

COMMUNICATION STUDIES
SERIES I No. 1

MEANS OF TRANSPORTATION
IN RELATION TO NATIONAL PLANNING IN MEXICO

INSTITUTE OF CURRENT WORLD AFFAIRS
MEXICO CITY -- SEPTEMBER 1931

INSTITUTE OF CURRENT WORLD AFFAIRS

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September 8, 1931

Mr. Walter S. Rogers,
522 Fifth Avenue,
New York, New York

My dear Mr. Rogers:

In November of 1930, I sent you with my letter No. 94 the translations of two letters from the Head of the National Planning Commission and from the Minister of Communications and Public Works in which an invitation was extended to me to assist the National Planning Commission to initiate a series of monographic studies basic to the preparation of a National Plan for Mexico. With your approval I accepted this invitation and for the past eleven months I have devoted such time as I could spare from my other duties to this work.

Specifically, I have mapped out and with the cooperation of the Head of the National Planning Commission directed an investigation of the first problem selected for study by the Commission - "Means of Transportation In Relation To National Planning In Mexico." In addition to preparing the outlines for the whole study and supervising the research, I have written the first section dealing with highways and am now revising and translating into English the other sections of the study written by the several members of the Commission. I also translated into English the "National Planning Law". This translation was published and widely distributed in Mexico and the United States.

In transmitting to you the first section of the report on transportation problems, I wish to take advantage of the opportunity to reaffirm my belief that the work being done by the National Planning Commission is of the greatest importance and significance. I feel that in cooperating with the Commission I have not only been able to add to my store of knowledge about Mexico, but also to make some slight contribution to a movement which conceivably may profoundly affect the future of the Mexican people.

A planned Mexico developing and growing along lines and in ways predetermined by careful and objective studies of Mexican problems may never become a complete reality, but that this ideal may be achieved at least in part is entirely within the realm of possibility. If, as my experience in working with the Planning Commission would seem to indicate, the Institute of Current World Affairs can in any way assist to bring about the realization of such an ideal I think by all means it should do so. I know of no better way to carry out in Mexico the Institute program of "acquiring knowledge and putting it to work in the world".

Very sincerely yours,

A handwritten signature in dark ink, appearing to be a stylized name or set of initials, possibly "A. B.", written in a cursive or semi-cursive style.

MEANS OF TRANSPORTATION
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INTRODUCTION

The movement for National Planning is one of the most interesting and significant in the last decade of Mexican history. Beginning in the latter part of the ten year period of economic and social disorder and unrest ushered in by the Madero revolution of 1910, the movement as time went on attracted the attention of more and more of the leaders of Mexican thought and action.

In January 1929, the then Minister of Communications and Public Works, Ing. Javier Sánchez Mejorada, gave the first official recognition to the National Planning idea by creating in the Ministry of Communications a department of National Planning (Comisión de Programa). A second milestone was passed in January 1930 when there was held in Mexico City the First National Planning Congress. Partly as a result of the interest and enthusiasm awakened at this Congress, the final official imprimatur was placed on the National Planning movement by the promulgation on July 12, 1930 of "The National Planning Law for Mexico."

The first two articles of the National Planning law state the aims and objectives of National Planning in Mexico in the following terms:

Article 1:- The planning of the United States of Mexico has for its aim: to coordinate and direct the activities of the different Governmental agencies so as to realize the material and constructive development of the country in an orderly and harmonious manner, taking due account of its topography, climate, population, history,

tradition, social and economic life, national defense, public health and its present and future needs.

Article 2:- In order to achieve the above mentioned aims a "National Plan of Mexico" and its complementary specifications shall be prepared. This plan, the object of which shall be to regulate the harmonious development of the country, shall be made up of the graphic documentary studies of all the topics and subjects enumerated in the preceding article.

The responsibility for making the various preliminary monographic studies basic to the preparation of the National Plan and for the drawing up in due time of the Plan itself is vested by the Planning Law in the Ministry of Communications and Public Works and specifically in the division thereof known as the Program Commission. The following report on transportation problems in Mexico represents the first of the series of "graphic documentary studies" outlined in the National Planning Law.

