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## HIGHWAY FINANCE

Thos. H. MacDonald, Chief, Bureau of Public Roads  
U. S. Department of Agriculture

6th General Congress  
International Chamber of Commerce

Committee on Highway Transport

Washington, D. C.  
May 5, 1931.

About two decades have passed since one of our States, predominantly agricultural in character, built its first mile of rural paved roadway. The cost was financed in part from public funds and in part from private contribution. Not at that time or for many years following did anyone foresee that the same State would be able, as it was in the one year 1930, to finance and to build more than one thousand miles of standard paved roadways, or that by the end of 1932 its system of primary rural highways would be nearing completion to modern standards of construction.

Even with statistical proof it is difficult to convince the public at large, much less those of other countries, that the cost of this whole primary road improvement program has been predicated upon the road user taxes, i. e., the earnings of the highways themselves, plus a small percentage of aid from the Federal Government. Not only is this a true statement of fact, but also for some years the State has taken annually from its income from road user taxes a large sum to aid the improvement of secondary roads.

While this is a noteworthy illustration of the earning capacity of highways as a single instance, it is recited here as typical of what is taking place in a large number of our States whose experience has followed the same broad outline, varied principally in detail and in rate of progress.

The substance exists in abundance upon which to turn this discussion into an exhortation of faith - faith in improved highways as an income producing investment rather than a matter of Governmental expense. Just now this is a note to be accented to combat some of the false economy measures which are widely urged as a means to help end the world-wide economic depression.

This, or any other time, is not the proper time for a hysterical expansion of road building far beyond the capacity of the established organizations to administer or to build efficiently. But there has never been a period in modern times when a reasonable expansion of highway improvement has been supported by so many good and financially sound reasons. World-wide prosperous conditions would offer more good reasons

for curtailing road work than the present situation, although it will be many years before any country can afford to curtail a reasonable annual program of new work in addition to a progressively more exacting maintenance of existing roads. Depression is producing roads at costs so low in comparison to former prices that the interest charges can be carried for some time before the total will reach what has been considered a fair price. At the same time employment is provided that materially aids a bad situation.

During February of this year, a month of minimum possibility for using labor on the roads, more than 170,000 men were employed on State and Federal aid road work, which does not include any local road employment. This number is rapidly increasing as weather conditions permit.

When the economic pendulum swings the other way prosperity will throw additional traffic to the roads, which must be provided for with new construction.

These comments are induced by the temper of the moment to criticize governmental expenditures in toto without any attempt to separate expenses from productive investment. The present adverse conditions will pass, but along with the material causes for a return to more normal conditions, the elements of faith and farseeing judgment will be potent factors in worldwide economic restoration.

Thus a discussion of highway finance, to be of any immediate value to an organization of international complexion and influence, must concern itself with fundamentals, which may be affected but can not be proven unsound, by adverse conditions.

As a background there are certain essential considerations. The establishment of sound methods of financing must be predicated upon the time element and provide for continuity of operations. The improvement of modern highways adequate for any nation is a long time undertaking, and to be accomplished must be established on a continuing basis. The annual rate can be expanded or contracted, but only reasonably so if the work is to be carried on economically and efficiently.

Much has been written concerning the changes brought about by the invention of the internal combustion engine, but very little academic discussion has centered around the perfection of the pneumatic tire, and its importance to the growth of highway transport has not been as yet fully evaluated. This combination has produced such wide flexibility in sizes and capacities of loads, such speeds, such riding comfort, and in general such wide and unfettered utility in transportation that the growth in highway transport is continuous.

Although in many countries there have been already material changes, as time passes there will be a constant and profound readjustment in our economic and social structure because of the adaptation and expansion of highway transport.

The present utilization of highway transport may be approximately measured by the number of vehicles in use in proportion to area and also population. In Appendix I is indicated the total number of motor vehicles by countries and the number of vehicles per square mile and per 1000 population.

The United Kingdom of Great Britain leads in the number of vehicles per square mile, 16.2, and Belgium follows with 13.5. The United States of America is first in number of vehicles per 1000 population, 217.5, and Canada follows with 123.3. At the other extreme the number of motor vehicles in proportion to area and population is so small that the influence upon the economic life of the nation is relatively nothing. This does not indicate that highway transport is non-existing or not required; rather it indicates the long struggle ahead of these nations to provide adequate highways.

In the countries where highway transport has developed materially, the sums annually required for highway construction and maintenance are an important item of the annual governmental budgets. Taking the United States of America as an example of the nations in which highway transport has had a very large development, the annual budgets for highway purposes and their relations to the total budgets are shown in Appendix 2. For the year 1930 the Federal Government highway expenses totaled 2.19 per cent of the total Federal budget receipts. The State expenditures for highways for the year 1929 were 21.3 per cent of the State budget receipts.

