ESTIMATES COMMITTEE 1956-57

FIFTY-NINTH REPORT

MINISTRY OF TRANSPORT (NATIONAL HIGHWAYS AND ROADS)



NEW DELHI March. 1957

CORRIGENDA

FIFTY-NINTH REPORT OF THE ESTIMATES COMMITTEE ON THE MINISTRY OF TRANSPORT

Contents page (i): II-C, Line 1: read 'roads' for 'road,'
Contents page (i), II-C, Line 2: add ',' after 'States'
Contents page (i), IV-C(i), Line 1: read 'States'" for
 ''State's''
Page (iv): read 'INTRODUCTION' for 'INTR OUCTON'
Page (iv): line 4: read 'on' for 'of' after 'Report,'
Page 1, para 1, line 22, read 'loads' for 'roads'.
Page 6, bara 12, line 16: read 'States' for 'State'
Page 8, para 18(iii): read 'roads' for 'roads'
Page 10, footnote: read 'Year' for 'Yea'
Page 11, para 30, line 10: read 'road' for 'roads'
Page 11, para 32, line 1: read 'programmes' for 'programme'
Pcge 14, para 40, line 2: read 'mile' for 'milea'
Page 15, para 52, line 3: read 'State' for 'States'

P.T.O.

- Page 18, para 60, heading; line 3; read 'road' for 'real'
- Page 21, para 70, line 2; read "roads' for 'road'
- Page 22, para 71, line 15; add 'of' between 'that' and '1943'
- Page 25, para 82, line 4; read 'cut' for 'out'
- Page 27. para 93. line 8, read 'Rs. 14.76 lakhs' for 'Rs. 14,760 lakhs.
- Page 30, para 104, line 5; read 'overseers' for 'overseer'
- Page 31, para 107, line 11, read '1960-61' for '1956-61'
- Page 32, para 110, line 3: read 'a' for 'at'
- Page 32, para 112, line 4; read 'It' for 'If'
- Page 35. para 1(1)(iv), line 6: read crossings for 'crossing'
- Page 36. para 127. line 1. add 'a between 'is' and 'non-lapsing'
- Page 37, para 131, line 7, read 'Rs.5.25 crores' for 'Rs.5:25 crores'

Page 37, para 132, line 1; read 'sub-divisions' for 'sub-division"

Page 59, item 6(2), line 2; read 'cannot' for 'canot'

- Page 63. heading, line 2; read '31-3-1956' for '3" 3" 1956'
- Page 67, item 9(iv), line 5; read "amounts" for "amounts"
- Page 67, item 10(a), read 'consider' for 'consuder'
- Page 75, S.No. 19, lines 8-9; read 'Committee' for 'Comymittee' and read 'Ministry' for 'Ministr-'

CONSES

			PAGES
C	Compo	sition of the Committee	(iii)
Į	ntrod		(iv)
1.	INTRO		12
II.	Dev	BLOPMENT OF NATIONAL HIGHWAYS AND OTHER ROADS	620
	A .	Introduction	6-7
	B .	Development of National Highways	7 — II
	(a)	Progress upto 31-3-1951	7-8
	(b)	Progress during the First Five Year Plan	8-9
	(c)	Programme during the Second Five Year Plan	9—11
	C.	Development of road, other than National Highways in ex-Part 'C' and 'D' States Sikkim & N.E.F. Agency	11—15
		(i) Progress during First Five Year Plan period	11—14
		(ii) Second Five Year Plan	14-15
	D.	Selected road development Schemes in States	15-17
		(i) Passi-Badarpur Road	15-16
		(ii) West Coast Road in Bombay and Madras States	16
		(iii) Dhar-Udhampur Road and Link Road from Dinga Amb to Ramkot	16-17
	E I	Development of roads of inter State or economic importance	17-18
	E. 1	Front of loops to State Governments and local bodies to meet their	_ 1/-10
	1.	share of the cost of construction of over or under bridges proposed	
		to be built in place of existing road-rail level crossings .	18-20
III.	NAC	PUR PLAN AND PROGRESS OF ROADS THEREAFTER	21—35
	Α.	Introduction	21
	В.	Progress after the Nagpur Plan	21—23
	С.	Development of State Roads	23-24
	D.	Development of rural communications	24-25
	E.	Village Road Co-operative Fund	25 —2 7
	F.	Reasons for slow progress of road construction	27-35
		(i) Cumbersome financial procedure	27-28
		(ii) Delay in timely sanction of staff	28-29
		(iii) Shortage of technical personnel	29-31
		(iv) Lack of mechanisation of road construction work	32
		(v) Lack of advance planning	32-33
		(vi) Lack of proper organisation in States	34
		(vii) Lack of maintenance and uneconomic development of roads	34-35
IV.	Cen	tral Road Fund	36-41
	Α.	Introduction	36
	B.	Administration of the Fund	36-37
	С.	Allocations from the Fund	37-40
	- •	(i) State's Allocations	27-28
		(ii) Ordinary Reserve	38
		(iii) Special Reserve	 AQ
	D.	Cost of Administering the Fund	40-AT
	R.	Status of the Fund	49°.47 .47

.

. V.	Central Road Research Institute	42-50
A	Introduction	42
B	Organisation	42-43
С	Functions	43-46
	(i) Stabilised soil roads	43-44
	(ii) Stablilistation of desert sands	44
	(iv) Road Safety measures	45 45
	(v) Other activities of the Institute	45-46
D	. Programme in the Second Five Year Plan	46-47
E.	Liaison with other organisations	47-48
F.	Co-ordination with State Road Research Institutes	48-49
G	. Practical application of results of research	49
Н	. Residential accommodation for staff	50
A		2
APPENDIC	ues The of souds cloself doe "The state the burner on to she busies of	
1	List of roads classified as National Highways under the National Highways Act. 1056	\$1-52
TT	Statement showing the State-wise allocation of the provision of	34-33
••	Rs. 21 crores for development of roads of inter-State or econo-	
	mic importance	54
III	Statement showing the State-wise break up of the expected physi-	
	cal achievements under the approved programme for the develop-	
T17	List of selected mode conting or leading to important tourset	33
1.	centres proposed to be developed during the Second Plan pe-	
	riod	56
V,	Statement showing the growth of hard surfaced and low type	
	roads in India from 1928-29 to 1950-51 <i>i.e.</i> till the beginning	
	of the First Plan;	57
VI	Model 'Village Road Co-operative Development Scheme'	55-61
VII	Statement showing the details of grants sanctioned from the	
	tually utilised by the States under the village road co-operative	
	development scheme	62
VIII	Statement showing the unspent balances in the allocation	
_	accounts of States from the Central Road Fund as on 31-3-1956	63
IX	Statement showing the average cost of constructon per mile	<i>c</i> .
	Ior different types of roads	04
X	Assembly of India (Logislativa) on 10-11-1047 as emended by	
	that Assembly on 8-12-1949 and by the Parliament of India	
	On 14-4-1950	65—6 7
XI	Statement showing the allocations made to States from the	
	Central Road Fund during the years 1951-52 to 1955-56	68
XII	Statement showing disbursements made from the Ordinary	
,	Plan neriod	60
XIII	Statement showing the summary of conclusions/recommen-	
- -	detions	70-80

.

MEMBERS OF THE ESTIMATES COMMITTEE 1956-57

- Shri Balvantray Gopaljee Mehta-Chairman I.
- Shri B. S. Murthy 2.
- Shrimati B. Khongmen 3.
- Shri Nageshwar Prasad Sinha 4.
- 5. 6. Shri B. L. Chandak
- Shri Amarnath Vidyalankar*
- 7. Shri Venkatesh Narayan Tivary
- 8. Shri Satis Chandra Samanta
- 9. Shri Raghavendrarao Srinivasrao Diwan
- **IO**. Shri M. R. Krishna
- Shri Jethalal Harikrishna Joshi II.
- 12. Shri Bhawani Singh**
- 13. Shri P. Subba Rao
- 14. Shri P. N. Rajabhoj
- 15. Shri Vishnu Ghanashyam Deshpande
- 16. Shri Satyendra Narayan Sinha
- 17. Pandit Dwarka Nath Tiwary
- 18. Shri C. R. Narasimhan
- 19. Shri Raghubir Sahai
- Pandit Algu Rai Shastri*** 20.
- 21. Shri Abdus Sattar
- 22. Shri Lakshman Singh Charak
- 23. Shri N. Rachiah
- 24. Shri Radheshyam Ramkumar Morarka
- 25. Shri Mangelagiri Nanadas
- 26. Shri T. B. Vittal Rao
- Shri Y. Gadilingana Gowd 27.
- 2**8**. Shri Jaswantraj Mehta
- Shri A. E. T. Barrow 29.
- Shri Choithram Partabrai Gidwani. 30.

SECRETARIAT

Shri S. L. Shakdher	 Joint Secretary.
Shri H. N. Trivedi	 Deputy Secretary.
Shri R. P. Kaushik	Under Secretary.

^{*}Resigned with effect from the 20th November, 1956.

^{**}Died on the 6th October, 1956.

^{***}Ceased to be a member upon his election to Rajya Sabha on the 13th December 1956.

INTRODUCTON

I, the Chairman, Estimates Committee having been authorised by the Committee to submit the Report on their behalf, present this Fifty-ninth Report of the Ministry of Transport on the subject 'National Highways and Roads.'

2. The Committee wish to express their thanks to the Secretary and other officers of the Ministry of Transport for placing before them the material and information that they wanted in connection with the examination of the estimates. They also wish to express their thanks to Sarvashri E. A. Naditshah, ex-President, Indian Roads and Transport Development Association, Bombay, S. R. Mehra, Director, Central Road Research Institute, New Delhi, P.L. Verma and J. Subrahmanyam, President and Secretary respectively, Indian Roads Congress, New Delhi for giving their evidence and making valuable suggestions to the Committee.

New Delhi; The 20th March, 1957 BALVANTRAY G. MEHTA, Chairman, Estimates Committee.

I. INTRODUCTORY

India is a sub-continent. The distances to be traversed are tremendous and the natural obstacles in passing from one region to the other are many. The means of communication in India were very defective till as late as the middle of the 19th century. There were a few trunk roads constructed by Indian rulers especially in Nothern India by Moghuls and Shershah. They were thoroughly inadequate even for the very moderate needs of the country in those days. Many of the so-called roads were mere tracks cut by village carts across the face of the country and wheeled traffie for the most part was impossible during the rainy season. Pack animals led by caravans were the only means of access to many parts of the country. Moreover, the roads were unsafe, being infested by highwaymen like Pindaries and thieves. All the same, the state of communication in Northern India with its vast plains easily traversable in dry season, its navigable rivers and a few roads was comparatively less unsatisfactory than in the Peninsular India with its rugged mountainous territory and poor facilities for water transport except on two coastlines. The report of the 'Public Works Commission' appointed by Madras Government is very illuminating in this connection. They wrote-"Nearly the whole of mud roads are only so far made as just to be practicable for carts. They admit of carts moving in fair weather with light roads at a very slow pace and by very short stages. But by far the greater portion of these roads are unbridged and a heavy shower cuts off the communications where a stream crosses a line and they are in many cases unfit to stand the effects of wheels while the surface is wet and in monsoon months they are out of use except for cattle and foot passengers."

2. When the East India Company took over the administration of the country the absence of roads and slowness of locomotion characterised the conditions of communications in India. The Company being mainly a commercial concern took little interest in road making and the state of affairs deteriorated further during the political transition that followed. The limited progress that was made was due to the initiative taken by individual administrators like Lord William Bentinck who devised the idea of a highway connecting the North of India with Bengal resulting in the construction of the 'Grand Trunk Road' linking Peshawar with Delhi and Calcutta. The little importance attached by the Company to the road needs of the civil population is clear from the fact that roads were then placed in charge of Provincial Military Boards instead of being entrusted to a special Public Works Department.

3. India, however, entered upon a new epoch of road making during the time of Lord Dalhousie, who, in addition to his interest in the promotion of Railways also initiated a vigorous road policy.

For that purpose in 1855 over and above the Central Public Works Department, there was created a similar department in each Province replacing the old Military Boards. The second factor which promotcd road development was the influence of Railways., As the Railway construction proceeded apace it became necessary to build roads to feed the Railways rather than to compete with them, leading to a demand-which remains even today far from being completely satisfied-for bridged and metalled roads at right angles to the Railways and giving access to them in all seasons of the year. The progressive policy of Lord Mayo and Lord Rippon with regard to the local self government under which local control over local affairs was provided, acted to some extent as a stimulus to road development. In the Government of India Act of 1919, roads became a provincial subject and the planning, construction and maintenance of roads was left to Local bodies in varying degrees. Poor resources and lack of co-ordinated development resulted in a set back to further road construction. Even the trunk roads fell into a state of dis-repair.

4. After the First World War insistent demands for more and better roads were made due to the appearance of motor vehicles on Indian roads. These demands culminated in a resolution of the Indian Legislature passed in 1927 for the appointment of a committee to examine the question of road development in India. This was the first attempt towards road planning when the Central Legislature appointed the Indian Road Development Committee with Shri M. R. Jayakar as Chairman in 1927. The report of the Committee submitted in 1928 expressed the view that the development of road system was desirable for the general welfare of the country as a whole and in particular, (a) for the better marketing of agricultural produce, (b) for the social and political progress and (c) as a complement to railway development in India. The Report also pointed out that road development in India was passing beyond the financial capacity of Local governments and Local bodies, and was becoming a national interest, which should, to some extent, be a proper charge on Central revenues. The Committee observed that to meet the additional demands and requirements created by the growth of motor transport. some additional taxation might be imposed on motor transport for developing roads over and above the existing taxation for general revenues, and suggested that a well balanced scheme of such additional taxation on motor transport should include (a) a duty on motor spirit. (b) vehicles taxation and (c) licence fees for vehicles plying for hire. À specific recommendation of the Committee was that the duty on motor spirit be raised from As. 4 to As. 6 per gallon and the additional levy so imposed be spent exclusively on road development. As a result of this recommendation, a Central Road Fund was created from 1st March, 1929 but the economic depression following in the wake of the world war resulted in money for the roads being cut to the core and in some cases the Central Road Fund was used even for maintenance. The years following the inauguration of the Central Road Fund, far from witnessing any increase in the road expenditure.

recorded a diminution in the total amount spent on roads. During these years the taxation on motor transport increased considerably both in Provincial and Central spheres but this was all unrelated to road development.

5. In 1933, the creation of a Federal Trunk Road system was considered and it was proposed that this system might be, in some measure, a federal charge. But due to the emphasis on provincial autonomy roads continued to remain a provincial subject in the Government of India Act of 1935.

6. It was not until the Second World War that the deteriorating condition of India's roads engaged serious attention of the Government. On the conclusion of hostilities, the Indian Roads Congress, as a body primarily interested in the development of road communication in India, considered the post war planning for road development and passed a resolution in October, 1943 dividing the roads on an All-India basis into four classes (i) National Highways, (ii) Provincial Main Roads, (iii) District Roads and (iv) Village Roads. In December, 1943, the Central Government convened a Conference of the Chief Engineers of Provinces and States at Nagpur from 15th to 18th December to prepare a road development plan for the whole of This conference took a 20 year view and proposed that at the India. end of that period, no village in a well developed agricultural area should remain more than 5 miles away from the main road. It recommended inter-alia that (a) roads should be divided into four classes, namely, National Highways, Provincial or State Highways, District Roads and Village roads, (the National Highways were defined as highways running through the length and breadth of India connecting major ports, foreign highways and capitals of Provinces and of large States and including roads required for strategic movements for the defence of India) and (b) Centre should assume financial responsibility for the construction, development and maintenance of National Highways and they should have an effective say in the use and control of these highways.

7. The Central Government alter negotiation with the States, assumed full financial responsibility with effect from 1-4-1947, for the development and maintenance of certain routes approved by them provisionally as suitable for inclusion in the system of National Highways. Upon the creation of the Part B States and the new part C States under the Constitution, the National Highways scheme was extended to those States also.

8. Under Entry 23 of the Union List, Parliament has exclusive power of legislation with respect to Highways which are declared to be National Highways by or under law made by Parliament. A bill was, therefore, introduced in Parliament on 7th August, 1956, by the Union Minister for Transport and Railways known as National Highways Bill which provided for the declaration of 39 routes as National Highways and for their development, construction and maintenance. It is regrettable that it should have taken 9 years for introducing the National Highways Bill, when the Central Government had assumed full financial responsibility for the development and maintenance of certain routes from 1-4-1947. Commending the Bill to the Lok Sabha on the 13th August, 1956, the Union Deputy Minister for Transport and Railways said that the National Highways. Bill represented another land mark in the history of India's development and it was for the first time that the Central Government proposed to take over direct statutory responsibility for certain highways in the States. The Bill was passed by both the Houses of the Parliament and emerged as the National Highways Act, 1956.

9. This in nutshell gives a brief history of India's road development from the early days of the British period till the assumption of dircet responsibility by the Central Government in the matter of road development in India. During all this period sporadic efforts were made by individual administrators but no co-ordinated policy of road development was followed with the result that a very great need of the country remained unsatisfied and the country's economy suffered a lot on account thereof.

10. The extent to which this country is lagging behind other countries, in so far as the network of roads is concerned, will be clear from the following table:—

Country		Road mileage	Population (000)	Area in sq. miles	Average Road Mileage		
		(000)	1221		per lakh of popn.	Per sq. mile of area	
India		246.72	35,68,79	12,21,026	69·1	0.5	
Great Britain	•	183-80	50,302	94,208	365•4	2.0	
Switzerland .	•	30.46	4,749	15 ,944	641 • 2	1.9	
Belgium .		38-96	8,678	11,778	449.0	3 ·3	
prance		515-73	42,238	2,12,736	I 22 I·O	2.4	
U. S.		3 308 .98	15,43,60	30,22,275	2143.7	I·I	

Comparison of Road Mileage in various countries

11. There is thus a basic difference between India and some of the advanced countries of the West in regard to the principal objectives to be achieved in planning road development. This arises from the fact that in India the mileage of roads is woefully inadequate, whereas the density of roads in U.K. and U.S.A. has nearly reached the saturation mark. In U.K., U.S.A. and other advanced countries of the West the primary need at the present time is not so much to build new roads and bridges as to improve the existing roads to meet the needs of growth of modern traffic. In those countries, there are no centres of population where a road does not reach. On the other hand, the sizes, weights, and load carrying capacities of their vehicles and the volume and speed of their road traffic are, for ever, rising up due to which they have to widen the carriage way of the road to cope

with the increasing number of motor vehicles, to thicken the pavement of the road to stand up to the weight of modern traffic, and to improve curves, gradients, crossings and other geometrics to meet the requirements of high speeds of travel. Their programmes of improvement have reached a stage where elaborate investigation and research are necessary to identify and solve their traffic problems. But we have to restrict our programmes of improvement to the bare minimum so that we may go faster on providing new roads and bridges where none exist. Refinements of road construction will have to wait for some time to come.

II. DEVELOPMENT

OF NATIONAL HIGHWAYS AND OTHER ROADS

A. Introduction

12. The Conference of Chief Engineers convened by the Government of India, which met under the Chairmanship of Mr. J. Vasugar, Consulting Engineer, Roads at Nagpur in December, 1943 was the first serious attempt to consider ways and means of planning future road development in the country. The Conference realised the need for a co-ordinated plan of road communications for India to open up the countryside, to furnish access to markets for agricultural and other produce and to bring about economic, social and cultural contacts. The main recommendation of the Conference which formed the basis of the Nagpur Plan was the classification of roads of India into four categories namely, National Highways, State (Provincial) Highways, District roads and Village roads. The Conference sug--gested that the Central Government should accept full liability for the development and maintenance of National Highways, while other highways or roads would continue to be the responsibility of the State. The Central Government would be responsible for co-ordination and control, standards and specifications, settling priorities, and general administration and inspection in respect of National Highways for which a strong administrative and technical organisation was proposed at the Centre.