Concerning the history and purposes of the study of transportation problems several points should be noted:

1. The study is the product of the cooperative work of the various members of the Program Commission whose names appear below, and of Dr. Eyles N. Simpson, Senior Associate in Mexico for the Institute of Current World Affairs, who was invited by the Head of the Program Commission, Arq. Carlos Contreras, to assist in the direction and writing of the report.

2. It should be clearly understood that the report is essentially a preliminary survey made with a view to clearing the ground and determining the best technique of procedure

and the most desirable method of presentation for the whole series of monographs outlined in the National Planning Law. Its authors in no sense consider the report on transportation as either exhaustive or final. Many of the sections in the report, as it now stands, will have to be expanded and the conclusions offered in the last chapter will undoubtedly have to be modified in the light of new facts and additional information which will be uncovered as the various problems relating to transportation become the subject in other monographic studies of more detailed and careful analysis.

3. As may be seen from a glance at the general table of contents, the plan in writing the report has been to prepare a series of sections or chapters giving the history, present status and the projects or programs of future development for each one of the principal means of transportation. Following these essentially factual statements with reference to highways, railways, airways and waterways, are two sections dealing with the distribution and growth of population and with the geographic and economic "natural" areas of the Republic in so far as these areas could be determined on the basis of available data. The final section of the report represents an effort, on the basis of the material presented in the first six chapters, to draw up a series of suggestions and tentative conclusions with reference to the possible future development of the various means of transportation in their relation to each other and to the social and economic development of the nation.

The Program Commission wishes to express its appreciation of the many courtesies and the valuable assistance which have been extended by the various individuals and government departments in the course of the work incidental to gathering the materials for this report. It is particularly grateful to: Ing. Becerril Colín and the National Highway Commission, the Department of National Statistics, the Statistics Department of the Ministry of Agriculture, Ing. Herrera y Lasso of the National Irrigation Commission and Ing. Pedro Sánchez, Director of Geographical and Climatological Studies in the Ministry of Agriculture.

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HISTORICAL REVIEW OF HIGHWAYS IN MEXICO

Pre-Conquest Period

In Mexico, as in other countries, the history of the roads and highways must be written in terms of the development of the methods of transportation. Before the Conquest and the introduction of Mexico to the culture of the then "civilized" world, the native Indians were entirely innocent of any other means of transportation than those afforded by stout legs and strong backs. Lacking horses, mules or beasts of burden of any type, the only roads which existed or were needed were footpaths. It is true that the exigencies of war and inter-tribal commerce had stimulated the stronger war lords to improve some of these foot-ways until they represented considerably more than mere primitive trails. Historians of the Conquest and other early writers describe, indeed, a rather extensive and, under the circumstances, very efficient system of communication between many points on the central plateau and to the coasts on either side. The Lord of Mexico, for example, had established a regular express delivery service (known as the "ycincatelanti" -- i.e., messengers who go quickly) between Tenochtitlan (now Mexico City) and the Gulf coast whereby he was able not only to keep an eye on his vassals but also to receive daily fresh fish and tropical fruits.

Colonial Period

During the first part of the Colonial period, although

here and there short stretches of roads were opened by one Viceroy or another, no really effective system of highways was developed by the rulers of New Spain. The country continued to be almost without exception a land of trails and primitive roads and the means of transportation were the Indian porter, the pack animal and the two-wheeled cart drawn by oxen. There were, according to Professor Bernard Moses, several reasons (in addition to the obvious difficulties presented by the tortuous morphology of the Mexican terrain) why the Spaniards neglected the building and improving of roads.

"We have to take account of the fact that the Spaniards acquired from the Moors, during their long association with them in the Peninsula, an indifference to roads suited to vehicles with wheels, and that the colonists who went out from Spain in the sixteenth century carried this indifference to the New World. Settlements were made and cities grew to importance, with no other means of communicating with the world at large than that offered by the Indian trail or the mule path.