These percentages do not include the expenditures of municipalities or other governmental units smaller than the State for local roads. For many years these expenditures far exceeded the combined State and Federal expenditures and now approximate them.

In some countries the local budgets for roads, other than streets in municipalities, are relatively small to the point of non-existence. In a few the total still exceeds the combined State and national budgets.

These facts are only indicative of the extreme variations between countries and the utter futility of attempting comparisons or establishing like practices in countries. The financing of highways will always be a product of the economic structure of the country itself.

On the other hand, the general subject of highway finance with all of its ramifications has engaged the attention of representatives of national and international organizations for many years. From the periodic conferences and congresses have come a series of studies and conclusions that are beyond doubt expressive of international thought and experience. From these sources (See Appendix 3) a worldwide viewpoint is obtained.

It appears desirable to summarize briefly the principles expressed upon which there is apparently an international meeting of the minds of those who occupy positions of responsibility for and authority over highway affairs in their respective countries. While as indicated, wide differences in the economic structure and situations exist between the countries of the world, the same underlying principles are applicable to financial policies in all countries.

These are grouped with particular reference to their dominant motive or particular application, but summarized in brief form which fails to develop the shades of meaning which may be necessary for application to any particular country. Also conditions would vary so widely that it must be emphasized many exceptions can be found in individual countries to the application of general financial principles.

#### Group 1. - Administrative Policies Essential to Sound Financing.

Highways should be classified. Broadly the division is: (a) general use highways; (b) local use highways. These two general classes may be subdivided.

The general use highways would include the roads which are necessary to the development of highway transportation and which are used by the general public.

The local roads would include those whose principal use is by those living upon or contiguous to them.

The basis of highway classification is a study of the present and potential use.

A highway budget should be established covering necessary expenditures over a period of years. The budget should be measured not only by the desirable program of construction and maintenance but by other relative needs for public expenditure.

GROUP 2. - Sources and Disposition of Highway Revenues.

The cost of the highway program should be distributed equitably in relation to the direct and indirect benefits to the various classes of persons or property benefited, taking into consideration the capacity of each class to pay, and the other taxes imposed. The principal sources of revenue are:

General taxes on property, which should be conserved so far as possible for the development of local roads;

Assessments for special benefits to property not to be used generally but in specific cases, and in proportion to special benefits arising through road improvement;

Road user taxes including license fees and fuel taxes not exceeding a fair burden upon the highway user or the point of diminishing returns. The income from these taxes to be used first for systematic maintenance of general use highways, and the additional amounts for construction of the general use highways or for the retiring of principal and interest of bonds for this purpose. All road user taxes except necessary administrative expenses should be set aside and used solely for highway purposes. These taxes should be levied, collected and expended by a major governmental agency, either state or national.

Miscellaneous highway income. This principally includes appropriations made from general revenues; also any other special revenues made available for road purposes.

GROUP 3. - Organization and Control.

Each major unit of Government should maintain an adequate highway organization of trained technical personnel continued in office during competent service under Civil Service or similar fixed policy.

Each major organization must have sufficient direct or supervisory control over the road program to insure direction of expenditure to the improvement of roads in the order of their importance to the public, and to secure the objective of a unified system or systems where different parts are built under control of the component divisions of Government. Financial assistance extended by the state and nation to the next order of governmental divisions is an effective method of securing important objectives. Thus, national aid extended to the States provides a continuity of major highways between states and secures a correlated national system of highways; and State aid extended to the counties secures a desirable measure of supervision of the technical standards and a selection of improvement best calculated to supplement the State road system. This plan may be used to secure a more equitable distribution of costs between the divisions of government and sources of revenue.

GROUP 4. - Anticipation of Revenues.

The anticipation of road revenues through bond issues for expediting improvement of general use highways is sound if properly administered under competent management, and if the amount of the bonds issued bears a conservative relation to the assured income.

GROUP 5. - Construction and Maintenance Programs.

Adequate maintenance costs should be regarded as a first obligation upon road revenues, and the balance of the income available for new construction should be used for improvement of a class or type, justified by the potential earning capacity of the highway.

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Because of the competitive condition which has developed in this country between different forms of transportation, one phase of highway finance may be properly touched upon in an international meeting, since this same situation exists in greater or less degree in some of the other countries.

There are two general classes of rural highways, - State and local roads. Federal financial assistance is extended to a portion of the State roads, which comprise in excess of 300,000 miles. Federal aid is limited in its application to about two-thirds of this mileage. While the local roads in the aggregate include about 2,700,000 miles, the competition which exists between rail and highway transport is confined almost wholly to the State systems. These systems taken as a whole cover the United States with a network of highways reaching every important city and town, and furnish the routes for all principal intra-state as well as inter-state highway traffic movement.