13. Most of the recommendations in the Nagpur Plan were accepted throughout India by the Governments of those days and they have since been largely accepted by the present Central and State Governments. As recommended in that Plan, the Government of India took over full liability with effect from the 1st April, 1947 for the development and maintenance of certain roads in the States accepted by them provisionally as suitable for inclusion in a system of National Highways. Under the Constitution of India the subject "Highways declared by or under law made by Parliament to be National Highways" was included in the union list while other Highways came under the jurisdiction of the States. The Constitution also conferred powers on the Central Government to give directions to a State as to the construction and maintenance of means of communication declared to be of national or military importance. Further, with the creation of Part C and Part D States under the Constitution, the Ministry of Transport were entrusted with the overall responsibility for the development and maintenance of roads in those States. They were also entrusted with the responsibility for the development of certain selected roads under the charge of the Central P. W. D. in Sikkim, roads in the North East Frontier Agency, the West Coast Road in Madras and Bombay (now Kerala, Mysore and Bombay) States and the Passi-Badarpur Road in Assam. To the list of selected roads, the Dhar-Udhampur Road in Jammu and Kashmir State was added in 1954-55. The list of roads, classified as National Highways, according to the National Highways Act, 1956, is enclosed as Appendix I.

14. Thus the work devolved on the Ministry of Transport (Roads-Wing) at the Centre in the matter of construction, development and maintenance of roads in India consists of:

- 1. Development of National Highways.
- 2. Development of roads other than National Highways in the ex-Part 'C' and Part 'D' States, Sikkim (roads under the charge of the Central P. W. D.) and N. E. F. A., and certain other selected road development schemes in States viz., the Passi Badarpur road in Assam, the West Coast road in Madras and Bombay (now Kerala Mysore and Bombay) States, and the Dhar-Udhampur road in the Jammu and Kashmir State.
- 3. Development of roads of inter-State or economic importance for which the Government of India had agreed to give grants from a special provision approved by the Planning Commission.
- 4. Grant of loans to the State Governments and Local bodies to meet their share of the cost of construction of over or under bridges proposed to be built in place of existing road-rail level crossings.
- 5. Grant of financial assistance from the Central Road Fund. for the development of roads in States, road research etc.

B. Development of National Highways

(a) Progress upto 31-3-1951.

15. As stated earlier, the Government of India accepted with effect from the 1st April, 1947, full financial liability for the development and maintenance of certain roads provisionally approved by them for inclusion in a system of national highways. On 1st April, 1947 the total length of the roads provisionally accepted as national highways was 13,400 miles. Consequent on partition and the integration of the former princely states with the Indian Union some additions were made to the provisional National highways system and as a result, the present total length of these roads is about 13,800 miles. On the 1st April, 1947 the selected national highway routes had approximately 1,600 miles of missing road links and thousands of missing culverts and bridges out of which about 150 were bridges on large rivers. In addition, about 9,000 miles of these roads had low-grade surface.

16. In view of the limited funds available, it was decided that first priority should be given to the construction of the missing road. links and bridges on the more important routes, improvement of existing roads being assigned a comparatively lower priority except in cases where the traffic was heavy. Up to the beginning of the First Five Year Plan, *i.e.*, up to the end of 1950-51, only about 110 miles of missing links and 3 large bridges were constructed and about 1,000 miles of existing roads improved. A total expenditure of Rs. 623.49 lakhs was incurred on the development of National Highways from 1947-48 to 1950-51.

17. The progressive growth in the mileage of National Highways through the construction of missing links has been as under up to the beginning of First Five Year Plan:-

	Miles
1947-48	12,200
1948-49	12,250
1949-50	12,280
1950-51	12,310

18. The Committee regret to note that the performance after the withdrawal of British power from India and till the launching of the First Plan, was extremely poor in the matter of new construction. Four and a half valuable years were virtually lost in doing very little. The position of arrears in regard to the national highways was, broadly speaking, as under on the 1st April, 1951 when the First Plan came into force:-

(i) 1490 miles of missing links to be constructed.

(ii) 147 major bridges to be constructed; and

(iii) 8000 miles of low grade surface road to be improved.

(b) Progress during the First Five Year Plan

19. The First Five Year Plan included a provision of Rs. 27.8 crores for the development of National Highways. As the funds provided were inadequate for constructing all the missing links and bridges, only the more important arterial National Highways joining the main State capitals, major ports, and strategic points were selected for the purpose of closing the gaps and for providing at least one-lane asphalted carniage-way. The national highway routes parallel to these arterial highways and cross links were given comparatively low priority. The total cost of programme to be taken up was limited to Rs. 57.8 crores *i.e.* roughly 200 per cent. of the expenditure ceiling fixed in the Plan. The un-finished projects at the end of the Plan were to be carried over to the next Plan to ensure continuity of work and full utilisation of the executive organisations built up in the First Five Year Plan period.

20. The programme for the First Plan period provided for taking up the construction of 1250 miles of missing links and 75 major bridges, in addition to a large number of minor bridges and culverts, and the improvement of 6,000 miles of existing roads, the targets to be attained by the end of the First Plan period being completion of the construction of 640 miles of missing links, 40 major bridges, besides minor bridges and culverts and the improvement of 2,500 miles of existing sections of national highways.

21. Against these targets, 636 miles of missing links and a large number of culverts and bridges including 30 major bridges were constructed, about 4000 miles of existing sections improved and provided with one-lane asphalted carriageway, and about 400 miles of the improved sections made fit for two-lane traffic. In respect of improvement works, the actual achievement was nearly twice as much as originally envisaged, while in the construction of missing links the target was practically reached. Though the construction of 72 major bridges, was taken up, out of 75 proposed, there was a shortfall in the completion target in so far as out of a target of 40 bridges to be constructed in that period only 30 could be completed. It was explained to the Committee that this was mainly due to the fact that these bridge works took considerable time in preliminary investigations, selections of sites, and preparation of designs and detailed estimates before actual execution could be taken up. The estimated total expenditure during the First Five Year Plan period was Rs. 27.70 crores, which was practically up to the target figure of Rs. 27.80 crores.

22. In regard to the financial targets, as against a provision of Rs. 7.5 crores for the construction of missing links, the total expenditure incurred during the Plan period was Rs. 6 crores. When asked to explain this shortfall of Rs. 1.5 crores, the representative of the Ministry informed the Committee that this was probably due to an over-estimation because the physical target in that regard had been achieved.

23. The progressive growth in the mileage of National Highways during the First Five Year Plan period has been as under:-

	Miles
1950-51	12,310
1951-52	12,360
1952-53	12,500
1953-54	12,610
1954-55	12,750
1955-56	12,946

(c) Programme during the Second Five Year Plan

24. At the end of the First Plan, work was in progress on the construction of 614 miles of missing links and hundreds of culverts and bridges, including 42 major bridges, the improvement and asphalting of nearly 3,000 miles and the provision of two lane carriage-way on about 300 miles of national highways.

25. A provision of Rs. 55 crores has been included in the Second Five Year Plan for the development of National Highways. In the Second Plan as in the First, the programme will cover mainly the construction of missing links and major bridges and the improvement of existing sections of National Highways to cater to the needs of traffic. The total cost of the works in progress or to be commenced under the Second Plan will be about Rs. 87.5 crores consisting of thefollowing main items:

	Rs. in crores*.
Works in progress carried over from the	€ <u>X</u>
First Plan including Bannihal Tunnel	30·0
Length of missing links and diversions	
(600 miles)	10.2
Major bridges (60)	20.0
Minor bridges	5.0
Improvements of existing sections (1,700	
miles)	7·0
Widening of carriageway of existing	
sections from 12 ft. to 22 ft. (3,000 miles).	15.0
	Total 87.5

26. In terms of physical achievements, about 12,00 miles of missing links and new diversions (including 614 miles in progress at the end of the First Plan period) are proposed to be taken in hand under the Second Plan. Out of these 1200 miles, about 900 miles are expected to be constructed during the Second Plan period. The balance of work will be carried over to the Third Plan period. With the construction of 900 miles of new lengths in the national highways system, the actual length of National Highways will rise from 12,900 miles as at the end of the First Plan period to 13,800 miles by the end of the Second Plan period. That is to say, all missing road links in the national highway system are expected to be constructed by the end of the Second Plan period.

27. Besides the construction of the missing links, it is proposed to take in hand during the Second Plan period the construction of 116 major bridges (including 42 bridges in progress at the end of the First Plan), the improvement and asphalting of 4,700 miles of existing sections (including 3000 miles in progress at the end of the First Plan), and the widening of 3,300 miles (including 300 miles in progress at the end of the First Plan) of the improved sections of National Highways to two-lane carriage-way. It is expected that during the Second Plan period, 60 major bridges will be completed and 1,500 miles of improved sections widened to two-lane-carriage-way. Work on the improvement and asphalting of 4,700 miles of existing sections of National Highways is expected to be completed during the Second Plan period.

^{*} Second Five Yea Plan-p. 477

28. The Committee observe from the foregoing paragraphs that so far as National Highways are concerned, the Second Plan confines itself only to the completion of gaps in the existing system. As regards the number of bridges to be constructed in order to make the highway system complete in all respects, the plan provision falls short of that even in so far as there will still be left out certain major bridges to be carried over to the 1 hird Plan. The Committee are sorry to note that not a single additional highway is proposed to be added to the existing system of National Highways in the next five years. They are, however, informed that towards the close of the current plan, it might be necessary to examine the question of expansion of the National Highway system and if it is decided, to make any additions to the system, the required funds may be provided in the Third Plan.

29. The Committee do not consider this assurance as a very satisfactory one. In fact the Ministry have themselves admitted that there have been persistent demands from States for additions to the existing system. During the discussion on the National Highways Bill in the Houses of Parliament, this question was raised by many of the members. With the re-organisation of States and the establishment of new industries and steel plants, it has assumed added importance. The Committee are, therefore, of the view that the Ministry should, right from now, give attention to this problem and find out in consultation with other Ministries and the State Governments, the areas where development is bound to be very rapid during the Plan period and decide what additional roads should be included in the list of National Highways.

C. Development of roads other than national highways in ex-Part 'C' and 'D' States, Sikkim, and the N.E.F. Agency

30. Development of roads in the ex-Part 'C' States with legislatures was primarily the responsibility of the State Governments concerned except for general administrative control exercised by the Central 'Government. The Central Government gave loans for capital works on these roads to the States concerned. The necessary provision for the grant of loans used to be made in the budget of the Ministry of Finance. The administrative Ministry concerned was the Ministry of Home Affairs, but the advice of the Ministry of Transport used to be taken in regard to the budget provision to be made for the grant of loans for capital expenditure on roads works.

31. The Ministry of Transport were responsible for finding funds for the development of roads in the other Part 'C' States *i.e.*, Kutch, Manipur and Tripura, the Andaman and Nicobar Islands, Sikkim (roads under the charge of the Central P.W.D.), and the N.E.F.A.

(i) Progress during First Five Year Plan period

32. The road development programme of the States or areas for the First Five Year Plan period were prepared by including works altogether estimated to cost about 100 per cent. more than the expenditure ceiling fixed in the Plan for each State or area with a view 3 LSD.-2. to secure proper phasing of the programme for efficient and economic execution of the works and to provide for continuity of work in the Second Plan period. The following table indicates the provisions made in the First Five Year Plan for the development of roads in these States or areas, the cost of the programmes approved, the total cost of works sanctioned, and the estimated expenditure during the First Plan period:

Name o	f State	or a	108	Provision in the 1st Plan	Total cost of the approved programme	Total cost of works sanctioned	Estimated expenditure during the 1st Plan
Kutch		•		<u>58.30</u>	103 . 52	75.76	48.52
Manipur	•	•	•	81 · 30	158-52	8 0 · 96	59-41
Tripura	•	•	•	128.00	196-94	223·66	90°17
Andaman	and	Nic	obar	75.00	111.00	81 · 30	44 • 45
Sikkim		•	•	24.00	48·20	47.02	9·97
N.E.F.A.	•	•	•	185.00	185.00	9 6 ·38	89.17

(Figures in lakhs of Rs.)

33. The estimated physical achievements during the First Plan period in these States or areas were as indicated below:

							New Construction (miles)	Improvement (miles)	
Kutch		•					260	30	
Manipur		•					40	160	
Tripura							130	25	
Andaman	&	Nicot	ar		•		Ĩ	102	
Sikkim		•	-					21	
N.E.F.A.	•		•	•		•	110 miles of roads and 72 miles of bridle path	100 miles of roads and 26 miles of bridle path	

34. The Committee note with regret that the progress in these States and areas has not been very encouraging both in terms of financial and physical achievements. It has been particularly slow in Andaman and Nicobar Islands. Sikkim and N.E.F.A. The Committee hope that more attention will be given to these areas during the Second Plan.

Andaman & Nicobar Islands

35. In the Andamans and Nicobar, the development programme was divided under two heads:

(i) Road development in the area in and around Port Blair, and

(ii) Road development in the colonisation and settlement areas.

36. The First Plan for these areas provided mainly for the reconstruction and improvement of roads in and around Port Blair which. had been damaged and neglected during the Japanese occupation of these islands. The total length of these roads was 130 miles. Major and extensive repairs practically amounting to new construction had to be carried out on these roads. 102 miles of these roads were reconstructed and improved. Further, a survey of 11 miles of new roads in the headquarters area was also taken up and completed.

37. As regards survey and construction of new roads in colonisation and settlement areas, the difficulties retarding the progress of work were mainly lack of survey maps of the Islands except for a small area around Port Blair, with the result that a special survey had to be undertaken for every projected road in the interior in order to determine the alignment etc., and to prepare the detailed estimates and plans for actual construction. The total length of new roads to be surveyed and thereafter taken up for construction during the First Plan period was 72 miles out of which survey of only 38 miles could be completed. The survey of the remaining 34 miles was given up because of a change in the Plan for resettlement and colonisation. The construction of roads already surveyed is being taken up in the Second Plan. The Committee were informed that for the survey and construction of new roads a Survey division was established towards the close of the First Plan and that an additional executive engineer's division would be added shortly.

38. The Committee regret to observe that lack of an overall survey of the islands, has been responsible for slow progress of road construction work there. They feel that a detailed and overall geographical survey of the islands is a pre-requisite and therefore, recommend that the Government should carry out this job very expeditiously before any major plans of colonisation and settlement can be given practical shape. The Committee hope that once this is done, the islands will be well served with good roads and will attract settlers.

Sikkim

39. The progress of road construction in Sikkim has been explained to be slow in the First Plan due to shortage of labour which was caused by the large demand of labour from the Chinese Government for transport of rice to Tibet as also because of the unwillingness of contractors to tender for works on high altitudes. Other reasons were the initial difficulty in setting up an adequate executive organisation in the area and the short period of working season during a year. The progress of execution of work has, however, been encouraging in the latter half of 1955-56 and the first half of 1956-57, the expenditure for the respective periods being Rs. 6.6 lakhs and Rs. 10.3 lakhs and the C.P.W.D. would need Rs. 24.57 lakhs for the whole of the current financial year.

40. Here also a new engineering division has been added. As contractors are not forthcoming to take up works in sufficient numbers the C.P.W.D. will carry out the works wherever feasible by departmental labour. To attract sufficient labour to work at very high

altitudes, as in the case of the Gangtok-Nathula Road beyond the 20th miled, the C.P.W.D. have suggested an *ad hoc* increase of 50% over the schedule of rates applicable to normal conditions and this would be done if found justifiable.

41. The Committee were also informed that the Government of India have set up an inter-departmental committee at Joint Secretary's level to review from time to time the progress of execution of road construction works in the Indo-Tibetan border areas. The Committee hope that a proper followup of all the measures detailed above would accelerate the tempo of work in these areas, wich were neglected in the past.

(ii) Second Five Year Plan

42. The salient features of the road development programmes being undertaken during the Second Plan period in the ex-Part 'C' States without legislatures, the Andaman & Nicobar Islands, Sikkim, and N.E.F. Agency are given below:-

Kutch

43. The Planning Commission have fixed an expenditure ceiling of Rs. 78.26 lakhs. The total cost of the works carried over from the First Plan and of those to be commenced will be about Rs. 104 lakhs. It is expected that about 280 miles of new roads would be constructed and 28 miles of roads black-topped during the Second Plan period.

Manipur

44. The expenditure ceiling has been fixed at Rs. 190 lakhs and the total cost of the programme to be approved (including works carried over from the First Plan) will be about Rs. 257 lakhs. The programme envisages the formation of about 300 miles of new roads, improvement of 150 miles and surface painting of 65 miles of existing roads, the construction of 12 major bridges and a number of suspension bridges, culverts and minor bridges.

Ттірита

45. The approved financial outlay on road development during the Second Plan period is Rs. 304 lakhs. Against this provision, works altogether estimated to cost Rs. 424 lakhs would be undertaken, including works carried over from the First Plan. It is proposed to undertake the construction of 78 miles of new roads, metalling of 167 miles of existing roads, black-topping of 112 miles of the Assam-Agartala road and the construction of 80 miles of village roads. About 1180 running feet of bridge work would also be completed during the Second Plan period.

Andaman & Nicobar Islands

46. The Planning Commission have agreed to an expenditure ceiling of Rs. 100 lakhs. The programme of works to be undertaken would amount to Rs. 131 lakhs. The programme would provide for the formation of nearly 90 miles of new roads in the colonisation area, improvement of about 40 miles of existing roads and the construction of six bridges.

N.E.F.A. Agency

47. The expenditure ceiling has been fixed at Rs. 235 lakhs. The total cost of the programme to be undertaken would be about Rs. 400 lakhs.

Sikkim

48. A provision of Rs. 50 lakhs has been made in the Central Sector of the Second Five Year Plan for road development in Sikkim. The Ministry of External Affairs have, however, approached the Planning Commission for raising the provision to Rs. 200 lakhs in view of the need for developing certain roads in North Sikkim. If this is agreed to, apart from developing the Gangtok-Nathula Road, about 50 miles of roads would be constructed in North Sikkim and another 80 miles of motorable/jeepable roads constructed to connect several other parts of Sikkim like Ranikhola, Pakyong, Pachikola, Dikhing, Rangpo, Rorathang, Rhenock, Rishi and Rongli. The Committee hope that the Planning Commission would accede to the Ministry's request in view of the strategic importance of the region.

D. Selected Road Development Schemes in States

49. The Roads Wing of the Transport Ministry is also entrusted with the overall responsibility for the development of certain selected roads, viz., the Passi-Badarpur Road in Assam and the West Coast Road in Madras (now Kerala and Mysore) and Bombay States. In 1954-55, the Dhar-Udhampur Road in the Jammu and Kashmir State was also taken over under this scheme. A brief resume of the progress of work on these roads is given below:

(i) Passi-Badarpur Road

50. This road is intended to provide a through road link from Shillong to Agartala. The entire scheme is expected to cost about Rs. 1.45 crores towards which a provision of Rs. 100 lakhs was included in the Central Sector of the First Five Year Plan. Estimates for works amounting to Rs. 79.65 lakhs in the aggregate (including four bridge works) have been sanctioned so far. The work on the construction of the road proper, which is about 82 miles long, has nearly been completed and work on bridges is in progress. An expenditure of about Rs. 70 lakhs is estimated to have been incurred on the project during the First Plan period. For completing the bridge works and for black-topping the road, a provision of Rs. 75 lakhs has been made in the Central Sector of the Second Five Year Plan. The entire work on the road is expected to be completed by the end of 1957-58.

(ii) West-Coast Road in Bombay and Madras (now Mysore and Kerala) States

51. The Government of India were meeting half the expenditure incurred on the development of this road from 1951-52 to In order to accelerate the development of the road, the 1954-55. Government of India decided to bear, with effect from the 1st April, 1955, the entire cost of development works required for bringing the road (excluding the portion in Portuguese territory) to the standard of a through fully bridged road with asphalted one-lane carriageway. The portions of the road to be developed are from Panval (near Bombay) to Sawantwadi and from Kumta (in Mysore State) through Madras State to the border of the former Travancore-Cochin State. From this point there is a national highway going up to Cape Como-The total length of the road to be developed in the Bombay rin. State is about 291 miles, while the total length in the Mysore and Kerala States is about 329 miles.