"This was not a matter of great moment so long as Spain's colonial restrictions on trade were maintained. A few Indians or a few donkeys would carry at a single trip all that any town received from Spain in the course of a year; and the colonists were thus thrown back upon their immediate efforts for the satisfaction of their wants; and the King, by prohibiting their trade with the colonies, emphasized their isolation, and indicated the uselessness of means of communication."¹

As time went on, however, the policy of Spain with reference to the trade and commerce of the Colonies was altered; moreover, the population and number of settlements in New Spain

increased. These facts meant expanding commerce and trade both internal and external and correspondingly the necessity for better means of transportation. By the end of the 18th century accordingly, there had come into being in Mexico a rather extensive, if somewhat unsatisfactory, system of cart and wagon roads. Humboldt describes the road situation at that time as follows:

"In view of the fact that all communication with Europe and Asia takes place through the ports of Veracruz and Acapulco respectively, all objects of importation necessarily pass through the Capital which for this reason has been made the center of interior commerce. Mexico City, situated on the ridge of the mountain chain, commands, so to speak, the two seas; in a direct line it is 69 leagues from Vera Cruz, 66 from Acapulco, 79 from Oaxaca, 440 from Santa Fe (Nuevo México). From the position of the Capital it follows that the most frequented and important ways of communication to commerce are: (1) from Mexico City to Vera Cruz via Puebla and Jalapa; (2) from Mexico City to Acapulco via Chilpancingo; (3) from Mexico City to Guatamala via Oaxaca and (4) from Mexico City to Durangó and Santa Fe.

"The roads on the central Table Land might be called longitudinal and are very easy of preservation. From Mexico City to Santa Fe the road can be used for vehicles for a distance greater than that covered by the Alps if they were prolonged without interruption from Geneva to the coasts of the Black Sea. In fact, on the central plain one may travel in all directions in four wheeled vehicles -- from the Capital to Guanajuato, Durango, Chihuahua, Valladolid, Guadalajara and Perote. However, on account of the bad state of the roads, no regular system of wagon transport exists and commerce is carried on for the most part by the thousands of horses and mules which cover the roads of Mexico in

large droves...

"The roads leading from the Mesa Central to the Coasts, which I call transversal, are the most toilsome and the ones principally deserving the attention of the Government. Of this type are the roads from Mexico City to Vera Cruz and Acapulco, from Zacatecas to Nuevo Santander, from Guadalajara to San Blas, from Valladolid to the port of Colima and from Durango to Mazatlan. The most frequented of these transverse roads are those running from the Capital to the ports of Vera Cruz and Acapulco. The /annual/ value of the precious metals, agricultural produce and the goods from Europe and Asia passing over these two roads is 64,000,000 duros... The Vera Cruz road from the village of Las Vigas to El Encero is very often only a narrow and winding footpath and hardly will another so toilsome a road be found in the whole of America..."²

During the Colonial period the principal roads in Mexico were under the jurisdiction of merchant's organizations known as the "Tribunals of Commerce" and the funds for preservation and repair were derived from a certain import duty called the avería and from tolls paid by the users of the roads. Other (secondary) roads were "confided to the care of the local authorities, who with pitiable frequency neglected them because of lack of funds, thus making it necessary for private individuals who had to use them to repair them at their own expense."³

The part played by the Tribunals of Commerce was of very great importance in the history of Mexican roads, for it was these organizations which were responsible for the construction of the first road, worthy of the name, between Mexico City and Vera Cruz. Indeed, due to the rivalry of the Tribunal of Commerce in Mexico City and an organization of the same name in Vera Cruz,

not one but two roads from the Capital to the Coast were completed in the first years of the 19th century. From Mexico City to Puebla the route of these roads was the same. At Puebla however, the rival roads parted company and one (that of the Mexico City Tribunal) reached Vera Cruz by way of San Andrés, Orizaba, and Cordoba, while the other went by way of Tepeyanalco, Perote and Jalapa.

Although millions of pesos were spent on these roads, and although they were undoubtedly a great improvement on the former routes, they still left much to be desired. The historian Presbyter Mora remarks in his book "México y sus revoluciones" that "though the works undertaken and carried on were gigantic, many of them have not the solidity and stability desired, because they were not made with the necessary knowledge of the soil on which they were constructed."⁴ The result was that the roads were often closed for many weeks at a time by landslides, floods, and other natural causes.