There is a very small amount, if any, of private car, motor bus or motor truck operations which is competitive in any way with the steam railroads on other than the State systems. Since these comprise the highways of general use, the road user taxes have been largely devoted to their construction and maintenance.

Two policies have been followed. In some States the annual total of road user taxes has been expended, first for maintenance, and second to carry on as large a program as possible of new construction. In many other States, after deducting maintenance requirements, a considerable portion of the balance is being used to pay the interest and retire the principal of bonds issued in anticipation of these revenues. Any remaining balance is used for new construction.

There have been no bond issues in recent years of any considerable size for State road purposes which were not predicated upon the road user taxes. If, therefore, the total expenditure for State highways is considered for the past ten years, the percentage of this total supported by the road user taxes shows a steady and large increase.

The total disbursements by the States for State highways in 1929 were \$884,000,000. The income from the motor vehicle fees and the gasoline taxes for the same year devoted to this purpose was \$565,000,000. The bonds issued in anticipation of the road user taxes amounted to \$114,000,000 of the total disbursement, bringing the percentage of total expenditure supported by the road user taxes to 78 per cent.

The tendency is growing rapidly toward the elimination of all general property taxes by the States in supporting the State road program, and any taxes levied upon the railroads and used for this purpose can be dispensed with without impairing the ability of the States as a whole to carry on an adequate State highway program.

The local roads cannot fairly be brought into any discussion of competition between rail and highway transport, since the rail movement is from station to station, and highway movements between towns and cities are almost exclusively over the State highways.

In 1929 approximately \$750,000,000 was spent for the improvement of local roads, exclusive of city streets. Road user taxes to the extent of \$122,000,000 were used for these roads, or about 16 per cent, plus the bond issues used for this purpose supported from the user taxes.

The only question that would seem to be reasonably germane to the matter of expenditures for local roads is whether the taxes paid by the railroads which are used in any measure for this purpose are fair or unfair. That is, this is not a question between the road user taxes and railroad taxes. The matter of fairness of any taxes levied upon the railroads for the development of local roads can never be determined so long as taxing authority over the railroads is distributed among so many taxing bodies.

In the highway field it has been a strong contention that the user taxes should be levied, collected and expended under the direction of the State, and this would seem to be a reasonable plan to follow in considering any measures of relief for taxation of the railroads. In this connection, there has been a tendency to total highway expenditures for both State and local roads, and consider the road user taxes in relation to the whole. There is a vast mileage of public roads and streets whose only service is to the land, whether it be used for any character of agriculture and other purposes, or in cities for residential areas. On these there is no general flow of highway traffic. Their improvement certainly cannot be made a fair charge against the road user.



The adjustment between State and local roads is rapidly taking place in two ways. First, by an absorption of the more important local roads into the State systems, there to be financed in large part by the user taxes; and second, by the allocation of a goodly percentage of the user taxes for the use of the local roads. This adjustment is taking place continuously, so that each year will show an increasing percentage of the total cost of all roads of general use paid from the user taxes.

These observations are not intended to be conclusive, but rather indicative of the desirability of a more careful study and a more complete understanding of the existing facts, and the trends of highway financing, especially as it relates to the conflicts between transportation agencies. Certainly every effort should be made to bring about relative fairness in all matters vitally affecting the different types of essential transportation.

APPENDIX 1

RELATION OF MOTOR VEHICLES IN VARIOUS COUNTRIES  
OF THE WORLD TO THEIR AREA AND POPULATION  
AS OF JANUARY 1, 1931.

(Data on foreign census of motor vehicles from U.S. Department of Commerce)

IN ORDER :	NAME OF	NUMBER OF :	RATIOS	
OF MOTOR :	COUNTRY	MOTOR	MOTOR VEHICLES	MOTOR VEHICLES
VEHICLES :		VEHICLES	PER SQUARE MILE:	PER 1,000
:	:	:	:	POPULATION
1	United States	1/ 26,697,398	8.8	217.5
2	United Kingdom	2/ 1,529,272	16.2	33.4
3	France	1,459,650	6.9	35.8
4	Canada	1,224,098	0.3	123.2
5	Germany	679,300	3.7	10.8
6	Australia	567,020	0.2	8.8
7	Argentina	366,324	0.3	33.6
8	Italy	293,215	2.4	7.1
9	Brazil	199,570	0.1	4.9
10	Spain	189,650	1.0	8.3
11	New Zealand	189,615	1.8	13.5
12	India	174,450	0.1	0.6
13	Union of So. Africa	159,400	0.3	23.0
14	Belgium	158,986	13.5	19.9
15	Sweden	145,273	0.8	23.7
16	Holland	118,735	9.0	16.0
17	Denmark	110,324	6.5	32.1
18	Japan	95,719	0.4	1.1
19	Dutch East Indies	84,783	0.1	1.7
20	Switzerland	81,045	5.1	20.2
21	Mexico	80,801	0.1	4.9
22	Czechoslovakia	79,006	1.5	5.4
23	Algeria	50,250	0.2	8.4
24	Irish Free State	48,400	1.8	16.3
25	Hawaii	47,846	7.5	13.0
26	Uruguay	47,430	0.7	25.6
27	Norway	46,463	0.4	17.5
28	British Malaya	41,652	1.5	29.7
29	Poland	41,260	0.3	1.4
30	Cuba	41,222	0.9	11.4
31	Austria	39,209	1.2	5.9