52. Estimates for 112 works aggregating Rs. 228.01 lakhs (Rs. 57.93 lakhs for works in the old Bombay State and Rs. 170.08 lakhs for works in the Madras States—now Mysore and Kerala)—have been sanctioned in the First Plan period. Further works of a total cost of little over Rs. 6.5 crores may have to be taken up during the Second Plan period for the development of the road to the standard mentioned above. The development of the road is expected to be completed during the course of the Third Plan period.

53. The Central Government's share of the expenditure of the project during the years 1951-52 to 1954-55 was Rs. 15:29 lakhs. The estimated expenditure during 1955-56 is Rs. 15:3 lakhs. The provision made for this project under the First Plan was Rs. 100 lakhs. Six miles of missing links and four bridges have been constructed and 25 miles of existing sections of the road improved in the First Plan period. A provision of Rs. 4 crores has been made in the Central Sector of the Second Plan for expenditure on this project.

54. With the completion of these works, major portion of the coastline of the country will have a national highway running more or less parallel to it within reasonable distance. The Committee recommend that this process should be carried to its logical conclusion, so as to ensure that by the end of the Third Plan, the entire coastline of the country is girdled by a National Highway. The Intermediate and some of the Minor Ports should be connected with this National Highway by suitable feeder roads. This will facilitate development of ports and ease the transport problem of the country.

(iii) Dhar-Udhampur road and link road from Dinga Amb to Ramkot

55. It was decided in the latter half of 1954 to construct an alternative road connecting Dhar on mile 18 of the Pathankot-Dalhousie

Road with Udhampur on the Jammu-Srinagar road via. Than, Manpur, Mandi, Ramkot, Kishanpur, Nagrota and a link road from Dinga Amb to Ramkot in the Jammu and Kashmir State. The first named road is intended to provide a more direct road to Srinagar from the border than the existing Pathankot-Jammu road. The second (link) road is intended to connect Udhampur with Dayalachak on the Pathankot-Jammu road by a shorter route than via Jammu and will, incidentally, connect Udhampur with the new railhead at Madhopur by the shortest road route. The total length of the Dhar-Udhampur road and the Dinga Amb-Ramkot road will be about 120 miles. The entire cost of these roads will be met from Central funds. Forty-two works estimated to cost Rs. 113.57 lakhs are at present in progress. The estimated expenditure during the First Plan period is Rs. 21 lakhs. A provision of Rs. 4 crores has been made in the Central Sector of the Second Plan for expenditure on the project. The whole project is expected to be completed by the end of 1958. The Central Public Works Department is in charge of the execution of the Project.

E. Development of roads of inter-State or economic importance

56. In addition to the National Highways, the Central Government have also initiated a Central aid programme in the First Plan (the programme was commenced from 1954-55) to promote the development of State roads falling within the following categories not provided for in the State Plans:

- (i) Inter-State roads necessary for ensuring through communications between two or more States;
- (ii) Roads required for opening up new areas to which railway facilities cannot be provided for in the near future: and
- (iii) Roads which can contribute materially to rapid economic development e.g., in hilly areas and certain recently merged territories which have valuable resources for exploitation.

57. The State Governments were requested to forward proposals in respect of road or bridge works falling under the above categories for which they desired to have financial assistance from the Central Government. Grants were offered keeping in view the recommendations of the State Governments, the comparative merits of the individual schemes proposed and the funds available for distribution as grants to States. Towards the close of 1953-54 the Planning Commission approved of a special provision of Rs. 10 crores for this purpose in the Central Sector of the First Five Year Plan. The total cost of the programme approved was about Rs. 21 crores, the intention being that the unfinished works at the end of the First Plan period would be carried over to the Second Plan and a further grant would be given for completing the unfinished works. A statement showing the State-wise allocation of this provision is given in Appendix. II. The approved programme included over 200 schemes providing for the construction of about 1475 miles of new roads and 12 major bridges and the improvement of about 3000 miles of existing roads in the various States. Another statement showing the break-up of physical achievements under this programme in the various States is given as Appendix III. It is expected that the execution of the programme will go a long way towards improving inter-State communication facilities, opening up new areas to which railway facilities cannot be provided in the near future, and promoting the economic development of some of the backward areas in the country. Up to the end of the First Five Year Plan, 125 miles of new roads were constructed and about 500 miles of existing roads improved. The estimated expenditure during the First Plan period is Rs. 4 55 crores.

58. A provision of Rs. 18 crores has been made in the Central Sector of the Second Five Year Plan for expenditure on the approved schemes carried over from the First Plan and on certain new road schemes to be approved in the northern border region. A few selected roads serving or leading to the more important tourist centres are also proposed to be developed during the Second Plan period. So far schemes estimated to cost altogether about Rs. 19.36 lakhs have been selected for offering grants to State Governments. A list of these selected road works is attached as Appendix IV. Further schemes will be selected and approved after ascertaining from the State Governments concerned the existing conditions of the roads, if any, serving the more important tourist centres, which are to be developed, the nature of the works required to be carried out and the estimated costs.

59. The Committee note that the progress of works on roads of inter-State or economic importance both in terms of physical and financial achievements has not been very satisfactory as against the targets fixed for execution in the First Five Year Plan. The Committee, hope that the tempo of work would be quickened in the Second Plan period and the sanctioned provision of Rs. 18 crores would be fully utilised.

F. Grant of loans to State Governments, and local bodies to meet their share of the cost of construction of over or under bridges proposed to be built in place of existing real-rail level crossings

60. A sum of Rs. 50 lakhs was originally earmarked out of the provision made in the First Five Year Plan for loans to Corporations and Municipalities, for the purpose of granting loans to local bodies and State Governments for meeting their share of the cost of construction of over or under bridges proposed to be built in place of existing road-rail level crossings, particularly in the vicinity of towns. The necessary budget provision was included in the budget of the Ministry of Finance and the Ministry of Transport were entrusted with the administrative responsibility for the execution of the scheme. 61. The Ministry of Transport invited State Governments to submit proposals for the grant of loans under the scheme. The proposals received were examined and classified as priority I, priority II, priority III, priority IV schemes, after taking into consideration the intensity of road and rail traffic passing through each level crossing, the importance of the road on which the level crossing was situated, and the recommendations of the State Governments concerned regarding the assignment of priority to the works.

62. As the sum of Rs. 50 lakhs originally earmarked by the Planning Commission was found to be inadequate even to meet the demands then received for Priority I Schemes, the Commission, at the Ministry's instance, approved of the provision being increased to Rs. 2 crores, the expenditure during the First Five Year Plan period being restricted to Rs. 50 lakhs and the balance being provided during the Second Five Year Plan period. So far the Ministry of Transport have approved of the grant of loans amounting to Rs. 93.68 lakhs to State Governments and local bodies for certain Priority I Schemes. A further sum of Rs. 103.53 lakhs has been provisionally earmarked, pending receipt of particulars regarding the cost of works, for the grant of loans to the local bodies concerned for meeting their share of the cost of the remaining priority I schemes.

63. Under this scheme the amount of loan is to be advanced to the State Government concerned, who, in turn will pass it on to the concerned local body, where the loan is to be given to a local body. The State Governments will be responsible not only for the repayment of the loans advanced to them but also for the repayment of the loans advanced to local bodies under their jurisdiction. The amount of loan approved for each scheme is to be paid in quarterly instalments upon application being made by the local body concerned to the Government of India through the State Government. The rate of interest to be charged on the loan is to be decided at the time of sanctioning the instalments as it depends upon the market conditions prevailing at the time. The entire loan, together with the interest thereon, is to be repaid within a period of 30 years. The State Government or local body concerned will settle with the Railway Administration the exact share of the expenditure which is to be borne by the road authority. Normally, the Railway Administration will be responsible for the construction of the overbridges proper and the road approaches will be constructed by the road authority.

64. So far only the Governments of Bombay and Rajasthan have applied for the payment of the first instalment of the loans which the Government of India decided to advance to them. These loan instalments amounting to Rs. 2 lakhs for the Government of Bombay and Rs. 1 lakh for the Government of Rajasthan have been sanctioned. It is understood that tenders for the construction of the overbridges for which the instalments have been sanctioned have been invited by the authorities concerned and work has just started or is about to start on these overbridges. 65. So far the remaining State Governments viz. the Governments of Andhra, Madras, and Travancore-Cochin, (now Kerala) have not approached the Government of India for the payment of the loans approved in July, 1955. The further information asked for by the Ministry in respect of the schemes for which a sum of Rs. 103.53 lakhs has been provisionally earmarked, has not also been received from the State Governments concerned. Thus the progress made with the implementation of this scheme has been poor so far. This is mainly because of the time taken for settlement of the arrangements for the execution of the works between the States and the Railway authorities concerned and thereafter on the preparation of designs and estimates by the Railway Authority for the over or under bridge proper and by the Road Authority for the approach roads.

66. The Committee recommend that certain broad rules may be framed to govern such cases in consultation with the Railway Ministry so that a uniform procedure may be evolved for the future. The details can be left to be worked out by the authorities on the spot according to the exigencies of each case. This would enable a speedy settlement of the preliminaries.

III. NAGPUR PLAN & PROGRESS OF ROADS THEREAFTER

A. Introduction

67. Formulated in 1943 the Nagpur Plan laid down a target of 4,00,000 miles of roads to be reached in twenty years, as under:-

(i)	National Highways.	22,000 miles
(ii)	National Trails	3,000 ''
(iii)	Provincial Highways	65,000 ''
(iv)	District Roads:	
	(a) Major	60,000 ''
	(b) Other	1,00,000 ''
(v)	Village Roads	1,50,000
		والمراجع

Total 4,00,000 miles

68. This meant 1,50,000 miles of National Highways, State Highways and major district roads and 2,50,000 miles of other district roads and village roads, to cater to the needs of traffic anticipated upto the next 20 years. This target was fixed after taking into account the requirements of the whole of pre-partition India, including the ex-native States. The figures of road mileage given in the Plan were reduced to 83 per cent. of those figures on the basis of population of post-partition India including ex-native States. The reduced figures to road post-partition India including the ex-native States are 1.23,000 miles of National Highways, State Highways and major district roads and 2,08,000 miles of other district roads and village roads, *i.e.* a total of 3,31,000 miles split up as follows:—

16,600 milles
4,150 miles
53,950 miles
2,56,300 miles

Total 3,31,000 miles

B. Progress after the Nagpur Plan

69. At the beginning of the First Plan period *i.e.* 1st April, 1951, India had about 98,000 miles of hard surfaced roads and about 1,49,000 miles of low type roads, as per table enclosed as Appendix V.

70. At the end of the First Five Year Plan period the mileage for metalled road rose to 1,21,000 miles as against the Nagpur Plan target of 1,23,000 miles and the mileage for un-metalled roads to 1,95,000 miles as against the Nagpur Plan target of 2,08,000 miles. After the Second Plan period it is expected that the mileage for metalled roads will rise to 1,43,000 miles and the mileage of unmetalled roads to 2,35,000 miles. The representative of the Ministry, therefore, held that they were not much behind the Nagpur Plan in respect of total mileage of roads by the end of the Second Plan. He, however, added that there would be deficiency in two respects; one was that there may still remain a number of un-bridged river crossings in the net work of roads of the country and secondly the metalling and black-topping may not be upto the standard and that it was expected that the deficiency would be made good during the Third Plan period.

71. Shri E. A. Nadirshah, ex-President of the Indian Roads and Transport Development Association, Bombay, informed the Committee that road mileage in 1943 was about 2,20,000 miles (88,000 miles of hard surfaced and 1,32,000 miles of earth roads). The Nagpur Plan proposed to raise it to about 2.08,000 miles of earth roads, that is, an increase of about 1,11,000 miles of roads (35,000 miles of hard surfaced and 76,000 miles of earth roads). Therefore, the increased mileage proposed was roughly 50 per cent of the 1943 figures. The Nagpur Plan was prepared on the anticipated traffic requirements of the country by 1963. Since the inception of the First Plan the tempo of the economic development had changed. The increase in production in the First Five Year Plan was about 30 per cent. over the pre-plan period *i.e.* 1950-51, and in the Second Plan it was estimated at about 110 per cent. over that in the year 1950-51 and it will be about 150 per cent. over that 1943. Therefore, the country's requirements of roads by 1961 should logically be about 21 times those of 1943, when the Nagpur Plan was formulated. Shri Nadirshah further added that Nagpur Plan was drafted taking into consideration certain conditions that would be prevalent after 20 years. The conditions were absolutely different after Independence and the experts who drafted the plan could not have thought of all these things at that time. The Nagpur Plan was, therefore, deficient in that respect as sufficient data was not available at that time on roads that existed in different princely States.

72. The Ministry informed the Committee that so far as the basic principles laid down in the Nagpur Plan were concerned. these needed no change. The mileages of roads required on these principles were worked out satisfactorily while preparing the Nagpur Plan. As now in some areas, roads are required closer together than the average assumed at the time of Nagpur Plan the overall mileage figures worked out in the Nagpur Plan may not suffice for attaining the basic targets laid down. No detailed study had been made after the preparation of the Nagpur Plan for determining on maps the mileages that will be actually required for attaining the basic targets.

73. The representative of the Ministry further informed the Committee that at present there was no plan for revising the Nagpur Plan but that had to be taken up. The Nagpur Plan envisaged that in developed areas the villages should not be more than 5 miles away from a 'pucca' road and in non-developed areas not more than 20 miles away from a 'pucca' road. This stipulation was not considered adequate now. The representative further added that the time had definitely come to take up that question and in the next Chief Engineer's meeting in April, 1957, it will be considered.

74. The Committee consider that it is necessary to have a perspective Plan just like the Nagpur Plan which will meet the requirements of the next 25-30 years. The Committee, therefore, recommend that in view of the integration of the princely states and change in the political map of the country after the Nagpur Plan was formulated and in view of the industrialisation that is taking place, the Ministry should devise a plan as early as possible based on existing conditions.

C. Development of State Roads

75. State roads are linked with National Highways and along with them constitute a single road system. Their programme is determined by the States themselves though the Road Organisation at the Centre is consulted. Construction of roads is financed from State revenues which are supplemented by the allocations and grants from the Central Road Fund.

First Five Year Plan

76. Under the First Five Year Plan of the State Governments, the schemes envisaged an increase in the mileage of metalled roads from 10,007 miles in 1950-51 to 12,453 miles by 1955-56 in Part 'A' States and from 7,588 miles to 8,129 miles in Part 'B' States. During the same period the mileage of un-metalled roads was expected to be reduced from 2,199 to 757 miles in Part 'A' States and from 526 to 206 miles in Part 'B' States.

77. The road development plans of Part 'C' States were framed with a view to providing for the construction of as many new roads as possible for opening up areas which are at present inaccessible, while improvement and reorientation of the existing roads to meet the changed administrative requirements and the economic development of the areas is also being given due emphasis.

78. The total provision for road development in the Plans of the States was Rs. 93 crores.

The Second Five Year Plan

79. The States sector of the Second Plan has a total provision of Rs. 164 crores for road construction in the States, the Union territories and the North East Frontier Agency. About 18,000 miles of surfaced roads are expected to be constructed under this programme during the Second Plan period. The programme takes into account the special needs of backward areas which could not be given adequate attention in the First Plan. Some provision has also been made for the improvement of low grade or earth roads constructed during the First Plan as part of rural development programme.

D. Development of rural communications

80. As stated earlier, the Nagpur Plan envisaged to achieve the general objective of bringing every village in a well developed agricultural area within 5 miles from a main road and in a non-agricultural area within 20 miles from a main road. The representative of the Ministry informed that at present there were 1,21,000 miles. of 'pucca' roads but it could not be said that no village was more than 5 miles away from a 'pucca' road. The representative admitted. that no specific study was made in that respect about the correct position, but it was proposed to undertake shortly a broad study of the subject of development of rural communications. This studywould cover primarily the question of integration of various programmes of rural road development included in the Second Five-Year Plan. the adequacy or otherwise of the standards adopted for rural roads, arrangements for the maintenance of rural roads and the extent to which the provision made in the Second Five Year Plan for the development of rural roads would help to achieve the broad targets set under the Nagpur Plan. This work, the representative added was going to start shortly. An Officer was selected who will tour two States, U.P. and Madras and examine the present rural roads and then put up a scheme. On that basis, if necessary, other States will also be examined. There had been some delay because an extra officer for that work could not be sanctioned earlier. The proposal actually arose from the Taxation Enquiry Commission's Report where it was suggested to have a Rural Road Fund. The suggestion was examined but it had not yet been accepted because of certain financial difficulties. The programme was to have a pilot survey in a few States and then put up a scheme and go in for a rural fund, if possible.

81. So far as the progress of rural communications in the Community Project Areas and N.E.S. Blocks was concerned, the Community Projects Administration informed the Committee that till the end of the First Five Year Plan, 6,029 miles of pucca roads and 38,000 miles of kutcha roads were constructed and 22,000 miles of existing kutcha roads were improved. For the Second Five Year Plan no physical target was fixed by the State Governments for the C.D. and' N.E.S. areas, but a provision of Rs. 30,000 for each N.E.S. Block and Rs. 1 lakh per C.D. Block for a period of 3 years had been madeunder the head 'Communications' during the Second Five Year Plan. The total provision under 'Communications' in the C.D. and N.E.S. programme during the Second Five Year Plan amounts to Rs. 19.37 crores.

82. Shri E. A. Nadirshah, ex-President of the Indian Roads and Transport Development Association. Bombay, suggested that the

village roads would be successful if only earth roads wereconstructed properly in the beginning and the soil was stabilised. Every section should be provided with a mechanical grader to level⁴ up the earth roads as the roads will get out up with the passage of wheels. After traffic had developed macadam surface could be put on the roads. This would be cheaper and economical.

83. Shri Nadirshah further added that the present practice of constructing roads in rural areas which consisted of no more than shaping the earth to required grades and levels was hardly meeting the barest minimum of engineering requirements. The only scope whereby expense could be saved was by utilising scientific methods of soil evaluation now practised which sometimes resulted in failure and the original money spent was more or less wasted.

84. The Director of the Central Road Research Institute, Delhi, informed the Committee that in Punjab they had constructed over 200 miles of stabilised soil roads during the last 10 years or so. They were very useful under certain amount of traffic and under certain given conditions of climate. They were able to withstand the weight of bullock carts and loaded heavy lorries.

85. The Committee recommend that the method of construction of rural roads as suggested by Shri E. A. Nadirshah should be considered by the Special Officer who is going to be appointed to undertake a broad study of development of rural communications and he should lay down definite standards for the construction of better rural: roads at a cheaper cost.

86. During their examination of the estimates of the Community Projects Administration, the Committee were glad to learn that the response of villagers in making voluntary contribution of labour was splendid. The Committee, therefore, suggest that the P.W.Ds. of the States and the local authorities in charge of the C.D. and N.E.S. Blocks should co-ordinate properly and launch a systematic programme of the construction of village roads by utilising: voluntary labour, the funds earmarked in the blocks for rural communications and the rural road fund. The programme should be sochalked out as to ensure that the basic target fixed by the Nagpur Plan (viz. that every village in a well developed agricultural area should be brought within 5 miles from a main road and in a nonagricultural area within 20 miles from a main road) is achieved without any exception by the end of the Second Plan.

E. Village Road Co-operative Fund

87. The Standing Committee for roads at its meeting held on the 12th February, 1951 approved a scheme for the development of village roads. The idea was to promote a co-operative scheme for the development of village roads. In respect of each village road constructed, the Government of India was to contribute 1/3rd of the cost, the State Government 1/3rd and the remaining 1/3rd was to be contributed by the villagers concerned in the form of free labour, gifts of land, and cash payments etc. In regard to maintenance, it was intended that the villagers should share the responsibility with the authority entrusted with the maintenance of the work.