One other road -- from Mexico City to Toluca -- was also constructed by the Tribunal of Commerce in Mexico City during this period. This road, it would appear, however, was even less successful than the one to Vera Cruz; for in addition to the defects found in the former the causeways on the Toluca road were too steep "on account of the ground not having been sufficiently lowered, from which it resulted...that the horses and mules drawing the carts get too tired and are too much injured even when the load is not of much weight."⁵

The Period after 1821

The century beginning with Mexico's independence from Spain (1821) and extending up to the creation of the National

Road Commission in 1925 was characterized, generally speaking, by retrogression rather than progress in the development of roads and highways. Very soon after independence had been won the new national government abolished the Tribunals of Commerce and assumed the administration of the revenues derived from the tolls and import duties (averías). The funds derived from these taxes the government used for the building and upkeep of roads, however, "only when they were not wanted for more pressing necessities of the always empty public treasury, or for the heads and leaders of the perpetual revolution... Bearing in mind the politically anarchistic circumstances which formed the permanent state of the country, it is not surprising that neither were new roads opened, nor were the few that existed kept in a state of repair."⁶

The principal means of travel in Mexico during the latter part of the 19th century was the stage coach. The first stage line was established between Vera Cruz and Mexico City via Jalapa in 1830⁷ by three men from New England. The coaches used, of the "Concord" type, were built in the United States and their drivers were Americans. This line was later sold to a Spaniard by the name of Anselmo Zurutuza who in time developed a vast system of stage lines connecting up all of the principal provincial centers. (See Map No.1.)

It is hard to find a book dealing with the 19th century Mexico which does not have its say about the dangers and discomforts of travel. The following description by an Englishman who made the trip by diligence from Vera Cruz to Mexico City, is typical.

"I have traveled on rough roads in my time, but on such a road as this never. My companion refused for a time to award

the premium to our thoroughfare; but, just while we were discussing the question and recounting our experience of bone-smashing highways, we reached a pass where the road consisted of a series of steps, nearly a foot in depth, down which steps we went at a swinging trot, holding on for our lives, in terror lest the next jerk should fairly wrench our arms out of their sockets, while we could plainly hear the inside passengers howling for mercy, as they were shot up against the roof which knocked them back into their seats. Aching all over, we reached level ground again, and Mr. Christy withdrew his claims, and agreed that no road anywhere else could possibly be so bad as a Mexican road; a decision which later experiences only served to confirm.

"Our start, every time we changed horses, was a sight to see. Nine half-broken horses and mules, in a furious state of excitement, were harnessed to our unwieldy machine; the helpers let go, and off they went, kicking, plunging, rearing, biting, and screaming, into ruts and water courses that were like the trenches they make for gas-pipes in London streets, with their wheels on one side on a stone wall, and in a pit on the other, and Black Sam leaning back with his feet on the board, waiting with perfect tranquility until the animals had got rid of their superfluous energy and he could hold them in. We were always just going to have some frightful accident, and always just missed it."

Until the coming of the railroads commerce and trade in Mexico during the period of independence, as throughout the Colonial period, continued to be carried on almost entirely by means of pack animals and the two wheeled ox-cart. Thousands of

animals were required; according to one estimate, in the "interior" trade with Durango, Chihuahua and Nuevo México alone, 60,000 pack mules were used. One of the most interesting and colorful chapters in Mexican history is that concerning the folklore, traditions, manners and methods of the arrieros, or mule drivers. 9

In 1867 the toll-tax was abolished by government decree. From this year on the support given by the federal government to the building and preservation of roads became even more uncertain and ineffective than it had been in the past. "The appropriations made by Congress were always more than the sums really spent on the roads, because the scanty state of the public treasury did not allow anything else." 10 Finally, in 1895, due partly to the heavy drain on the public funds occasioned by the building of railroads, the federal authorities gave up all pretense of a nationally supported system of highways. The whole job was turned over to the states. Unfortunately, however, according to Pablo Macedo, the local governments allowed themselves to be "carried away by certain vain propensities and did not promote public prosperity by the development of schools and roads", but rather "applied their efforts to municipal works...such as sumptuous market places and grand theaters." 11 Thus matters stood at the turn of the century. Almost four centuries had passed since the coming of the Spaniards and western civilization and Mexico, so far as its roads were concerned, still remained for the most part in the ox-cart pack mule stage.