APPENDIX 1 (Continued)

RELATION OF MOTOR VEHICLES IN VARIOUS COUNTRIES  
OF THE WORLD TO THEIR AREA AND POPULATION,  
AS OF JANUARY 1, 1931.

(Data on foreign census of motor vehicles from U.S. Department of Commerce)

IN ORDER :	NAME OF COUNTRY :	NUMBER OF MOTOR VEHICLES :	RATIOS	
			MOTOR VEHICLES PER SQUARE MILE :	MOTOR VEHICLES PER 1,000 POPULATION :
32	Philippine Islands	37,049	0.3	2.9
33	Rumania	37,000	0.3	2.1
34	Chile	36,245	0.1	8.3
35	Finland	36,234	0.2	10.1
36	China	35,489	0.01	0.05
37	Egypt	32,627	0.1	2.3
38	Russia (U.S.S.R.)	30,910	0.004	0.2
39	Portugal	30,557	0.9	5.4
40	Ceylon	20,727	0.8	3.8
41	Brit. - East Africa	19,453	0.02	1.7
42	Hungary	19,333	0.5	2.2
43	Greece	19,250	0.4	3.1
44	French Indo-China	18,595	0.07	0.9
45	Venezuela	18,000	0.1	5.9

1/ Includes 173,619 official cars.

2/ United Kingdom of Great Britain

England	1,306,458	25.7	35.1
Scotland	124,098	4.1	25.4
Wales	64,177	8.6	28.9
North Ireland	27,035	5.2	21.5
Channel Islands	5,690	75.9	63.2
Isle of Man	1,814	8.0	30.2
Total	1,529,272	16.21	33.4

APPENDIX 2

RELATION OF U. S. GOVERNMENT HIGHWAY EXPENDITURES  
TO TOTAL RECEIPTS

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Fiscal Year	Federal Budget Receipts	Highway Expenditures Federal Aid, Forest Road and National Park	Per Cent Highway Expenditures to Total Receipts
1926	\$3,962,755,690	\$101,261,001	2.56
1927	4,129,394,441	94,917,218	2.29
1928	4,042,348,156	94,515,723	2.34
1929	4,033,250,225	97,433,182	2.42
1930	4,177,941,702	91,333,001	2.19

Receipts: From Statistical Abstract of U. S. - 1930 (p. 171 - Table No. 182) also World Almanac - (p. 156) - (U. S. Treasury Figures).

Highway Expenditures: (Federal aid Roads - Bureau of Public Roads.  
(Forest Roads - Bureau of Public Roads and Forest Service.  
(National Parks - Bureau of Public Roads.  
(Mt. Vernon Memorial Highway.

APPENDIX 2 (Continued)

RELATION OF STATE HIGHWAY DISBURSEMENTS TO  
TOTAL STATE FUNDS AVAILABLE

Fiscal Year	State Budgets (Receipts)	Highways - State Disbursements	Per Cent Highway To All State
1926	\$3,288,904,527	\$621,744,210	18.9
1927	3,548,465,739	707,179,148	19.9
1928	3,880,078,608	827,549,983	21.3
1929	4,274,318,100	910,485,291	21.3
1930			

Source: Financial Statistics of States (1926-1928) Table 2 (Total Receipts). (Aggregate of receipts and cash on hand).

APPENDIX 3

Conclusions upon Highway Finance.

- 5th International Road Congress, Milan, 1926
- 6th International Road Congress, Washington, D. C., 1930
- 1st Pan American Road Congress, Buenos Aires, 1925
- 2nd Pan American Road Congress, Rio de Janeiro, 1929
- Joint Committee of The American Association of State Highway  
Officials and U. S. Automobile Chamber of Commerce.
- 16th Annual Meeting, American Association of State Highway  
Officials, 1930
- 4th Congress of International Chamber of Commerce, Stock-  
holm, 1927
- 5th Congress of International Chamber of Commerce,  
Amsterdam, 1929