88. A model scheme (copy given as Appendix VI) was formulated and circulated to State Governments on the 14th February, 1952. This was meant merely to form a basis for suitable schemes to be formulated by State Governments after studying local conditions in each case.

89. A tentative offer of a total grant of Rs. 15 lakhs from the Central Road Fund (Ordinary) Reserve was made to the State Governments in February, 1952, as the Centre's contribution towards financing such schemes. The offer was subject to the following conditions:-

- (a) The grant should be utilised on schemes drawn up on the basis of the 'Model scheme'.
- (b) The technical approval and financial sanction of the Government of India should be obtained to the estimate for each scheme before any expenditure was incurred.

90. No proposals were, however, received from the State Governments presumably because they experienced difficulties in persuading the villagers concerned to sign formal agreements as required under the terms of the 'model scheme'. The procedure was therefore simplified in June, 1953. Under the simplified procedure the State Governments had only to ensure that one-third of the road work was contributed by the villagers and that the roads constructed under the scheme would be maintained properly for a period of ten years after completion. It was not necessary for the State Governments to submit detailed estimates and plans for the works for the technical approval and financial sanction of the Government of India. It was sufficient if a list of the proposed works indicating the name of the roads, their length and estimated costs, and a map showing the roads were furnished.

91. Subsequently in 1953, at a meeting with some members of Parliament, the Minister of Transport agreed to earmark from the Central Road Fund (Ordinary) Reserve a sum of Rs. 15 to Rs. 20 lakhs annually for this purpose. After further discussion with the Ministry of Finance, a sum of Rs. 60 lakhs was earmarked for the scheme from the Central Road Fund (Ordinary) Reserve for expenditure during 1953-54 and the subsequent two years.

92. Against the earmarked grant of Rs. 60 lakhs, grants aggregating Rs. 48.24 lakhs have been sanctioned so far to 21 States for 1208 road works, estimated to cost a total sum of Rs. 144.72 lakhs. A statement showing the details of the grants sanctioned to the various States under this head and the amounts actually utilised by them upto 30th September, 1956 is given as Appendix VII.

93. The Committee noticed that although the model scheme for the construction of village roads was formulated and circulated to the State Governments as early as 14th February, 1952, and further simplified in 1953, yet only Rs. 6.31 lakhs were utilised out Rs. 48.24 lakhs sanctioned by the Government. The representative of the Ministry replied that when the figure of Rs. 6.31 lakhs was supplied to the Committee, reports from all the States were not received. The total amount utilised was Rs. 14,760 lakhs and even now some of the States had not furnished the figures. So, actually the correct figure would be somewhat higher than Rs. 14.76 lakhs. All the same, the Committee regard the response to the scheme as rather unsatisfactory. In view of the pressing need for the construction of village roads, the Committee suggest that the State Governments should be urged to take full advantage of the scheme.

94. The Committee also feel that the allocation of Rs. 60 lakhs for the village road co-operative fund is too small and recommend that the allocation should be suitably increased and that the panchayats of the villages should be encouraged and brought fully into the picture to take full advantage of the scheme. The feasibility of entrusting the construction of village roads under this scheme to the Gram Panchayats, suitable technical supervision being provided by the State P.W.D. might be examined. This would quicken the progress and encourage people to participate more actively in the programme. The services of the Block Development Officers may also be utilised for the purpose for villages covered by C.D., or N.E.S. Blocks. In their publication. Second Five Year Plan', the Planning Commission have stated that the target for development of village roads cannot be easily set in advance. The Committee do not agree with this view. They are of the opinion that in the absence of a clearly set target, the subject might not receive the full attention it The Committee, therefore suggest that 'statewise' targets deserves. of constructing village roads should be set up and incorporated in the Second Plan.

F. Reasons for slow progress of road construction

(i) Cumbersome financial procedure

95. Shri E. A. Nadirshah, ex-President of the Indian Roads and Transport Development Association, Bombay, in his evidence before the Committee stated that the main hurdle in the way of speedy construction of roads was the cumbersome financial procedure which required to be changed drastically to suit the requirements of a developing country. He explained that in constructing a road, lot of preliminaries had to be gone through after the budget was sanctioned. Then there was a working season during which the construction

work had to be done. It could not be done in monsoon season. Therefore, the time at the disposal of the engineers was rather short. So, if the funds were made continuous it would be better. For instance, if a particular grant was sanctioned for a particular project in a particular year and if that project was not finished in that year, the Chief Engineer or whosoever may be the person must have the authority to continue the work on that project utilising the funds which were not spent in the first year without closing it and writing for another sanction. The main, thing, therefore, was that there should be continuity of funds. For that purpose a road fund should be created in which all the funds sanctioned for construction different roads and bridges should be put and from which fund the Chief Engineer must have the authority to go on spending of course not exceeding the budget limit.

96. The Director of Central Road Research Institute. Delhi. while explaining the reasons for slow progress of construction of roads in India, informed the Committee that considering the pre-war rate of work. India was constructing roads at a speed which was imaginable before. It was, however, true that roads were required to be built much faster. The main bottleneck was the year to year financing. Considering that the construction of a road has to go through the time consuming processes of design, estimating, financial sanction at every stage, calling of public tenders. arrangements of machinery etc., unless the Engineer was able to make actual financial commitments 2 to 3 years ahead, the efficiency of the output would be reduced tremendously. Financing should, therefore, be on a five year basis. He was of the opinion that the existing financial Drocedure was evolved for a different type of Government and had to be drastically changed to suit the requirements of a developing country.

97. That there is considerable force in these arguments would be apparent from the fact that the unspent balances on 31st March, 1956. in the allocations to State Governments from the Central Road Fund amounted to Rs. 966.31 lakhs as per statement attached as Appendix VIII. The Committee, therefore, recommend that the question of simplifying the financial and other procedures should be thrashed out in a conference of Chief Engineers and necessary action taken to rectify the existing defects so that the States do not find any difficulty in carrying out the allotted work in time. In the existing circumstances, when there is a great need for the construction of roads in the country, any, failure to utilise the funds earmarked and to achieve the physical targets laid down should normally be regarded as a reflection on the efficiency of the Chief Engineer concerned.

(ii) Delay in timely sanction for staff

98. Shri P. L. Verma, President of the Indian Roads Congress informed the Committee that if a scheme was projected, the estimates could be sanctioned but the main problem was to get the sanction
for personnel. He suggested that there should be some arrangement for automatic sanction. If the work was sanctioned the Head of the Organisation should be able to sanction the personnel necessary without referring to the Finance Ministry. It was usually experienced that the establishment sanction was much more difficult than the works sanction. Further, there was no financial sanction, for staff employed temporarily even for the next financial year so that it was necessary to get the financial sanction every year to continue the posts. When the financial sanction was received there was a search for personnel through U.P.S.C. etc., and it was not before two to three months that the staff could be recruited. Shri Verma further suggested that these procedural aspects should be thoroughly examined by a Committee to see how the work was done at present and what responsibility was taken in coming to certain decisions and also whether the present routine and procedure was at all conducive to efficient working.

99. The Director of Central Road Research Institute suggested that the problem could easily be solved if the Finance Department laid down certain overall work standards for the various departments saying that for such a bulk of work or load of work such and such should be the staff so that Heads of Departments could carry on within the limit without approaching the Finance Ministry for every detail at every stage. The Heads of Departments might be left free to work within that financial sanction or standard laid down because it was the responsibility of the Heads of Departments to see that the work was done efficiently.

100. The Ministry informed the Committee that in the Chief Engineers' Conference held at Srinagar in June. 1955. it was pointed out that the real impediment to the execution of road development and other engineering works under the Five Year Plan was the difficulty in getting financial sanction to the staff and tools and plants required well in advance of the expected date of commencement of works. The Chief Engineer of Punjab State had suggested that a yardstick for the staff required might be proposed by the Chief Engineers. A sub-Committee was, therefore, appointed to examine the matters in detail and submit suitable recommendations.

101. The Committee regret to note that the sub-Committee appointed by the Chief Engineers' Conference held at Srinagar in June, 1955, to examine this question has not so far submitted its recommendations. They wish that this work had been completed before the commencement of the Second Plan. They strongly recommend that the question of simplified procedure for sanction of funds and staff should be settled expeditiously, so that the targets laid down during the Second Plan are achieved without any hitch.

(iii) Shortage of technical personnel

102. The Director of the Central Road Research Institute, Delhi, informed the Committee that there was shortage of experienced

engineering personnel. He suggested that the age limit of superannuation might be suitably raised and fresh graduates might be over recruited so that they are not over-whelmed with too much responsibility while working on light duty and get trained at the same time. The Director further informed the Committee that the report of the Scientific Personnel Committee of the Planning Commission, was fairly exhaustive. There was, however, a lacuna which could not be understood. It was accepted that the ratio between engineers and overseers was normally 1:4. In the Second Five Year Plan, the target for the output of engineers was something like 6,000 and of overseers 8.000 that is a ratio of 3:4. The natural result would be that a lot of overseers would start working as draftsmen and the engineers as overseers which was not only a waste of effort on the part of the country but would also mean destroying the personality the of engineer by making him work in a different plane for which he was not trained. He further added that so far as draftsmen WCTC concerned, there was an acute shortage and yet the number of Draftsmen who were supposed to be trained under the programme seemed to be very small. What was being called a draftsman today was a mere tracer and was not a draftsman at all. The maximum need today was for draftsmen much more for mechanical than civil. then came overseers and then trained and experienced engineers.

103. Shri P. L. Verma, President of the Indian Roads Congress informed the Committee that in his opinion all the engineers need not be fully trained. After two years' training in the college, out of hundred, the first fifty students should go up for the full four years' training. The second fifty should be picked up after the second year and they should be put into the field for the execution of work. They should go back to the college after 3-4 years for completing their education. This according to Shri Verma had certain distinct advantages. Firstly, a man who had worked in the field would have first hand practical experience of the work and practical training way much more advantageous than theoretical training. When he went back to the college with the practical background, his training would be of a very high order, his personality development would also be a different one. He would be a much more useful engineer than a man who secured a first class degree without much practical experience.

104. Regarding the draftsmen. Shri Verma, informed the Committee that in foreign countries the draftsmen were well organised but in India the profession was not attracting many students because the prospects were not very bright for going very much higher. They liked to be overseer as because there by passing the Institute's examination they become eligible for the Assistant Engineer's post. He further added that there were no Overseers anywhere else in the world except in India.

105. The representative of the Ministry informed the Committee that there was no dearth of engineers for the road work, but shortage of Overseers had been keenly felt in the last few years. Actually the shortage was really linked up with the overall shortage and the question had been considered for the whole of India by the Engineering Personnel Committee which had made recommendations for increasing the output of personnel by expediting the training and opening new colleges. The P.W.Ds. which carried out the road works had a well set organisation and the difficulty was in getting people for a new organisation in out of the way places like NEFA, Tripura, Manipur etc. The process followed at present was of recruiting engineers at the departmental level. The idea was to recruit people and give them some training at the Centre and also depute them for sometime in the States to get experience of road building under actual working conditions. There was, however, a great dearth of experienced people and the States were not in a position to spare any experienced person. Action was, therefore, being taken to retain the experienced persons after superannuation to overcome the shortage. The representative further added that it was proposed to issue a brochure detailing the requirements of personnel and steps will be taken to train the necessary personnel although it would not be possible to fill the gap completely.

106. The Committee feel that without trained personnel it will not be possible to successfully execute the various schemes. The two shall have to match. There is no use having a bigger plan and at the same time have a meagre provision for personnel. Whatever plan is sanctioned there must be necessary personnel to carry it out. The work of road construction has suffered because of the shortage of technical personnel like overseers and draftsmen in the States. The Committee, therefore, recommend that the Ministry should assess the requirements carefully and take some concrete steps overcome the shortage of staff of these categories. The question whether the category of "draftsmen" is really essential or whether it can be dispensed with should also be examined with an open mind.

107. Further, the Ministry should also give full consideration to the views of Shri P. L. Verma and the Director of Central Road Research Institute as given above regarding the future training engineers and other staff and should have the subject fully thrashed out in the coming conference of Chief Engineers and with the representatives of other Central Ministries concerned. What should be regarded as a reasonable ratio of Engineers: Overseers: Draftsmen: tracers should be carefully examined and fixed. Having done that, steps should be taken to see that proper training facilities are provided approximately in the same ratio. The Engineering Personnel Committee have anticipated that in 1956-61, engineering personnel will he in short supply to the extent of about 1,800 graduates and 8,000 diploma holders in different branches. To meet the shortages, they have recommended that the capacity in existing established institutions should be fully expanded and that 18 colleges and 62 diploma institutions should be opened. The Committee hope that these recommendations will be given prompt attention.

(iv) Lack of mechanisation of road construction work

108. There is a school of thought which believes that the slow progress of the construction of roads in India is partly due to manual methods adopted. The advantages of mechanised process claimed by this school are:

- (i) the speed of work is faster;
- (ii) the quality of work is superior;
- (iii) the maintenance cost is lower.

109. Rapid introduction of mechanisation has, however, the following disadvantages:

- (i) It might cut against the employment potential:
- (ii) The initial expenditure will be heavy as the requisite machinery will have to be brought from abroad;

110. The Committee are, therefore, of the opinion that the process of mechanisation will have to be gradual and will have to be introduced on a limited scale. The Committee suggest that at /stretch of 100 miles of road—entirely new construction—might be earmarked for machanised process. The results achieved should be carefully analysed and if the results indicate that there is a net gain, and that the employment potential is not materially affected due to the increased rate of activity then and then only the process of mechanisation should be further extended.

(v) Lack of advance planning

111. Shri E. A. Nadirshah, ex-President of the Indian Roads and Transport Development Association complained that one handicap in the existing organisation had been the want of adequate data both on the engineering properties of materials and soils and on trafic factors mostly due to the inadequacy of personnel to do such work. Further, the year to year planning of road improvements had not created confidence amongst private interests to devote their attention to the production of aggregates for road construction and also for obtaining equipment for road work as would otherwise have been possible if some idea of the scale of road work was made known for a number of years beforehand.

112. Shri Nadirshah further emphasised the need of advance planning in his evidence before the Committee. He stated that the Nagpur Plan was formulated not on the correct basis of available data of materials and other things. If formulated some sound principles for future highway construction in India but most of the estimates were computed on the basis of an empirical formula without detailed survey of local needs. It was just formulated after a preliminary survey by the Indian Roads and Transportation Development Association. In other countries, before a plan was formulated complete statistics and all necessary details were collected. He suggested that the Roads Wing in the Ministry of Transport should prepare statistics before any plan was formulated for the development of roads. It would be better to have even a separate section for that in the Roads Wing just to prepare statistics and that will benefit to a very large extent in formulating the plans.

113. Shri P. L. Verma, President of the Indian Roads Congress, informed the Committee that there should be separate staff for planning alone and they should do only that work and form part of the organisation. Under the present circumstances it was rather difficult to get the staff for planning and the results were, therefore, not very satisfactory. He explained that what was happening was this. Suppose the budget was passed somewhere in March. it reached the Chief Engineers at the end of April or even in May and by the time tenders were drawn and estimates were prepared and sanctioned, the monsoon season intervened. Very little of working season was left with the result that much could not be achieved. suggested that at least a three year plan should be drawn. The first year should be devoted for preparation of the designs etc. In the second year sanctions should be obtained and in the third year the plan should be ready on the drawing board for obtaining financial and technical sanctions. Under planning came also the planning for material and other details. By this procedure, the major difficulties could be overcome.

114. Shri S. R. Mehra, Director of the Central Road Research Institute, informed the Committee that advance planning was very necessary and the very object of the Plan was defeated if at least a percentage of the funds was not assured for say five years.

115. The representative of the Ministry informed the Committee that many of these difficulties have been met by planning on a five year basis. Now the States knew how much they had to spend on roads and planned accordingly. They could order for machinery on the basis of five year plan as the money was available for it. Provision, in fact, was made for twice the amount of work sanctioned *i.e.* 100% over the actual financial allocation in the Plan. In the First Plan a sum of Rs. 27.8 crores was to be spent on national highways but the schemes for twice that amount were sanctioned considering that many schemes would continue even in the Second Plan. There was now continuity of available funds.

116. The Committee suggest that the question of advance planning on a long-term basis should be discussed at the next conference of the Chief Engineers, and steps taken to ensure that maximum advantage is taken of planning on a five year basis.

117. Incidentally, the Committee were given to understand that about 2/3rd of bitumen required for road construction was being produced in India, whereas the balance was imported from abroad. The Committee suggest that vigorous steps should be taken to achieve self-sufficiency in this respect.

(vi) Lack of proper organisation in States

118. One of the viewpoints strongly put forward before the Committee was that the Government departments responsible for road construction in most of the States were inadequate to cope with the large programme of road construction. It was argued that, since the duties of the Engineer-in-Charge of road work also included works of other nature such as buildings, irrigation works etc., considerations for roads had engaged much less attention than was desirable. It was further argued that the achievements of States like Madras where, there was a separate Highways Department, were much better than in other States. The Committee are not in a position to pronounce a categorical opinion on the subject. They are, however, of the opinion that this question needs a very careful examination. They, therefore, suggest that the Ministry of Transport should depute an Officer on Special Duty in consultation with the State Governments to make a comparative study of the patterns of administration in different States, in so far as the Engineering department is concerned. If such a comparative study definitely reveals that the system prevalent in Madras is conducive to better results, other State Governments may be persuaded to adopt that system with such modifications as are considered necessary to suit local conditions.

(vii) Lack of maintenance and economic development of roads

119. Shri E. A. Nadirshah. ex-President of the Indian Roads and Transport Development Association in a memorandum submitted to the Committee stated that many of the roads were old and worne out due to wear and tear by traffic and action of the elements. This deterioration was most noticeable in road surfaces but it was also taking place on the subgrade.

120. He offered the following suggestions for the economic development and maintenance of roads:-

- (i) The roads should be provided with modern surface to cope with increased traffic. The road surface should be such that it is fit for motor traffic; otherwise their maintenance will be heavy and wear and tear of vehicles will be more thus increasing the cost of carriage to consumers.
- (ii) Modern geometrical standards should be adopted on national highways comparing favourably with the standards laid down in the Western countries.
- (iii) The road structure should be strengthened so as to take the additional and heavier traffic and bridges should be built or strengthened wherever necessary to accommodate heavier types of motor vehicles and trucktrailer combinations. The national highways should be capable of carrying an axle load of 18,000 lbs.

- (iv) The maximum width of carriage way on all National Highways should be 22 ft. and sharp bends should be straightened out wherever necessary. By-passes should be provided around big cities and also on ghat portions of roads where necessary. Over-bridges or under-passages at railway level crossing should be provided wherever possible.
- (v) The existing earth roads should be converted into hardsurfaced ones so that over a period of years their proportion to the total mileage will be reduced from about 63 per cent. to about 33 per cent. of the total milege.

121. The Committee do appreciate that the implementation of these suggestions would involve heavy expenditure. The Committee, therefore, recommend that the Ministry of Transport should keep these suggestions before them for gradual implementation, subject to the availability of funds.

122. The Committee understand that there are four types of roads, commonly met in India-Concrete roads, bituminous roads, Water-bound macadam roads and earth roads. The average cost of of different construction per mile types of roads is shown in Appendix IX. The average cost of maintenance is said to be varying over a wide range. Ordinarily it varies from Rs. 2,000/- to Rs. 5,000/- per mile per annum for black topped roads. The Committee appreciate that in view of the high cost involved in putting modern surface it may not be possible to undertake large programmes of converting ordinary surfaced roads into modern surfaced roads. The Committee, therefore, recommend that the Ministry should prepare a perspective plan of gradually converting more of earth roads into hard surfaced ones and for improving the surface of National Highways with a view to economise in the cost of vehicles. Further construction of roads specially in rural areas by soil stabilisation on scientific lines should be encouraged in view of its suitability for light traffic, without any protective treatment.