THE NATIONAL HIGHWAY COMMISSION
AND THE NATIONAL HIGHWAY SYSTEM

When the National Highway Commission began its work in 1925, it was faced with a tremendous problem. The failures of

the Colonial government were followed by almost a 100 years of cumulative neglect by the national government and to all this, as if the cup of bad roads in Mexico were not already full and overflowing, had been added 10 years and more of revolution, disorder, and general social and economic upheaval. According to Ing. León Salinas, "at the beginning of the year 1925 the only roads in existence in Mexico passable in all seasons were those from Mexico City to Toluca (54 kilometers), from Mexico City to Cuernavaca (68 kilometers), and certain sections of the road between Cuernavaca and Acapulco -- in all hardly more than 150 kilometers on which, due to the lack of pavement, the steep grades, and other bad conditions, traffic could be maintained only with the greatest difficulty."¹²

For a country with an area of 762,000 square miles and a population of more than 16,000,000 certainly it would be hard to imagine a more deplorable state of affairs.

Organization of the Commission

As has already been implied above, to deal with this situation and to provide Mexico with a modern system of highways a special department of the federal government, known as the National Highway Commission (La Comisión Nacional de Caminos), was created. This Commission was made up of three members: a chairman who represented the Executive branch of the government; one commissioner representing the Department of Communications and Public Works and one representing the Department of Finance and Public Credit. The Commission officially began operation in September 1925.

Financing of the National Highway Program

In order to provide for the work to be undertaken by the National Highway Commission, the government on April 6, 1925, imposed a special tax of 3¢ on every liter of gasoline sold. In 1929 (January 11) this sales tax was raised to 4¢ per liter and in 1930 (January 1) it was again raised, to 6¢. In the year 1925 the tobacco tax was also set aside for road building purposes. Although these various special taxes at first were specifically earmarked for roads, later on (beginning with 1926) appropriations for the National Highway Commission were made in the regular budget each year out of the income from general taxation with the tacit understanding, however, that the amount appropriated for roads would not exceed the estimated income from the special tax on gasoline. The sales tax on gasoline in 1925 (April to December) amounted to 3,179,142 pesos; during 1926 it was 5,394,361 pesos; and by 1930 it had reached a total of 13,058,798 pesos.

In connection with the financing of the national highway program in Mexico it should be noted that up to the present time no foreign or local bond issues have been made, nor have any loans been contracted for the purpose of building roads. Moreover, no tolls are collected by the national treasury from traffic passing over the roads. As may be noted in Table No.1 the actual amount expended by the National Highway Commission in the period 1925-1930 was considerably in excess of the total receipts from the gasoline sales tax. The difference was made up out of other sources of government income.

TABLE NO.1

Income from Gasoline Tax Compared with
Total Expenditures of National Highway Commission 1
1925-1930

Year	Income from Gasoline Tax (in pesos)	Expenditures of National Highway Commission (in pesos)
1925	3,179,142.45	2,821,423.98
1926	5,394,361.32	12,117,026.96
1927	5,772,219.34	7,968,399.44
1928	6,579,713.60	11,533,691.25
1929	10,371,497.09	8,700,000.00
1930	<u>13,058,788.61</u>	<u>15,438,700.00</u>
Total	44,355,732.41	58,579,241.63

1

Expenditures for 1925-1929 from "Anuario -- Comisión Nacional de Caminos", figures for 1930 furnished by National Highway Commission. Income from Gasoline tax for 1925-1930 from "Estadística de Petroleo -- 1930", Departamento de Impuestos Especiales, Secretaría de Hacienda.