and further necessary action.

3. We have already requested the Indian Roads Congress to undertake a review of the design procedures in the light of available data.

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ANNEXURE

SUMMARY OF RESULTS OF R-2 STUDY OF SPECTRUM OF AXLE LOADS ON NATIONAL HIGHWAYS IN DIFFERENT STATES

State	NH. No.	Section/Count Station	Average daily traffic (commercial vehicles only)	Percentage of different categories of vehicles Buses	Rigid chassis Trucks	Semi Trailer	Truck Trailer	Percentage of single axles exceeding 8 t	Percentage of single axles exceeding 10 t	No. of standard 8.2 t axles per 100 commercial vehicles	Axle equivalency for the road
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
Haryana	1	km 158.7 at Pipli	2508	21.40	78.40	0.20	0.50	32.25	27.38	472	2.31
	8	km 34.5 near Gurgaon	1861	12.46	86.52	0.99	0.03	33.15	26.52	447	2.22
	10	km 68.2 at Asthal Bohar (Rohtak)	1248	22.52	77.17	0.31	Nil	45.94	29.59	460	2.28
Rajasthan	8	Delhi-Ajmer (km 281)	1834	10.60	88.90	0.30	0.20	39.00	34.00	424	2.31
	11	Agra-Jaipur (km 219)	741	29.14	70.38	0.46	0.02	26.19	15.41	353	1.74
West Bengal	31	km 502 near Islampur	772	15.54	84.24	0.22	Nil	38.81	30.28	414	2.07
	34	km 204 near Berhampur	868	17.19	82.79	0.02	Nil	29.75	22.61	326	1.63
	2	km 527 near Bud Bud	2825	8.35	91.07	0.46	0.12	25.31	22.85	555	2.77
Maharashtra	3	Bombay-Agra/Chanwad	1625	9.67	87.26	0.78	2.28	30.32	22.94	355	1.73
	4	Bombay-Pune/Vadgaon	3022	10.74	89.06	0.18	0.02	27.34	11.25	172	0.86
	6	SDEN Road/Nandura	872	7.18	91.10	1.69	0.03	38.02	29.31	451	2.23
	9	Pune-Solapur/Tembhurni	585	8.22	91.53	0.16	0.09	33.94	18.01	242	1.21
Gujarat	8	km 364/0 at Vapi	2202	15.49	84.48	0.03	Nil	31.0	19.0	254	1.26
Kerala	47	km 553/0 to 554/0 (Kariyavattom near Trivendrum)	688	58.30	41.70	Nil	Nil	5.90	2.90	62	0.30
	47	km 342/0 to 343/0 (Edapally-Cochin)	3365	56.47	43.53	Nil	Nil	10.03	3.69	84	0.42
Tamil Nadu	45	km 197/8 near Ulundurpet	923	16.60	79.47	3.62	0.31	29.85	18.60	232	1.14
	7	km 50/2 near Virudhunagar	941	21.60	77.40	0.84	0.16	27.74	19.69	210	1.05
Uttar Pradesh	2	Kanpur-Varanasi/Mooratganj	1082	6.61	92.97	0.31	0.11	38.97	35.24	788	3.93
	24	Delhi-Moradabad/Joya	960	19.70	80.26	0.03	Nil	22.87	19.44	397	1.98
	28	Faizabad-Gorkhpur/Vikramjot	506	16.35	83.65	Nil	Nil	21.98	18.35	318	1.59