IV. CENTRAL ROAD FUND

A. Introduction

123. A committee consisting of members of both Chambers ot Central Legislature called the Indian Road Development Committee' also known as the Jayakar Committee was appointed in November, 1927 to report on future road development in the country. The main findings of that Committee were that the onus of road development was passing beyond the financial capacity of provinces, and was becoming a matter of national interest that should, to some extent, be a proper charge on Central revenues. Central money should, therefore, be provided from an additional tax of two annas a gallon on motor spirit, the proceeds being pooled into a fund to be administered by the Central Government with the advice of a standing committee of the Central Legislature and with the assistance of periodical road conferences. The Committee further recommended that one-sixth of the fund should be reserved to the Central Government for administration, research, intelligence and grants for works of special or all India importance and the balance should be allocated to Provinces for approved works according to the ratio of consumption of motor-spirit in each administrative unit.

124. The Legislature, however, fixed the Central Government's reserve at 1/10th instead of 1/6th as recommended by the Jayakar Committee. This was, however, later increased to 15% and still later to 20% in order to enable the Central Government to give somewhat more help to less affluent provinces.

125. The Central Road Fund was accordingly constituted with effect from 1st March, 1929 duly authorised by the Legislative Assembly and Council of States in 1929-30. The resolution was revised and amended subsequently from time to time.

B. Administration of the Fund

126. The administration of the Fund is governed by a resolution on the Road Development adopted by the Constituent Assembly of India (Legislative) on the 19th November, 1947, amended by the same Assembly on the 8th December, 1949 and by Parliament on the 14th April, 1950. A copy of the resolution is given as Appendix X.

127. The fund is non-lapsing fund, primarily intended to promote greater road development and to provide for research and intelligence directed to that end. Within the total sums allocated to each province all schemes are subject to the approval of the Government of India. 128. The standing committee as envisaged in para 9 of the Resolution has, however, ceased to function since the end of the financial year 1951-52 in accordance with a policy decision taken by the Government of India to discontinue all Standing Advisory Committees of Parliament. The functions of the Standing Committee are since being performed by the Minister of Transport.

129. The accounts of the Central Road Fund are maintained by the Accountant General, Central Revenues. Control over expenditure is exercised by the Roads Wing through quarterly reports of expenditure incurred from the Fund which are received from the Accountant General, Central Revenues and the States' Accountants General and Comptrollers in forms prescribed for the purpose.

130. The Committee suggest that since the Standing Committee on Roads has been abolished, an Advisory Committee consisting of the representatives of various State Governments, Ministries of the Government of India concerned and of Chambers of Commerce and Industry and the Automobile Associations etc., may be constituted to advise on matters relating to priorities. co-ordination and future road construction schemes etc.

C. Allocations from the Fund

131. The present rate of customs and excise duty levied on motor spirit for the purpose of road development is 2½ annas per gallon. After deducting the share contribution by aviation spirit from the proceeds of the tax, the balance is transferred as a block grant to the Central Road Fund every year. The annual revenue of the Fund at present is Rs. 5:25 crores roughly including credits to the Special Reserve of about Rs. 1 crore per annum.

132. The fund contains three sub-division viz., the allocation accounts of States, the ordinary reserve and the special reserve.

(i) States' Allocations

133. 80 per cent. of the annual revenue of the Central Road Fund is allocated to the various States on the basis of petrol consumption in each state. The amounts allocated are credited in the Central Road Fund and they can be spent on the construction of new roads and bridges and on the reconstruction or substantial improvement of existing roads and bridges in a particular State. The amount so allocated is about Rs. 3.4 crores per annum at present.

134. A statement showing allocations made to States from the Fund during the years 1951-52 to 1955-56 is attached as Appendix XI.

135. In order to ensure that the money available in the allocation accounts of States is utilised as quickly as possible for the purpose for which it is intended, a review is made at the beginning of each financial year with a view to ascertain:-

> (a) the free balance *i.e.*, the money available for new schemes in the allocation account of each State, taking into

consideration for the purpose of programming, the receipts expected to be credited to the account for a period of two years beyond the financial year;

(b) the unspent balance in the account of each State.

136. The States concerned are then asked for new programmes of road development and/or acceleration of execution of approved schemes, wherever necessary, so that the money available can be utilised to the best advantage of the State as quickly as possible.

٠ŧ.

137. Before incurring any expenditure from the allocations, the State has to obtain the prior approval of the Central Government to the schemes proposed to be financed from their allocations. For this purpose, they are required to furnish broad particulars of the scheme proposed so that the Central Government may satisfy themselves as to the general suitability of the scheme and its proper integration with the road communication system in existence in the area. All proposals for expenditure from the allocations to States are approved by the Deputy Minister of Transport. If an excess occurs or is anticipated on a work which is more than 10 per cent. of the amount approved as debitable to the State's allocations, the State concerned has to obtain the prior approval of the Central Government to the debit of the excess to the State's allocations. If the excess is abnormally heavy, the orders of the Deputy Minister of Transport are taken before approval is given to the debit of the excess to the State's allocations.

138. From the figures supplied to them, the Committee observe that the unspent balance in the accounts of different States in the Fund is very heavy. On 31st March, 1956, it was as much as **Rs.** 966-31 lakhs. The representative of the Ministry explained that this was partly due to a time lag of about two years in the sanction and approval of schemes submitted by State Governments because of the time taken in the survey, design and preparation of estimates. He, however, added that half of this time could at least be saved if everyone was prompt. There was provision whereby if any State lagged very much behind, the money could be given to another State. The Committee consider it very unfortunate that, on the one hand, when there is a pressing need for the construction and improvement of roads to meet the transport requirements of the country, the Central Road Fund is not being utilised expeditiously for the rapid development of roads. This indicates lack of proper co-ordination between the Centre and the States. The Committee suggest that the Ministry of Transport should hold an urgent meeting with the representatives of the States to devise ways and means of proper and prompt utilisation of balances accummulated in the accounts of different States from the Central Road Fund.

(ii) Ordinary Reserve

- 9₁

139. 20 per cent. of the annual revenue of the Fund is credited to the ordinary reserve fund, which is applied to defray the cost of administering the Fund, research and intelligence and upon such special enquiries connected with roads and upon special grants-in-aid for such projects connected with roads as the Central Government may approve. The annual credit is about Rs. 85 lakhs at present.

140. During the past five years, the following special enquiries were undertaken with financial assistance from the Central Road Fund:-

- (a) Field scale experiments for popularising the use of wider steel tyres on bullock cart wheels. A total grant of Rs. 1,10,000 was approved for this purpose.
- (b) Origin and Destination Survey of road traffic in New Delhi which involved an expenditure of Rs. 13,000. This. was undertaken in the year 1953-54.

141. As for special grants-in-aid for projects connected with roads, an amount aggregating Rs. 97,100 was sanctioned during the last three years for certain experimental road works in Punjab, Uttar Pradesh and Madras. Special grants-in-aid from the Ordinary Reserve Fund were also sanctioned to various States for 142 road projects during the past three years. The total of these grants amounted to Rs. 1.82,32,578. In addition, grants aggregating Rs. 48.24 lakhs have also been sanctioned from the Ordinary Reserve so far towards the cost of village road projects under the terms of village road co-operative development scheme.

142. Normally, the amount available in the Ordinary Reserve, after meeting expenditure on administering the fund on research and intelligence and special enquiries etc. is utilised for road development schemes of all-India importance *c.g.* inter-state roads and bridges on the border between States and construction of roads and bridges in backward areas and the comparatively poor states.

143. As in the case of allocation accounts of States, a review is made at the beginning of each financial year with a view to ascertain the amount of money available in the Reserve for fresh grants. If after taking into account any proposals already under consideration for ad hoc grants in respect of any specified scheme, a substantial freebalance is available in the Reserve, States are invited to submit proposals for important road or bridge projects for which they may require financial assistance from the Reserve. After the Central Government has approved of a grant for a particular scheme, which is generally a percentage of the cost of the scheme, subject to a maximum limit (in exceptional cases the Central Government may sanction a grant to cover the entire cost), the State concerned is required to submit the detailed estimates for the scheme, together with the connected plans and design for the prior technical approval and financial sanc tion of the Central Government. The project is then dealt with exactly in the same way as a national highway project. A statement showing disbursements made from the Ordinary Reserve during the First Five Year Plan period is attached as Appendix XII.

144. In this connection, the Committee refer to para 38 of their Forty-fifth Report, where the necessity of improving the bullock cart has been stressed. Improvement of the bullock cart-providing rubber tyres to them, for example, will have a good effect on the maintenance of village roads as well. The Committee, therefore, suggest that the feasibility of giving suitable research facilities from the Central Road Fund for the improvement of bullock-carts should be carefully examined.

(iii) Special Reserve

145. This sub-division of the Central Road Fund is intended to accommodate contributions made from sources outside the Central Road Fund proper for financing particular schemes in which any other Ministry or Department may be interested e.g. road schemes of military importance financed from the defence estimates. The total contribution made to the Special Reserve is roughly Rs. 1 crore per annum at present.

146. Estimates for works on these roads also require the prior technical approval and financial sanction of the Central Government as in the case of national highway works. The procedure for dealing with these projects is the same as that for dealing with national highway projects.

D. Cost of Administering the Fund

147. Upto the end of 1946-47 the entire expenditure on the establishment of Roads Wing (Transport Ministry) was met from the Central Road Fund (Ordinary) Reserve. As the functions of the Roads Wing expanded considerably on account of the additional res ponsibilities entrusted to it under the post-war development plans, it was considered that the original decision to charge the entire cost to the Ordinary Reserve, which was taken at a time when the Roads Wing was looking after the Central Road Fund only, should be reviewed. After examination it was decided that, with effect from 1947 48, provision for expenditure on the establishment of Roads Wing should be made under the head "25-General Administration" and that a lump sum contribution should be made from the Ordinary Reserve every year to general revenues for the work done by the Roads Wing in connection with the administration of the Central Road Fund. The present rate of this contribution is Rs. 4.5 lakhs per annum.

148. The contribution paid so far and that proposed for 1956-57 is as under:-

TOTAL	Rs.	\$1,12,700
1956-57 (Budget estimates)	Rs.	4,50,000
per annum.	Rs.	22,50,000
From 1951-52 to 1955-56 (a) Rs. 4:5 lakhs		
19-0961	R.s.	1,50,000
1948-49 & 1949-50 @ Rs. 1 lakh per annum	Rs.	2,00,000
per annum.	Rs.	62,700
1947-48 (Post-partition period) (a Rs. 1 lakl	1	

149. The Committee observe that the cost of administering the fund has shot up by $4\frac{1}{2}$ times during the last eight years. The Committee, therefore, recommend that all possible steps should be taken to bring this expenditure to the minimum so that the money so made available might be utilised in the actual execution of additional projects.

E. Status of the Fund

150. The Ministry of Law have advised that the present non-lapsing Central Road Fund has no sanction in law and therefore, in the strict legal sense, it is part of the Consolidated Fund of India. The question as to what action should be taken in the light of this advice has been under discussion with the Ministries of Finance and Law and the Ministry of Finance has made reference to the Comptroller and Auditor General of India.

151. The solution under consideration at present is to modify the budgetary procedure of the fund in order to make the entire annual expenditure from the Fund subject to the vote of the Parliament. Under the modified procedure, there would be appreciable additional work on the budget side of the Fund. If, however, this solution is not found feasible and there is no alternative except to convert the fund into a statutory-fund, the administration of the fund would have to be entrusted to a Committee which may consist of officials and/or non-officials. In that event, the accounts of the fund would be maintained by the Committee and not by the A.G.C.R. as at present.

152. The representative of the Ministry informed the Committee that no decision either way had been taken so far. The question had been referred to the Auditor General whose advice was expected shortly. The Committee recommend that an early decision should be arrived at in the matter in accordance with the requirements of the Constitution.

V. CENTRAL ROAD RESEARCH INSTITUTE

A. Introduction

153. The need for a central organisation for the study of soils in relation to road construction was first mooted in 1943 at a conference of Chief Engineers of Provinces and States held at Nagpur. The proposal for a Road Research Institute emerged a year later, when at the initiative of late Dr. S. S. Bhatnagar, the then Director, Scientific and Industrial Research and Mr. G. H. Mckelvie, Consulting Engineer (Roads), Government of India, the Industrial Research Planning Committee recommended the establishment of a Central Institute covering all aspects of road building equipment, maintenance, traffic The governing body of the Council accepted the recomand use. mendation in 1945 and constituted a Road Research Planning and Advisory Committee for drawing up a plan for the establishment of the Institute. A suitable site of about 31 acres in area was secured as a gift from His Grace the Archbishop of Delhi-Simla at a distance of 7 miles from Delhi on the Delhi-Mathura Road. The foundation stone of the Institute was laid on September 6, 1950, and as an urgent measure. some preliminary research work was started in October, 1950. The Institute started functioning properly from July, 1952, when the building which houses the Institute became ready for occupation and was formally opened by the Prime Minister.

B. Organisation

154. The Central Road Research Institute functions under the Council of Scientific and Industrial Research of the Ministry of Natural Resources and Scientific Research. The strength of technical staff in the Institute at the end of March. 1956 was as under:-

Director	1
Deputy Director	1
Assistant Directors	3
Senior Scientific Officers	2
Civil Engineer	1
Junior Scientific Officers	7
Senior Scientific Assistants	8 (1 on deputation in U.K.)
Junior Scientific Assistants	7
Laboratory Assistants	11
Research Scholar under	
C.S.I.R. research scheme.	1

Details of the sanctioned revised budget for 1955-56 and budget estimates as proposed by the Institute for the year 1956-57 are as under:-

Sub-head	Revised sanctioned budget for 1955-56	Estimates as proposed for the year 1956-57
	<u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u></u>	Rs.
Pay of Officers (P-I)	1,42,100	2,14,600
Pay of Establishment (P-2)	2,12,300	3,07,970
Allowances & Honoraria (P-3)	1,58,100	2,85,500
Contingencies (P-4)	2,51,000	2,68,400
Maintenance (P-6)	26, 00	25,000
Chemical App. & equipment (P-7)	1,30,000	1,65,000
Total	9,59,500	12,66,400

C. Functions

155. The scientific work of the Institute is carried on in four technical divisions namely, (i) Soils Division, (ii) Concrete Division, (iii) Bitumen Division, and (iv) Roads Division.

156. A fifth Division for Statistics, Economics and Traffic Engineering has also been recently started. The Institute has been doing useful work in the direction of evolving cheaper and better methods of road construction and maintenance. Following are some of the important items of research work done which may lead to considerable economy if adopted on large scale in the huge programme of road construction to be taken up in the Second Five Year Plan.

(i) Stabilised Soil Roads

157. An original method of stabilised soil road construction with the use of local soils blended together with local aggregates like brick blast, kankar, laterite, moorum etc. has been evolved by the Institute. This has had the test of time for over 10 years on long lengths of road (totalling over 250 miles) under actual traffic and weather conditions. The method brings down the cost to almost half if surface treated and to less than 1 3rd, if left unsurfaced.

158. This method is applicable to about 70% of the total development programme and based on the Nagpur Plan, the savings in cost would be of the tune of hundreds of crores of rupees and the savings in transport would be very large indeed. This type of construction would further provide employment for a far larger number of people than the conventional methods. Efforts are being made to further reduce the cost of construction by this method and steps are being taken to popularise the new technique in the various States by getting experimental road lengths put down with a view to get rapidly increased mileages of roads constructed in due course.

159. The Director of Institute informed the Committee that the cheapest all weather road constructed by conventional methods viz., water bound macadam with stone, cost in most cases about Rs. 35,000

per mile for the road crust alone. A stabilised soil road after surface treatment would cost something of the order of Rs. 19,000 per mile and without surface treatment about Rs. 9,000 to Rs. 10,000 per mile. In Punjab, over 200 miles of such roads had been constructed during the last 10 years or so at about half the cost of ordinary construction and had been found very useful under certain amount of traffic and certain given conditions of climate. They were able to stand the weight of bullock carts and loaded heavy lorries. For the present these were not recommended for traffic beyond an average of 500 tons per day.

160. He further added that the technique being new, it could be popularised in the villages only when it was ensured that their maintenance would be properly done as otherwise the money spent would be wasted. The Planning Commission was being approached by the Institute to persuade the States to extend the construction of such roads by 300 to 400 miles in every State so that when the Third Five Year Plan was launched, the technique would have been uniformly accepted as the right method of road construction.

161. The Committee agree with the views of the Director of the Institute and recommend that if the field experiments proposed to be carried out on an extensive scale show satisfactory results, the Transport Ministry should take positive steps to encourage construction of stabilised soil roads specially in the rural areas in view of the low construction and maintenance costs involved.

162. The Committee understand that the Soils Division of the Institute has also undertaken studies into the physics and chemistry of black cotton soils and it may now be possible to stabilise them for road construction. Arrangements for field experiments in this regard are under way to check up the laboratory results.

(ii) Stabilisation of Desert Sands

163. In the vast areas of Rajasthan etc. there is shortage of not only road stone but also of water lor construction purposes. Work has been nearly completed on a method of stabilisation of desert sands with small quantities of bitumen or tar with a view to make them fit for use in road construction at cost comparable with ordinary construction in other areas. The method is ready for field, trials for which arrangements are being made. Under this method clay and silt are mixed with sand in suitable proportions. Where clay and water are scarce, a line of brick-on-end is provided underneath the soling along either edge of the soling to confine the sand laterally, so that it can support the road pavement (soling and metal etc.)

164. The Committee hope that the field trials will commencewithout undue delay and that the hitherto neglected areas in Rajasthan etc. would be able to get the benefit of such roads in the earlyfuture.

(iii) Bullock Cart Wheel Tester

165. After a great deal of experimentation, the Institute has perfected a testing machine for bullock cart wheel axle systems which stimulates road humpiness and cambres etc. under a bullock cart wheel axle system loaded to full capacity. The main problem under investigation is the evolution of suitable rubber bushings of cheap and durable quality to be fitted to a special type of bullock cart wheel which has been designed by the Indian Roads Congress. This wheel, while not being much more expensive or difficult to make than the resources of the villagers, is calculated to cause far less damage to roads. The flexible wheel axle will not allow the edge of the iron tyre of the wheel to damage the road as on account of the rubber fixture it will sit flat on the road. In order to make it worthwhile for the bullock cart owner in the village to provide this extra fitting the Institute is trying to make the axle self lubricating in such a way that its life is prolonged. Excepting the rubber bush which will have to be manufactured in big centres, the rest of the axle system can be produced in the village so that financially it will not be very expensive to the villager.

160. The Committee feel that the bullock carts as they are today do a great damage to the road surface and from this point of view the evolution of a flexible wheel axle system will go a long way in removing the defect. The Committee, therefore, recommend that in the initial stages, Government should give suitable subsidies to the village people to purchase the rubber bush for the wheels as and when it is perfected in order to popularise it.

(iv) Road Safety Measures.

167. The Traffic Engineering Division of the Institute has been directing its efforts essentially towards finding physical means of keeping the accidents rate within reasonable limits. **Studies** аге well under way towards examination of road users' behaviour, flow of mixed, fast and slow traffic at the crossings etc. in collaboration with the traffic police and also the road authorities. The idea collaborative studies is, that as far as possible, the highly qualified traffic engineers of the Institute would gradually educate local authorities in putting right obvious defects in geometric or other designs of road crossings and traffic control devices and at the same time go on building up a fund of information with a view to be able ultimately to lay down rules for the design and construction engineers and also for traffic control authorities which would tend to bring the safety of road traffic including pedestrians, within reasonable limits. The Committee are of the opinion that experiments on these lines require to be intensified.

(v) Other activities of the Institute

168. There has been a marked increase in the activities of the Institute during the past few years. Apart from many research problems undertaken for investigation in the various divisions advice' on related matters was given in the year 1955-56 for major projects on behalf of Bhakra Dam Directorate, Bannihal Tunnel Project, Indian Standards Institute, Engineer-in-Chief's Branch, Army Headquarters, C.P.W.D. and many other Government Departments and industrial concerns in charge of important works.

D. Programme in the Second Five Year Plan

169. A comprehensive research programme has been drawn up by the Institute for the Second Plan period with a view to tie the work of the Institute with the problems of the Plan. It includes not only the various research problems initiated by the Institute but also those referred to it by the Central P.W.D. and the P.W.Ds. of different States in connection with the programme of construction of roads, aerodromes and runways. The Planning Commission has made a financial provision for the Institute in the Second Plan of Rs. 74.6 lakhs under capital expenditure for construction of necessary buildings and services and for provision of urgently needed research equipment as also for books and furniture, apart from Rs. 77.67 lakhs under recurring expenditure.

170. The Director of the Institute informed the Committee that the most important items on the plate of the Institute during the Second Five Year Plan were:-

- (i) Popularisation of stabilised soil road construction;
- (ii) Encouraging the use of local aggregates like moorum, laterite, kankar etc. after a scientific analysis and tests as efficient road construction materials:
- (iii) Determining relationship between the aggregate and the binder in the bituminous surface treatment of roads;
- (iv) Investigating the manner in which surkhi can be mixed as a puzzolanic in cement to economise the use of cement and to give increased strength by avoiding alkalic reaction. This will improve the quality of concrete in various ways in order to improve its abrasive resistance to the bullock cart wheels; and
- (v) Manufacturing joint fillers out of the waste product from the coconut industry namely coconut husk to replace the joint fillers which are imported.

171. The Committee feel that there is a certain type of traffic on some State Highways and a different type of traffic on certain other of road for Highways. What is the particular type State type of particular type of traffic, what will be the best and the maintenance road, what will be the capital investment cost for such roads, how can there be a changeover to a superior type, what is going to be the effect economically-these and similar questions should also be studied by the Research Institute as the conclusions arrived at will help a great deal in determining the policy that the Government may adopt. The Committee, therefore, recommend that the research work should be further intensified in these directions with a view to providing concrete results for successfully implementing the huge road construction programme which will be undertaken by the various States during the Second Five Year Plan. Concrete proposals emanating from the Institute would be of immense value particularly so, if they are submitted during the early stages of the implementation of the Plan.

E. Liasion with other Organisations

172. The Road Research Institute maintains a regular contact with the Roads Wing of the Ministry of Transport, the C.P.W.D. and the Army (Engineer-in-Chief's Branch), as well as with the Indian Roads Congress, the Indian Standards Institution and other research organisations in the country for co-ordination and exchange of information regarding research problems which are of mutual interest. Some technical papers from other organisations are received by the Institute for comments which are furnished from time to time. As a measure to increase the usefulness of the Institute to the country and specially to the users of research *i.e.*, various Highway Departments all over India, the Director has sent personal letters to the various Chief Engineers stating the facilities available and the objectives of work of the Institute in order to develop a close and direct liaison between them and the Institute. Some engineering staff from the engineering colleges and the Public Works Departments have received laboratory training in research methods at this Besides, the representatives of the various authorities Institute. abovementioned are included in one or the other of the following committees of the Institute or of the Council of Scientific and Industrial Research-

- (i) Executive Council of the Institute,
- (ii) Scientific Advisory Committee of the Institute,
- (iii) Road Research Committee of the Council of Scientific and Industrial Research.

173. Regarding liaison with the Indian Roads Congress, the Institute sends all its research papers for discussion at the open annual sessions and all its important literature is published in the I.R.C. journals. Likewise the I.R.C. invites the Director of the Institute to all its Council meetings. Most of the expert committees of the I.R.C. include active members from various divisions of the Institute. Before propagating new views ideas and techniques among Indian Engineers generally, the Institute as a matter of policy, tries to get the backing of the I.R.C.

174. The Committee were informed that co-ordination is also maintained by the Institute with similar Institutes abroad. Notable among these being Road Research Laboratory, Harmondsworth, United Kingdom, the Highway Research Board, U.S.A., other engineering experiment stations attached to some American Universities and Scientific Research Institutions and Acadamies in Canada, Israel, U.S.S.R. and Sweden. Publications on scientific intormation are exchanged with them for mutual benefit.

F. Co-ordination with State Road Research Institutes

175. As regards co-ordination with other Road Research Institutes in the States, the Director informed the Committee that there were only four or five States which had got Road Research Insti-They were also doing useful work. He further added that tutes. the way in which the balance could be brought about between the Central Road Research Institute on the one hand and the State **Research** Laboratories on the other was that the emphasis of the latter should normally be on testing and control and tackling of small day-to-day problems whereas all higher research emanating from the execution of projects and bigger problems requiring fundamental work should be the main responsibility of the Central Road Research Institute. The State Laboratories would pass on whatever results they got from their local observation and project work etc., to the Central Institute which on account of the better quality of its staff and equipment, would do it at a higher level in order to evolve standards which can be applied to highway engineering in the country as a whole.

176. The Committee were informed that there was a fair amount of co-ordination developing with the State laboratories. It was effected through personal visits as also through consultations and discussion at the Indian Roads Congress. As to the suggestion that the State Road Research Institutes may function directly under the Central Road Research Institute, the Committee were informed that it would not be feasible because, for one thing, the States did not like such central controls. Secondly, as in the case of America, it would be much healthier, if the laboratories, in the various States were to grow on their own lines with regard to their own specific problems and the Central Road Research Institute were to get the results from all these various angles of attacking various problems and analyse them in the Central Institute at a higher level and then try and produce specifications or standards which would be applicable to the whole country.

177. The Committee feel that much headway has not so far been made in the field of road research in the country and the road research laboratories, wherever they exist in the States are not adequately equipped and have no funds to do research on a large scale. The Planning Commission while allocating money to the States to be spent on road projects has not separately allotted any sum for setting up of test and control laboratories in the States to ensure that the work is carried on with proper specifications and on strictly scientific lines. The Committee, therefore, recommend that the Planning Commission while allocating funds to the States should earmark separate sums for the establishment of testing laboratories in the States. This would encourage setting up of nucleus research centres in the States all over the country to tackle problems peculiar to their regions and would also enable the Central Road Research Institute to play a more positive role in assessing the requirements of different States in the field of road research.

178. The Committee further recommend that the Ministry of Transport should discuss this subject in the next Conference of Chief Engineers and prepare a plan for establishing a net work of research stations to facilitate research work on roads which has been very poor so far.

179. The Committee also consider it necessary that some constant channel for imparting information to the Community Projects and National Extension Service areas should be established by the Road Research Institute. All research, no matter of what type it is, would be futile if its results cannot be brought home to the common man in the village. In the opinion of the Committee, the best channel of bringing the benefits to the villages emanating from the results of scientific research would be through the Community Projects Administration.

G. Practical application of results of research

180. The Director of the Road Research Institute informed the Committee that while lot of money was spent on laboratory research there was not enough money to be spent on large scale experimentation which was absolutely necessary to popularise new techniques. The engineering technique could not be introduced by writing papers; it could only be done by teaching people how to do it. Therefore a suggestion was made by a panel of scientists at their meeting with the Planning Commission recently that for every proposal evolved by the Centre or the State concerned, a specific provision of 11 per cent. should be made for large scale application of research carried out on any item, not necessarily the items provided in the budget estimates. This 13 per cent. would go into a fund to be set apart at the disposal of an Assessment Committee. The money would be utilised when the Committee was satisfied that research in the laboratory had reached a stage where it could be used on large scale experimentation and at the recommendation of the Institute doing the work.

181. The Committee feel that unless some sort of specific provision was made in the way suggested by the Director of the Road Research Institute, the results of research will not be of much benefit. There is no point in doing research unless funds are provided to bring it up for experimentation. The Committee, therefore, recommend that the Planning Commission should persuade the States to agree to the proposal referred to above and see it through. 182. The Committee understand that the research work in the Institute has been much hampered in the previous years owing tothe shortage of residential accommodation for the staff within reasonable distance from the Institute. At present, most of the research staff reside at a distance ranging from 9 to 12 miles from the Institute. Within the limited grant allotted for the construction of staff quarters, 32 small type quarters were recently constructed adjacent to the Institute. Efforts are being made to acquire a suitable plot of land near the Institute and construct some quarters during 1956-57. The Committee hope that this work would be expedited. They recommend that in future, whenever a scheme of this nature is drawn out, provision of staff quarters (in the vicinity of the area) should also be incorporated as a part of the scheme.

> BALVANTRAY G. MEHTA, Chairman, Estimates Committee..

New Delhi; The 20th March, 1957.

APPENDIX I

.

List of Highways declared as National Highways under the National Highways Ast, 1956

Serial No.	National Highway No.	Description of National Highways
I	2	3
I	I	The highway connecting Delhi, Ambala, Jullundur and Amritsar and proceeding to the border between India and Pakistan.
2	ıA	The highway connecting Jullundur, Madhopur, Jammu, Banihal, Srinagar, Baramula and Uri.
3	2	The highway connecting Delhi, Mathura, Agra, Kanpur, Alla- habad, Banaras, Mohania, Barhi and Calcutta.
4	3	The highway connecting Agra, Gwalior, Shivpuri, Indore, Dhulia, Nasik, Thana and Bombay.
5	4	The highway starting from its junction near Thana with the highway specified in serial No. 4 and connecting Poona Belgaum, Hubli, Bangalore, Ranipet and Madras.
6	5	The highway starting from its junction near Baharagora with the highway specified in serial No. 7 and connecting Cuttack, Bhubaneshwar, Visakhapatnam, Vijayavada and Madras.
7	6	The highway starting from its junction near Dhulia with the highway specified in serial No. 4 and connecting Nagpur, Raipur, Sambalpur, Baharagora and Calcutta.
8	7	The highway starting from its junction near Banaras with the highway specified in serial No. 3 and connecting Mangawan, Rewa, Jabalpur, Lakhnadon, Nagpur, Hyderabad, Kurnool, Bangalore, Krishnagiri, Salem, Dindigul, Ma- durai and Cape Comorin.
9	8	The highway connecting Delhi, Jaipur, Ajmer, Udaipur, Ah- medabad, Baroda and Bombay.
10	88	The highway connecting Ahmedabad, Limbdi, Morvi and Kandla.
11	8B	The highway starting from its junction near Bamanbhore with the highway specified in serial No. 10 and connecting Rajkot and Porbandar.
12	9	The highway connecting Poona, Sholapur, Hyderabad and Vijayavada.
13	10	The highway connecting Delhi and Fazilka and proceeding to the border between India and Pakistan.

I	2	3
14	22	The highway connecting Ambala, Kalka, Simla, Narkanda, Rampur and Chini and proceeding to the border between India and Tibet near Shipki-La.
15	24	The highway connecting Delhi, Bareilly and Lucknow.
16	25	The highway connecting Lucknow, Kanpur, Jhansi and Shiv- puri.
17	26	The highway connecting Jhansi and Lakhnadon.
18	27	The highway connecting Allahabad with the highway specified in serial No. 8 near Mangawan.
19	28	The highway starting from its junction near Barauni with the highway specified in serial No. 23 and connecting Muza- ffarpur, Pipra, Gorakhpur and Lucknow.
20	28A	The highway starting from its junction near Pipra with the high- way specified in serial No. 19 and connecting Sagauli and Ra- xaul and proceeding to the border between India and Nepal.
.21	29	The highway connecting Gorakhpur, Ghazipur and Banaras.
22	30	The highway starting from its junction near Mohania with the highway specified in serial No. 3 and connecting Patna and Bakhtiyarpur.
23	31	The highway starting from its junction near Barhi with the highway specified in serial No. 3 and connecting Bakhtiyarpur, Mo- kameh, Purnea, Dalkhola, Siliguri, Sivok and Cooch Behar and proceeding to its junction with the highway specified in serial No. 28 near Goalpara.
24	31 A	The highway connecting Sivok and Gangtok.
25	33	The highway starting from its junction near Barhi with the high- way specified in serial No. 3 and connecting Ranchi and Tata- nagar and proceeding to its junction with the highway specified in serial No. 7 near Baharagora.
26	34	The highway starting from its junction near Dalkhola with the highway specified in serial No. 23 and connecting Berhampore, Barasat and Calcutta.
27	35	The highway connecting Barasat and Bangaon and proceeding to the border between India and Pakistan.
28	37	The highway starting from its junction near Goalpara with the highway specified in serial No. 23, and connecting Gauhati. Jorabat, Kamargaon, Makum and Saikhoa Ghat.
29	38	The highway connecting Maku Ledo and Lekhapani.
30	39 51	The highway connecting Kamargaon, Imphal and Palel and pro- ceeding to the border between India and Burma.
31	40	The highway connecting Jorabat and Shillong and proceeding to the border between India and Pakistan near Dawki.
32	42	The highway starting from its junction near Sambalpur with the highway specified in Serial No. 7 and proceeding via Angul to its junction with the highway specified in serial No. 6 near Cuttack.

I	2	3
-		
33	43	The highway connecting Raipur and Vizianagaram and proceed- ing to its junction with the highway specified in serial No. 6 near Vizianagaram.
34	45	The highway connecting Madras, Tiruchirappalli and Dindigul.
35	46	The highway connecting Krishnagiri and Ranipet.
36	47	The highway connecting Salem, Coimbatore, Trichur, Erna- kulam, Trivandrum and Cape Comorin.
37	47A	The highway starting from its junction near Trichur with the highway specified in serial No. 36 and connecting with the West Coast Road near Chalisseri.
38	49	The highway connecting Madurai and Dhanushkodi.
39	50	The highway connecting Nasik with the highway specified in serial No. 5 near Poona.

APPENDIX II

Statement showing the State-wise allocation of the provision of Rs. 21 crores for the development of roads of inter-State or economic importance

	State				Amount of Grant (Rs. Jakhs)	
I.	Andhra .	• •	•	•	100.00	
2.	Assam			•	135.00	
3.	Bhopal			•	23 · 52	
4.	Bihar .	• •	•	•	122 • 44	
5.	Bombay	• •		•	187.00	
6.	Coorg	• •		•	16.00	
7.	Himachal Pradesh	•		•	25.00	
8.	Hyderabad .	• •		•	100.00	
9.	Madhya Bharat			•	58-00	
10.	Madhya Pradesh	• •	•	•	102.00	
11.	Madras	• •	•	•	146.50	
12.	Manipur	• •	•	•	10.00	
13.	Mysore	• •	•	•	57.00	
14.	Orissa	• •	•	•	70.00	
15.	Punjab	• •	•	•	135.00	
16.	PEPSU.	• •	•	•	130.00	
17.	Rajasthan .	• •	•	•	130.00	
18.	Saurashtra .	• •	•	•	38.00	
19.	Travancore-Cochin	• •	•	•	56.00	
20.	Uttar Prades 1	• •	•	•	316.18	
21.	Vindhya Prade		•	•	32.00	
22.	West Bengal .	• •	•	•	114.00	
		Total		•	2103 · 64	

APPENDIX III

Statement showing the State-wise break up of the expected physical achievements under the approved programme for the development of roads of inter-State or economic importance

--

	State			New Construction	Improvements	Bridges
1.	Andhra		•	. 50	370	
2.	Assam	•	•	• • • •	175	I
3.	Bhopal	•		. 45	••	••
4.	Bihar	•	•	. 10	225	••
5.	Bombay	•		. 275	90	• •
6.	Coorg	•	•	. 10	45	••
7.	Himachal Pradesh		•		• •	I
8.	Hyderabad .	•		. 130	140	••
9.	Madhya Bharat .	•	•	. 145	•••	••
10.	Madhya Pradesh	•	•		250	3
11.	Madras	•		. 50	200	4
12.	Manipur	•	•	. 20	• •	••
13.	Mysore	•	•		110	••
14.	Orissa	•	•	- 35	375	••
15.	Punjab	•	•	. 70	250	••
16.	PEPSU	•	•	. 150		••
17.	Rajasthan	•	•	. 180	40	I
18.	Saurashtra .	•	•		100	••
19.	Travancore-Cochin	•	•	. 25	100	••
20.	Uttar Pradesh	•	•	. 250	285	••
21.	Vindhya Pradesh	•	•		100	••
22.	West Bengal .	•	•	. 30	175	2
		TOTAL		. 1,475	3,030	12

•

APPENDIX IV

List of selected roads serving or leading to important tourist centres proposed to be developed during the Second Plan period

State	Name of work	Rough estimated cost to be provided by the Centre as grant
		(Rs. lakhs)
Bhopal	. Improvement of the Bhopal-Bhejpur road	1.50
Bombay	Improvement of the road from Karla to Bhaia caves (from mile 79 of Bombay-Poona road near Lonavala)	0•80
	Improvement of approach road to Kanheri caves at Bassein	0.06
	Improvement of approach road to Aiholi .	0.10
Madhya Bhazat	. Improvement of roads within Mandu fort	2.50
	Improvement of roads within Gwalior Fort	0.40
	Improvement of approach roads to monuments at Bhilsa	0.50
Madras	. Improvement of road to observatory at Kodai- kanal	0.48
	Improvement of road from Rameshwaram Station to Temple	0.30
	Improvement of road to Vendanthangal Bird Sanctuary	3.00
Mysore	. Improvement of road leading to Belur	I · 00
	Improvement of road leading to Halebid .	2.00
	Improvement of road to Sravanbelgola	0.25
Punjab	. Construction of a road from Dalhousie to Bakrota	1 · 25
	Improvement of the road to Suraj Kund (portion) within the Punjab State	0.65
Travancore-Cochin	. Special surfacing of the road frem Kumili to Thekkady	0 83 .
Vindhya Pradesh	Improvement of approach road to the temples at Khajuraho	3.00
West Bengal .	Black topping of the road from Darjeeling to Tiger Hill	0.75
	TOTAL .	19.36

.

Year				Metalled	Unmetalled	Total	
1928-29	•	•	•	•	67,424	1 78 ,472	2,45,896
1929-30	•	. •	•	•	70,721	183,406	2,54,127
1930-31	•	•	•	•	74,048	179,089	2,53,137
1931-32	•	•	•	•	74,541	189,971	2,64,512
1932-33	•	•	•		75 ,309	190,534	2,65,843
1933-34	•	•	•	•	7 6 ,082	192,795	2,6 8,877
1934-35		•	•	•	77,110	198,850	2,75, 9 60
19 35 -3 6	•	•	•	•	82,276	224,385	3,06,661
1936-37	•	•	•	•	۵2,299	231,882	3,14,181
1937-38	•	•	•	•	63,706 (<i>a</i>)	220,485 (4)	2,84,191
1938-39	•	•		•	2	Not available	
1939-40	•	•		•		Do.	
1940-41						Do.	
1941-42	•			•		Do.	
1942-43		•	•	•	67,730	1.58.363	2,26,093
1943-44			•	•	68,513	(<i>b</i>) 1.54.006	2,22,519
1944-45	•	•	•	•	77,773	1,54,301	2,32,084
1945-46	•			•	(c) 66,404	1,41,564	2,07,968
1946-47		•		•	(d) 62,645	1,06,172	1,68,817
1947-48	•				66,124	1,17,780	1,83,904
1948-49			•		N	Not available	
1 949 -50				•	95,924°	1,47,314*	2,43,238
1950-51	•	•	•		98,075°	1,48,642*	2,46,717

APPENDIX V

Statement showing the growth of hard surfaced and low type roads in India from 1928-29to 1950-51 i.e., till the beginning of the 1st Plan

*Figures prior to 1949-50 exclude former Indian (Princely) States while those for 1949-50 and 1950-51 include all States.

(a) Decrease is due to separation of Burma and Shan States.

(b) Reduction in mileage due to lack of maintenance during World War II.

(c) Figures for North West Frontier Province and Sind are not included, since they were not available.

(d) Apparent decrease in road mileage due to complete statiftics not being available. for pre-partition India.

APPENDIX VI

Model "Village Road Development Co-operative Scheme"

[Outline scheme suggested by the Central Roads Organisation]

NOTE:—This is to be used merely as a basis for developing specific schemes on lines suited to local conditions in the States.

The object of the Scheme is to secure the co-operation of villagers concerned in order to undertake (as a continuous process) the development and regular maintenance of selected short lengths of feeder roads to connect their localities to markets or to the nearest existing road already maintained by Government or other Public Authority; and the measure of co-operation is to be judged by the extent of voluntary contribution of labour, land, materials or money made available by the villagers.

The Scheme

1. Select a district where there is obvious need for trying out this scheme. More districts can be selected as the scheme takes on.

2. Appoint an Assistant Engineer familiar with rural road problems to work out the Scheme in each district in consultation with the Collector.

3. His first duty would be to tour among the villages and pursuade the people of each to co-operate in making an application (through the village or Gaon Panchayat) for the development of specified feeder roads needed by them. The need for regular maintenance must be stressed from the very outset.

4. The test of need must be gauged by the extent of voluntary contributions offered (in the shape of free labour, land, materials. or money) by the villagers through their competent representative e.g., village panchayat. These offers must cover not only the initial development but also regular maintenance continued for at least ten years.

5. An estimate of the cost of the work must then be framed in each case, and this must be accompanied by the Assistant Engineer's **recommendations as to how the necessary resources should be provid**ed. Here again adequate provision for *regular maintenance* should be made.

[Before finalising this estimate, he should again consult the head of the villagers' panchayat concerned, if necessary, to check up offers of local contributions. No written agreement need be taken at this stage, but it should be explained to those concerned that they will be required to sign an agreement covering these offers before the relevant work is started.] 6. This Estimate (to be called ".....Village Road Co-operative Estimate") should express clearly the obligations proposed to be undertaken by the villagers on the one hand and by Government on the other e.g.

- 1. By the villagers:
 - (a) Labour expressed either in terms of "Men-days" where free labour is offered OR in terms of money where this is offered to hire local labour for doing earthwork etc.
 - (b) Gifts of land, materials, etc. OR money offered to secure these locally.
- 2. By Government
 - Materials and technical help for constructing the masonry or other structural work required which canot be done by the villagers themselves.

7. Sanction to the estimate should be given only on the condition that the Head of the Village Panchayat will sign an agreement covering local contributions, provided for in the estimate, in respect of both the initial as well as the recurring work.

[The power of sanction may (in the beginning) vest in the Executive Engineer; but later it may be delegated to the local Assistant Engineer.]

8. The AGREEMENT ought to be in the form of a joint agreement signed by the head of the Village Panchayat or other similar responsible local authority.

[The villagers are accustomed to the acceptance of such "Joint responsibility" for TACCAVI or similar loans in times of scarcity. It is also customary for labour gangs to accept joint responsibility for advances made to individual members so that the rest of the gang are responsible for defaulters, if any. It is, therefore not anticipated that representatives of the villagers who really need a road will object to signing a joint agreement.]

9. Effective discharge of the villagers' obligation must be secured by incorporating (in the agreement) penalties to provide against default e.g. in the supply of labour; and the penalties may be made recoverable from the landlords and tenants as arrears of land revenue—for a period not exceeding ten years.

10. Government obligations must (on the other hand) also be effectively provided for by-

- (1) making budget provision for the required grants; (See under "Finance" below)
- (2) making available locally such materials and tools and plant as are not obtainable from the local contributions; and
- (3) providing efficient organisation for prompt utilisation of labour and for prompt payment of hired labour.

11. Simple standards (and specifications) of work must be selected to suit—

- (a) the needs of local (animal-drawn) traffic.
- (b) local climatic, soil and topographical conditions and they must take into account the need for maximum use of local labour (unskilled or semi-skilled). It is not essential to maintain uniformity of standards merely for the sake of uniformity.

12. Finance. A separate "Village Road Co-operative Fund" might have to be established to manage properly the business of receiving, spending and accounting for the moneys supplied by both the villagers and by Government—in some cases, perhaps the District Board may also contribute.

Note.—The Government of India propose giving a grant towards each project which is approved by them for the purpose on the following basis:—

- (1) The amount of the grant for any project will not exceed one-third of the cost of the project, the remainder of the cost to be met partly from money provided by the State Government and or District Board concerned on the one hand and on the other hand partly by way of the local voluntary contributions in the shape of free labour, free supply of materials and free gifts of money.
- (2) The total amount of the grants available for application in any State will be limited to a specified sum which will be indicated to the State Government.

The power to make "block grants" to such a co-operative fund, from Government funds, might be given to the Superintending Engineer; while the power to make allocations for expenditure from such a co-operative fund may be given to the Executive Engineer.

13. Control of expenditure. The principles embodied in the following should be observed:—

- (1) the work to be done on any project should be duly measured by a competent P.W.D. official and be duly recorded in his measurement book maintained for the purpose;
- (2) the bill on account of cost of work actually done should be prepared and presented for payment to the Treasury. The bill should represent the total cost of the work actually done including, inter alia a cash value of every local contribution utilised on the work—the amount of such contribution being deducted from the total amount of the Bill;
- (3) a separate account must be maintained of the expenditure incurred against the Central Government's and the State Government's contribution (allotments made) for each project. The amount payable by the Centre may be recouped half-yearly by the State Government by furnishing a detailed statement on the basis of which (after its acceptance by the Ministry of Transport, Roads)

Organisation, New Delhi) the necessary debit may be accepted by the A.G.C.R. against the Central Road Fund (Ordinary) Revenue.

14. Accounting and audit arrangements should be specified for the guidance of the Executive Officers and the controlling officers concerned; and the instruction in this behalf should be framed in consultation with the competent audit and accounts officers concerned.

15. Maintenance of every road developed under the Scheme should be answered by application of the following principles:—

- (a) The Village Panchayats should be in charge of the maintenance of the roads.
- (b) A separate road cess should be levied; part of which should be set apart to be utilised by Village Panchayats solely for the maintenance of these roads. Alternatively, the Village Panchayats may be given powers to tax residents of the locality for the purpose of maintaining these roads.
- (c) Failing satisfactory maintenance of the roads by the Panchayats, the roads should be taken over by the P.W. Departments and the cost of their maintenance recovered as arrears of land revenue.

Every scheme submitted to Government for approval should invariably indicate the provision made therein for maintenance of the project after construction.

16. Details to fill in the foregoing "outline" provisions, should be worked out to suit local conditions in each State.

APPENDIX VII

Statement showing the details of the grants sanctioned from the Central Road Fund (Ordinary) Reserve and the amounts actually utilised by the States under the Village Road Cooperative Development Scheme

	Name of State								Grants Sanctione (Rs. Lakh	Amount of d Grant uti s) lised (i.e. expenditure reported upto 30-9-56.)
1.	Andhra	•		•	•	•	•		5.10	2.91
2.	Assam	•	•	•	•	•		•	3.10	Nil
3.	Bihar	•		•		•	•		3.00	Nil
4.	Bombay	•		•	•	•	•		3.42	1.61
5.	Madhya Pradesh	•		•	•	•			7.63	3.16
6.	Madras .	•			•		•	•	3.00	1.24
7.	Orissa	•		•		•			2.78	2.84
8.	Punjab	•		•		•			5.89	1.26
9.	Uttar Pradesh .	•			•	•			3.00	0.24*
10.	West Bengal .	•	•	•	•	•			4.42	0.19**
11.	Mysore					•	•		0.11	0.28
12.	Rajasthan .	•			•	•			1 • 25	Nil
13.	Kerala	•				•	•	•	1.34	0.27
14.	Coorg	•		•		•	•	•	0.75	Nil
15.	Himachal Pradesh					•	•		2.61	0.16
16.	Manipur	•	•	•	•	•		•	0.13	Nil
17.	Kutch	•	•	•	•	•	•	•	0.11	Nil
		Total		•	•	•		•	48·24	14.76

* For 3 out of 17 roads.

• * For the period from 1-4-56 to 30-9-56.

APPENDIX VIII

Statement showing unspent balances in the allocation accounts of States from the Central Road Fund as on 3-3-1956

S. No.	Name of State									Unspent ba- lance on 31st March, 1956
									(,	Rs. in Lakhs)
1.	Andhra	• •	•			•	•	•	•	60•43
2.	Assam		•	•	•	•	•	•	•	15-30
3.	Bihar .	• •	•	•	•	•	•	•	•	46.60
4.	Bombay		•	•	•	•	•	•	•	94 • 34
5.	Madhya Pradesh	• •	•	•	•	•	•	•	•	43 · 10
6.	Madras .		•	•	•	•	•		•	116-64
7.	Orissa	• •	•	•	•	•	•	•		27 • 49
8.	Punjab		٠	•	•	•	•	•	•	52.00
9. ·	Uttar Pradesh .	· •		•	•	•	•	•		74.90
10.	West Bengal .		•	•	•	•	•	•	•	164.05
11.	Hyderabad .	• •	•	•	•	•	•			37.38
12.	Madhya Bharat	•••	•		•	•		•	•	22.63
13.	Rajasthan .	• •					•	•		24 • 15
14.	Mysore				•	•		•		49 • 29
15.	PEPSU.	• •	•	•	•	•			•	9•98
16.	Saurashtra .	• •	•		•	•	•	•	•	12-48
17.	Travancore-Cochin				•	•		•		47·61
18.	Jammu & Kashmir		•		•	•	•		•	4 • 25
19.	Ajmer						•	•		3.52*
20.	Bhopal	· •				•			•	4-15
21.	Coorg			•			•	•	•	2.03
22.	Delhi					•	•	•	•	34 • 53*
23.	Himachal Pradesh		•		•	•		•	•	2•40
24.	Kutch				•		•	•	•	2•79
25.	Manipur .				•		•	•	•	3.61
26.	Tripura .						•	•	•	1.55
27.	Vindhya Pradesh					•		•	•	8.11
28.	Andaman and Nicoba	ar Islands				•		·	•	1.00
		TOTAL								966.31

.

*Approximate balance based on estimated drawals during 1955-56 as final figures of expenditure during that year have not yet been received from the Accounts Officers concerned.

APPENDIX IX

Statement showing the average cost of construction per mile for different types of roads

	Cost per mile
I. Concrete Roads :	Rs.
4" concrete 1:2:4 over waterbound macadam, excluding bridges and culverts and cost of land acquisition-Formation width 32' and width of crust 12' (Class I).	1,10,000
Cost of land acquisition	10,000
Cost of 3 culverts per mile of 8-10 ft. span made of R. C. C. slabs .	25,000
II. Bituminous Roads (Bituminous surfacing over waterbound macadam.)	
Fremixed bitumen carpet covered with a seal coat over waterbound macadam, excluding bridges and culverts and cost of land acquisition- Formation width 32' and width of crust 12' (Class I)	65,000
Cost of land acquisition	10,000
Cost of 3 culverts as in Item I	25,000
III. Waterbound Macadam Roads: (without bituminous surfacing)	•
Brick or rubble stone with (a) 4 ¹ / ₂ brick metal covered over with 3" stone metal or (b) 6" stone metal excluding bridges and culverts and cost of land-Formation width 24' and width of crust 12' (Class II).	52,000
Cost of land	7,500
Cost of 3 culverts as in item I	20,000
IV. Earth Roads (Kutcha roads): (fair weather).	
Formation width 24' with 24' earth surface (Class III), excluding bridges and culverts and cost of land.	5,000
V. Stabilised Soil Roads (with bitumino's surfacing).	
 (a) 1. 3" thick base course. 2. 3" thick wearing course with a 1" veneer of stone. 3. 2 coats of surface dressing, excluding cost of bridges and culverts and cost of land, width of crust 12' (cost of road crust only). 	20,000
(b) Stabilised soil road with brick ballast or kankar whichever is avail- able locally without black top surface dressing. Width of crust 12' (cost of road crust only)	9,600
APPENDIX X

Resolution on road development adopted by the Constituent Assembly of India (Legislative) on 19-11-1947 as amended by that Assembly on 8-12-1949 and by the Parliament of India on 14-4-1950.

This Assembly hereby resolves that:—

1. There shall continue to be levied on motor spirit an extra duty of customs and of excise of not less than two annas per gallon, and the proceeds thereof shall be applied for the purposes of road development.

- 2. (i) From the proceeds of such extra duty in any financial year there shall be deducted a sum as near as may be equivalent to the share in such proceeds arising from taxed motor spirit used in aviation during the calendar year ending during the financial year concerned, and such sum shall be at the disposal of the Central Government for allotment as grants-in-aid of civil aviation.
 - (ii) The balance of the proceeds shall be credited as a block grant to a separate Road Fund.
 - (iii) For the purpose of this resolution taxed motor spirit shall mean motor spirit upon which the duty of customs or excise shall have been paid and in respect of which no rebate of such duty shall have been given.
- 3. (i) The Road Fund shall be allocated as follows:
 - (a) a portion equal to twenty per cent., shall be retained by the Central Government as a central reserve, this percentage being applicable with effect from the allocation due for the financial year 1948-49.
 - (b) out of the remainder there shall be allocated by the Central Government a portion for expenditure in each State and Territory specified in the First Schedule to the Constitution as near as may be in the ratio which the consumption of taxed motor spirit other than motor spirit used in aviation, in each area for which an allocation is to be made shall bear to the total consumption in the territory of India of taxed motor spirit, other than motor spirit, used in aviation during the calendar year ending during the financial year concerned.
 - (ii) The portions allocated for expenditure in Part A States and Part B States shall be retained by the Central Govvernment until they are actually required for expenditure in the manner hereinafter specified.

- (iii) If in the opinion of the Central Government, the Government of any Part A State or Part B State has at any time:---
 - (a) failed to take such steps as the Central Government may recommend for the regulation and control of motor vehicles within the State or
 - (b) delayed without reasonable cause the application of any portion of the Road Fund allocated or re-allocated as the case may be for expenditure within the State,

the Central Government may resume the whole or part of any sums which it may at that time hold for expenditure in that State.

- (iv) All sums resumed by the Central Government from the account of any State Government as aforesaid shall be re-allocated between the credit accounts of State Governments and the reserve with the Central Government in the ratio of the main allocation for the financial year preceding the year in which the re-allocation is made:—
- Provided that the sum so calculated as the share of the State from whose account the resumption has been made shall be credited to the reserve with the Central Government.
- (v) Special additions to the Road Fund for financing particular projects may be accepted from sources other than that mentioned in para 2(ii) which shall be kept in a Special Reserve and utilised for such projects.

4. The balance to the credit of the Road Fund or of any allocation thereof shall not lapse at the end of the financial year.

5. No expenditure shall be incurred from any portion of the Road Fund save as hereinafter provided.

6. The Central Reserve with the Central Government shall be applied first to defraying the cost of administering the Road Fund and thereafter upon such schemes for research and intelligence and upon such special enquiries connected with roads and upon special grantsin-aid for such objects connected with roads as the Central Government may approve.

7. The sums allocated for expenditure in the States may, subject to the previous approval of the Central Government to each proposal made, be expended upon any of the following objects, namely:—

- (i) on the construction of new roads and bridges of any sort;
- (ii) on the reconstruction or substantial improvement of existing roads and bridges;
- (iii) in special cases, on the maintenance of roads and bridges, constructed, reconstructed or substantially improved from the Road Fund or from loans approved or sanctioned by the Central Government;
- (iv) to meet charges, including the cost of establishment, connected with the preparation of schemes of road development or with the administration of State Boards of communications;

- (v) to meet charges including the cost of establishment connected with control of motor transport; and
- (vi) on the interest and amortization of loans approved or sanctioned before the date of this Resolution by the Central Government, and spent or to be spent on the construction, re-construction or substantial improvement of roads and bridges.

8. In considering proposals for the construction, reconstruction or improvements of roads and bridges from the Road Fund, the Central Government shall have regard to the present urgent need for improving the efficiency and reducing the cost of transport by road of agricultural produce to markets and railways.

9. (i) A Standing Committee for Roads shall be constituted consisting of:—

- (a) the Minister in charge of Transport who shall be ex-officio Chairman, the Minister of State for Transport who shall be ex-officio Vice-Chairman, and the Minister of State for Parliamentary Affairs who shall be ex-officio member;
- (b) 15 members elected by the members of Parliament from amongst themselves; and
- (c) the Chief Commissioner of Railways.

(ii) In the absence of the Chairman and the Vice-Chairman, the members present at any meeting may elect one of themselves to act as Chairman of the meeting.

(iii) No approval to any proposal for expenditure from the Road Fund shall be given by the Committee unless it is supported by a majority of the members present and voting.

(iv) All proposals for expenditure from the Central Reserve and all other proposals for expenditure from the Road Fund to be made in the State shall be referred by the Central Government to the Standing Committee before the proposals are approved.

Provided that the ammounts in the Special Reserve shall be applied only to the purposes for which they are earmarked.

10. The functions of the Standing Committee shall be:-

- (a) To consider the annual budget and accounts of the Road Fund;
- (b) To advise upon all proposals for expenditure from the Central Reserve;
- (c) To advise upon the desirability of all other proposals involving expenditure from the Road Fund in the States.
- (d) To advise upon proposals for the resumption of monies held by the Central Government as provided in subparagraph (3) of paragraph 3 of this Resolution;
- (e) To advise the Central Government generally on all questions relating to roads and road traffic which the Central Government may refer to the Committee.

Ę

APPENDIX XI

Statement showing allocations made to States from the Central Road Fund during the years 1951-52 to 1955-56

(Figures in lakhs of Rs.)

.

S.	Name of Sta	I te						Allocatio	ns during	; the year	
140							1951-52	1952-53	1953-54	1954-55	1 955 -56
I.	Andhra .	•	•	•		•		•••		8.15	14.02
2.	Assam .		•	•			9.64	10.91	11.55	12.36	12.88
3.	Bihar .	•	•				13.35	14.93	17.11	18.28	17.50
4.	Bombay	•	•	•			62.23	76.95	64 - 51	61 · 18	59.69
5.	Madhya Prade	sh					8.12	10.37	12.42	13-79	13.44
6.	Orissa .	•	•	•			4.95	5.31	5.94	6.59	6.94
7.	Madras .	•					37 · 16	55.94	61.00	49.35	33 · 29
8.	Punjab .		-	•	•		10.25	15.58	21 . 45	20.15	18.53
9.	Uttar Pradesh			•			24 • 56	25.34	29.53	31.06	30 · 83
10.	West Bengal						38 · 62	41 · 50	41 • 47	44 . 14	43 · 89
11.	Hyderabad		-	•			6 · 36	8.47	9.19	9.81	9.68
12.	Madhya Bhara	It			•		3.63	5-17	5.65	6 · 10	5.95
13.	Mysole.						8.62	11.06	11.90	12 · 33	12 • 74
14.	Pepsu .			,			1.41	2 · 17	2.60	3 · 20	3 · 32
15.	Rajasthan				•		5 · 18	7 · 83	8 · 12	8 · 59	9.06
16.	Saurashtra			•	•		3 • 94	5.32	5.36	5.47	6·07
17.	Travancore-Co	chin;				•	8 • 88	12.77	14 · 69	14.94	13.44
18.	Jammu & Kasl	hmir					••			••	3.05
19.	Ajmer .						0.54	0.78	0.82	0.91	0.98
20.	Bhopal .	•			•	•	0.91	1.03	1.11	1 • 22	1 . 35
21.	Coorg .				•	•	0.46	0.60	0.66	0.73	0 ·76
22.	Delhi .	•					9·0 6	11.64	12.40	13-81	12.69
23.	Himachal Prad	lesh					0.16	0.19	0.38	0.46	0.5-
14.	Kutch	•					0.73	0·96	0.97	0·99	1.09
25.	Manipur	•					0.59	0.57	0.54	0 · 56	0.53
:6.	Tripura .	•	•				0.12	0.20	0.25	0.38	0.40
.7.	Vindhya Prade	sh;	• •				0*89	1 • 25	1.53	1.64	1 · 78
8.	Andaman & Ni	cobar	Island	s .		•	0 · 29	0.12	0.12	0.16	0.07
	Total allocation	ons.	• •			•	260.63	326.96	341 - 27	346.35	334 · 54

Note: The figures given above represent the actual allocations made during the years 1951-52 to 1955-56 and not the allotments made from the allocations for expenditure on approved works during those years.

APPENDIX XII

Statement showing disbursements made from Ordinary Reserve of the Central Road Fund during the First Five Year Plan period

(Figures in lakhs of Rs.)

S. No.	Name of State				÷	1951-52	1952-53	1953-54	1954-55	1955-56
										R.E.*
I.	Andhra					••	0.30	0.35	0.31	3.39
2.	Assam	•	•			0.02	••	••	••	6.10
3.	Bihar								••	2 · 22
4.	Bombay .		•		•	2 · 36	2 · 53	1.00	I ·93	5.00
5.	Madhya Pradesh	•		•		0.62	2 ·63	4 • 48	4 · 82	5.07
6.	Madras .		•			0.55	••	••	0 ·0 7	3.93
7.	Orissa .	•		•		0.84	0.10	0.24	0.62	2 · 58
8.	Punjab; .	•	•			9 · 12	• •	0.11	0.64	1.85
9.	Uttar Pradesh	•				0·0I		••	5 70	7.38
10.	West Bengal		•			19-37	• •	••		1 · 17
11.	Hyderabad .		•			••	• •			
12.	Madhya Bharat					0.47	• •			1.60
13.	Mysore .					••			••	0.55
14.	Pepsu .					• •		••	••	3.00
15.	Rajasthan	•				• •		0.12	3 · 14	<u>3 · 98</u>
16.	Saurashtra .	•				• •	• •	••	0.01	3 • 78
17.	Travancore-Cochin	•	•	•		••	• •	••	••	4.34
18.	Ajmer .	•	•	•		0 · 20	• •			0.12
19.	Jammu & Kashmir	•					••		••	
20.	Bhopel	•		·	•	••	••	0.81	1 · 12	4.01
21.	Coorg	•	•	•	•	••	••	••		2 · 30
22.	Deihi	•	•	•	(••	••		• •
23.	Himachal Pradesh	•	•	•			1· 0 6	2.04	0.61	4.65
24.	Kutch	•	•			••	• •	••		0.32
25.	Manipur .	•	•	•	•	••	• •	••	••	••
26.	Tripura .				•	••	• •	••	••	••
27.	Vindhya Pradesh		•			••		••		0.69
28.	Andaman & Nicobar	Island	ds	•	•	••	••	••	••	••
	Total		•	•		33.52	6 · 52	9.58	18-89	67 . 78

• The amounts given represent the revised estimate of expenditure.

APPENDIX XIII

Statement showing the summary of conclusions/recommendations

Serial No.	Reference to para No.	Summary of conclusions/recommendations
I	2	3
I	8	It is regrettable that it should have taken 9 years for introducing the National Highways Bill, when the Central Government had assumed full financial responsibility for the development and maintenance of certain roads from 1-4-1947.
2	18	 The Committee regret to note that the performance after the withdrawal of British power from India and till the launching of the First Plan, was extremely poor in the matter of new construction. Four and a half valuable years were virtually lost in doing very little. The position of arrears in regard to the National Highways was, broadly speaking, as under on the 1st A pril. 1951 when the First Plan came into force: (i) 1490 miles of missing links to be constructed; (ii) 147 major bridges to be constructed; and (iii) 8,000 miles of low grade surface roads to be
3	28	The Committee observe that so far as National Highways are concerned, the Second Plan confines itself only to the completion of gaps in the existing system. As regards the number of bridges to be constructed in order to make the highway system complete in all respects, the Plan provision falls short of that even in so far as there will still be left out certain major bridges to be carried over to the Third Plan. The Committee are sorry to note that not a single additional highway is proposed to be added to the existing system of National Highways in the next five years. They are, how- ever, informed that towards the close of the current plan, it might be necessary to examine the ques- tion of expansion of the National Highway system and if it is discided, to make any additions to the system the required funds may be provided in the Third Plan.

(

I	2

29

The Committee do not consider this assurance as a very satisfactory one. In fact the Ministry have themselves admitted that there have been presistent demands from States for additions to the existing system. During the discussion on the National Highways Bill in the Houses of Parliament, this question was raised by many of the members. With the re-organisation of States and the establishment of new industries and steel plants, it has assumed added importance. The Committee are. therefore, of the view that the Ministry should, right from now, give attention to this problem and find out in consultation with the other Ministries and the State Governments, the areas where development is bound to be very rapid during the plan period and decide what additional roads should be included in the list of National Highways.

3

- 34 The Committee note with regret that the progress in the ex-Part 'C' & 'D' States and other areas has not been very encouraging both in terms of financial and physical achievements. It has been particularly slow in Andaman and Nicboar Islands, Sikkim, and N.E.F.A. The Committee hope that more attention will be given to these areas during the Second Plan.
- The Committee regret to observe that lack of an 6 38 overall survey of the Andaman and Nicobar Islands, has been responsible for slow progress of road They feel that a detailed construction work there. and overall geographical survey of the islands is a pre-requisite and therefore recommend that the Government should carry out this job very expeditiously before any major plans of colonisation and settlement can be given practical shape. The Committee hope that once this is done, the islands will be well served with good roads and will attract settlers.
 - 41 The Committee were informed that the Government of India have set up an inter-departmental committee at Joint Secretary's level to review from time to time the progress of execution of road construction works in the Indo-Tibetan border areas. The Committee hope that a proper follow-up of all the measures detailed earlier would accelerate the tempo of work in these areas, which were neglected in the past.

71

5

I

8

9

3

48 The Committee hope that the Planning Commission would accede to the request of the External Affairs Ministry for raising the provision of Rs. 50 lakhs for road development in Sikkim in the Central Sector of the Second Five Year Plan to Rs. 200 lakhs in view of the strategic importance of the region.

- With the completion of the works undertaken on the 54 West Coast Road, major portion of the coastline of the country will have a National Highway running more or less parallel to it within reasonable distance. The Committee recommend that this process should be carried to its logical conclusion so as to ensure that by the end of the Third Plan, the entire coastline of the country is girdled by a The Intermediate and National Highway. some of the Minor Ports should be connected with this National Highway by suitable feeder roads. This will facilitate development of ports and ease the transport problem of the country.
- 10 59 The Committee note that the progress of works on roads of inter-State or economic importance both in terms of physical and financial achievements has not been very satisfactory as against the targets fixed for execution in the First Five Year Plan. The Committee, hope that the tempo of work would be quickened in the Second Plan period and the sanctioned provision of Rs. 18 crores would be fully utilised.
- 11 66 The Committee recommend that certain broad rules may be framed to govern cases of construction of over or under bridges in place of existing road-rail level crossings in consultation with the Railway Ministry so that a uniform procedure may be evolved for the future. The details can be left to be worked out by the authorities on the spot acording to the exigencies of each case. This would enable a speedy settlement of the preliminaries.
- 12 74 The Committee consider that it is necessary to have a perspective plan just like the Nagpur Plan which will meet the requirements of the next 25-30 years. The Committee, therefore, recommend that in view of the integration of the princely states and change in the political map of the country after

I	2	3
		the Nagpur Plan was formulated and in view of the industrialisation that is taking place, the Ministry should devise a plan as early as possible based on existing conditions.
13	85	The Committee recommend that the method of construction of rural roads as suggested by Shri E.A. Nadirshah should be considered by the Special Officer who is going to be appointed to undertake a broad study of development of rural communications and he should lay down definite standards for the construction of better rural roads at a cheaper cost.
14	86	During their examination of the estimates of the Community Projects Administration, the Committee were glad to learn that the response of villagers in making voluntary contribution of labour was splendid. The Committee, therefore, suggest that the P.W.Ds. of the States and the local authorities in charge of the C.D. and N. E. S. Blocks should co-ordinate properly and launch a systematic programme of the construction of village roads by utilising voluntary labour, the funds earmarked in the blocks for rural communications and the rural road fund. The programme should be so chalked out as to ensure that the basic target fixed by the Nagpur Plan (<i>viz.</i> that every village in a well develop- ed agricultural area should be brought within 5 miles from a main road and in a non-agricultural area within 20 miles from a main road) is achieved without any exception by the end of the Second Plan.
15	93	The Committee regard the response to the Village Road Co-operative Development Scheme as rather unsatisfactory. In view of the pressing need for the construction of village roads, the Committee suggest that the State Governments should be urged to take full advantage of the scheme.
16	94	The Committee also feel that the allocation of Rs.60 lakhs for the village road co-operative fund is too small and recommend that the allocation should be suitably increased and that the panchayats of the villages should be encouraged and brought fully into the picture to take full advantage of the scheme. The feasibility of entrusting the construction of village roads under this scheme

I

74

to the Gram Panchayats, suitable technical supervision being provided by the state P. W. D. might be examined. This would quicken the progress and encourage people to participate more actively in the programme. The services of the Block Development Officers may also be utilised for the purpose for villages covered by C. D. or N. E. S. Blocks. In their publication, 'Second Five Year Plan', the Planning Commission have stated that the target for development of village roads cannot be easily set in advance. The Committee do not agree with this They are of the opinion that in the abview. sence of a clearly set target, the subject might not receive the full attention it deserves. The Committee, therefore, suggest that 'state-wise' targets of constructing village roads should be set up and incorporated in the Second Plan.

The Committee recommend that the question of simplifying the financial and other procedures should be thrashed out in a conference of Chief Engineers and necessary action taken to rectify the existing defects so that the States do not find any difficulty in carrying out the allotted work in time. In the existing circumstances, when there is a great need for the construction of roads in the country, any failure to utilise the funds earmarked and to achieve the physical targets laid down should normally be regarded as a reflection on the efficiency of the Chief Engineer concerned.

101 The Committee regret to note that the sub-committee appointed by the Chief Engineers' Conference held at Srinagar in June, 1955, to examine the question of getting timely financial sanction for the staff, tools, and plants etc. required for road construction work has not so far submitted its recommendations. They wish that this work had been completed before the commencement of the Second Plan. They strongly recommend that the question of simplified procedure for sanction of funds and staff should be settled expeditiously, so that the targets laid down during the Second Plan are achieved without any hitch.

106 The Committee feel that without trained personnel it will not be possible to successfully execute

17

97

18

I	2
	_

the various schemes. The two shall have to match. There is no use having a bigger plan and at the same time have a meagre provision for personnel. Whatever plan is sanctioned there must be necessary personnel to carry it out. The work of road construction has suffered because of the shortage of technical personnel like overseers and draftsmen in the States. The Comy mittee, therefore, recommend that the Ministr-should assess the requirements carefully and take some concrete steps to overcome the shortage of staff of these categories. The question whether the category of 'draftsmen' is really essential or whether it can be dispensed with should also be examined with an open mind.

- Further, the Ministry should also give full con-107 sideration to the views of Shri P. L. Verma and the Director of Central Road Research Institute regarding the future training of engineers and other staff and should have the subject fully thrashed out in the coming conference of Chief Engineers and with the representatives of other Central Ministries concerned. What should be regarded as a reasonable ratio of Engineers : Overseers : Draftsmen: Tracers should be carefully examined and fixed. Having done that, steps should taken to see that proper training facilities are be provided approximately in the same ratio. The Engineering Personnel Committee have anticipated that in 1960-61, engineering personnel will be in short supply to the extent of about 1800 graduates and 8000 diploma holders in different branches. To meet the shortage, they have recommended that the capacity in existing established institutitons should be fully expanded and that 18 colleges and 62 diploma institutions should be opened. The Committee hope that these recommendations will be given prompt attention.
 - 110 The Committee are of the opinion that the process of mechanisation will have to be gradual and will have to be introduced on a limited scale. The Committee suggest that a stretch of 100 miles of road—entirely new construction—might be earmarked for mechanised process. The results achieved should be carefully analysed and if the results indicate that there is a net gain and that

20

21

I	2	3
		the employment potential is not materially affect- ed (due to the increased rate of activity) then and then only the process of mechanisation should be further extended.
22	116	The Committee suggest that the question of advance planning on a long-term basis should be discussed at the next conference of the Chief Engineers, and steps taken to ensure that maximum advantage is taken of planning on a five year basis.
23	117	Incidentally, the Committee were given to under- stand that about 2/3rds of bitumen required for road construction was being produced in India, whereas the balance was imported from abroad. The Committee suggest that vigorous steps should be taken to achieve self-sufficiency in this respect.
24	118	One of the view points strongly put forward before the Committee was that the Government Depart- ments responsible for road construction in most of the States were inadequate to cope with the large programme of road construction. It was argued that, since the duties of the Engineer- in-Charge of road work also included work of other nature such as buildings, irrigation works etc. considerations for roads had engaged much less attention than was desirable. It was fur- ther argued that the achievements of States like Madras where there was a separate Highway Department were much better than in other States. The Committee are not in a position to pronounce a categorical opinion on the subject. They are, however, of the opinion that this ques- tion needs a very careful examination. They, therefore, suggest that the Ministry of Transport should depute an officer on special duty in consul- tation with the State Governments to make a comparative study of the patterns of adminis- tration in different States in so far as the Engi- neering Department is concerned. If such a comparative study definitely reveals that the sys- tem prevalent in Madras is conducive to better results, other State Governments may be per- suaded to adopt that system with such modifica- tions as are considered necessary to suit local conditions.

I 2	

77

25	121	The Committee appreciate that the implementation of the suggestions made by Shri E. A. Nadirshah, ex-President, Indian Roads and Transport Deve- lopment Association with regard to the economic development and maintenance of roads as given in para 120 would involve heavy expenditure. The Committee, therefore, recommend that the Ministry of Transport should keep these sugges- tions before them for gradual implementation, subject to the availability of funds.
26	I22	The Committee appreciate that in view of the high cost involved in putting modern surface it may not be possible to undertake large programmes of converting ordinary surfaced roads into modern surfaced roads. The Committee, therefore, re- commed that the Ministry should prepare a per- spective plan of gradually converting more of earth. roads into hard surfaced ones and for im- proving the surface of National Highways with a view to economise in the cost of vehicles. Further construction of roads specially in rural areas by soil stabilisation on scientific lines should be encouraged in view of its suitability for light traffic, without any protective treatment.
27	130	The Committee suggest that since the Standing Committee on Roads has been abolished an Ad- visory Committee consisting of the representatives of various State Governments, Ministries of the Government of India concerned and of Chambers of Commerce & Industry and the Automobile Associations etc., may be constituted to advise on matters relating to priorities, co-ordination and future road construction schemes etc.
28	138	From the figures supplied to them, the Committee observe that the unspent balance in the accounts of different States in the Central Road Fund as on 31st March, 1956 is very heavy. The Committee consider it very unfortunate that on the one hand, when there is a pressing need for the construction and improvement of roads to meet the transport requirements of the country, the Central Road Fund is not being utilised expeditiously for the rapid development of roads. This indicates lack of proper co-ordination between the Centre and the States. The Committee suggest that the Ministry of Trans- port should hold an urgent meeting with?the re- presentatives of the States to devise ways and m ans

		78
I	2	3
	<u></u>	of proper and prompt utilisation of balances accu- mulated in the accounts of different States from the Central Road Fund.
29	I 4 4	The Committee refer to para 38 of their Forty-fifth Report, where the necessity of improving the bullock cart has been stressed. Improvement of the bullock carts—providing rubber tyres to them, for ex- ample, will have a good effect on the maintenance of village roads as well. The Committee, there- fore, suggest that the feasibility of giving research facilities from the Central Road Fund for the improvement of bullock carts should be care- fully examined.
30	149	The Committee observe that the cost of administering the Central Road Fund has shot up by 4½ times during the last eight years. The Committee therefore, recommend that all possible steps should be taken to bring this expenditure to the minimum so that the money so made available might be uti- lised in the actual execution of additional projects.
31	152	The Committee recommend that an early decision should be arrived at on the question of the status of the Central Road Fund in accordance with the requirements of the Constitution.
32	161	The Committee agree with the view of the Director of the Central Road Research Institute and re- commend that if the field experiments proposed to be carried out on an extensive scale show satisfactory results, the Transport Ministry should take posi- tive steps to encourage construction of stabilised soil roads specially in the rural areas in view of the low construction and maintenance costs involved.
33	164	The Committee hope that field trials on methods of stabilisation of desert sands will commence without undue delay and that the hitherto neglected areas in Rajasthan etc. would be able to get the benefit of such roads in the early future.
34	166	The Committee feel that the bullock carts as they are today do a great damage to the road surface and from this point of view the evolution of a flexible wheel axle system will go a long way in removing the defect. The Committee, therefore, recommend that in the initial stages, Government should give suitable subsidies to the village people to purchase the rubber bush for the wheels as and when it is perfected in order to popularise it.

•

I 2 3						
	I	2		3		

167 The Committee feel that experiments and studies on physical means of keeping the accidents rate within reasonable limits and regarding road users' behaviour, flow of mixed, fast and slow traffic etc. with a view ultimately to lay down rules for the design and construction engineers and also for traffic control authorities require to be intensified.

36 171 The Committee feel that there is a certain type of traffic on some State Highways and a different type of traffic on certain other State Highways. What is the particular type of road for a particular type of traffic, what will be best type of road, what will be the capital investment and the maintenance cost for such roads, how can there be a changeover to a superior type, what is going to be the effect economically-these and similar questions should also be studied by the Research Institute as the conclusions arrived at will help a great deal in determining the policy that the Government may The Committee, therefore, adopt. recommend that the research work should be further intensified in these directions with a view to providing concrete results for successfully implementing the huge road construction programme which will be undertaken by the various States during the Second Five Year Plan. Concrete proposals emanating from the Institute would be of immense value particularly so, if they are submitted during the early stages of the implementation of the Plan.

The Committee feel that much headway has not so 177 37 far been made in the field of road research in the country and the road research laboratories, whereever they exist in the States are not adequately equipped and have no funds to do reasearch on a The Planning Commission while large scale. allocating money to the States to be spent on road projects has not separately allotted any sum for setting up of test and control laboratories in the States to ensure that the work is carried on with proper specifications and on strictly scientific lines. The Committee, therefore, recommend that the Planning Commission while allocating funds to the States should earmark separate sums for the establishment of testing laboratories in the States. This would encourage setting up of nucleus research centres in the States all over the country to tackle problems peculiar to their regions and would also enable the Central Road Research Institute to play a more positive role in assessing the requirements of different States in the field of road research.

		80
I	2	3
38	178	The Committee further recommend that the Ministry of Transport should discuss this subject in the next conference of Chief Engineers and prepare a plan for establishing a net work of research stations to facilitate research work on roads which has been very poor so far.
39	179	The Committee also consider it necessary that some constant channel for imparting information to the Community Projects and National Extension Ser- vice areas should be established by the Road Research Institute. All research, no matter of what type it is, would be futile if its results cannot be brought home to the common man in the village. In the opinion of the Committee, the best channel of bringing the benefits to the villages emanating from the results of scientific research would be through the Com- munity Projects Administration.
4 0	181	The Committee feel that unless some sort of specific provision of funds was made in the way suggested by the Director of the Road Research Institute, the results of research will not be of much benefit. There is no point in doing research unless funds are provided to bring it up for experimentation. The Committee, therefore, recommend that the Planning Commission should persuade the States to agree to the proposal referred to in para 180 and see it through.
41	182	The Committee understand that the research work in the Institute has been much hampered in the pre- vious years owing to the shortage of residential accommodation for the staff within reasonable dis- tance from the Institute. They hope that the work of construction of quarters for the staff of the Institute would be expedited. They recommend that in future, whenever a scheme of this nature is drawn out, provision of staff quarters (in the vicinity of the area) should also be incorporated as a part of the scheme.