

OUR INTERNATIONAL RELATIONS AS SHOWN BY THE
PAN AMERICAN ROAD CONGRESS AT BUENOS AIRES.

Address by Thom. H. MacDonald, Chief, U. S. Bureau of Public Roads,
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The international relations of today between the United States of North America and her sister republics of the Western Hemisphere have reached many fields and have attained large dimensions. But it is the future that is important. The character and extent of our present relations fail to measure, indeed, they fail even to indicate the magnitude of the contacts and interests which will be developed through the next quarter century. Pan Americanism is a real, a vital issue. Without the yesterdays of long conflict, of heroic sacrifices and great leadership, these republics, Latin and Anglo Saxon, would not exist. Theirs would not be the proud heritage of political freedom and democratic sovereignty. But these yesterdays have lived. The wars, the sacrifices, the efforts common to all republics to secure and to establish free and stable governments, have at the same time shaped common ideals, common sympathies and mutualities of destiny, of finer strength and higher concept than may be wrought in other and lesser fires. There is not an American, Central, South or North, who is not thrilled by the national airs of the other republics. They each carry the spirit of love of country and independence which he understands and holds dear. This is so true of the people generally throughout this Western Hemisphere that it seems that Divine Providence for a great purpose established democratic government and the love for its principles so widely and so firmly that they must for all time survive and grow better. Pan Americanism is a recognition of the responsibility existing between these republics to preserve these ideals. But this is only one phase; there are many others. Over the next half century the stability of the foundations we are now building will determine the solidarity of the Pan American structure and this in turn will have a profound influence not only upon the sovereign republics themselves, but upon the progress of the world's civilization. This viewpoint is not personal. It is held by those whose faces are turned toward the future, who are acquainted with today's conditions and whose sympathy and intelligence have adequate dimensions to span the distinctions and differences in temperament and national characteristics between those whose traditions and heritage are Latin and those whose traditions and heritage are Anglo Saxon.

There are handicaps. Differences in ancestry, in institutions and in languages exist which must be recognized and accepted. This is progress. Next is the search for underlying principles which are fundamental and necessary for the social and economic development of every country. Mutual

helpfulness in working out these principles will stimulate the growth of Pan American spirit. Our Ambassador to Chile, Mr. Collier, again and again emphasized the principle that permanent advancement in the friendship and confidence between nations must be founded upon mutual benefits. His emphasis is always on the quality of mutuality, of fair and beneficial exchanges. And this is the spirit of Pan Americanism. It is well established, but the possibilities for enlargement are almost limitless.

Perhaps this prologue may seem far afield from the subject of highways, but the first Pan American Road Congress had its inception in this principle of mutual helpfulness and it was undertaken by the Pan American Union as one method of bringing into being definite practical results of a most important character. General Porshing said at Arica: "The greatest need of these countries today is transportation." This after months of personal observation of and contacts with actual conditions over a wide territory and close detailed study of two of the big republics, Chile and Peru.

This conclusion is so profoundly true that it is the conviction of the Delegation from the United States to the Road Congress that in the field of transportation is the greatest opportunity for helpfulness that exists and that this field at this time is limited to highway transport.

Transportation.

Eventually transportation will mean only a fully completed service. It will be so visualized. Time, distance and cost will be the totality for the completed service. When this meaning of transportation is accepted and no other, many of the problems now intricate will be simplified. Many changes will be made that will have a very great effect upon the elements of time and total cost. Distance has always had too great weight in the consideration of transportation. Time and total cost are the really important elements. The history of the pioneer is after all and more than anything else a record of transportation limitations and difficulties. It is true today that our conceptions of transportation are lagging behind the times. The addition of the motor vehicle, the airplane and other improved equipment and instruments, has made possible a perfecting of transportation as a completed service, yet we are regarding them too much as separate entities. We are reluctant to treat the whole problem and to fit the various means and available equipment together to produce the most efficient completed service. Thus it is not desirable to point only to highways.

More efficient transportation as a whole is a vital need for both Central and South America. It also is of more importance to our own relations with these countries than any other single element. No attempt is made in these notes to cover this subject fully and many things may on close study be found far different than the surface indication. But there is no hesitancy in affirming that the greatest single need of these countries is more efficient transportation. The accomplishment of this objective is not possible in any one way any more than in the United States. There are many elements and every variety of condition. The range of these may be indicated but not exhausted by specific recital. For example, Panama needs highways to radiate from Panama City, Colon and the towns of the Canal Zone; also a crossing or crossings of the Canal itself. Much of the production of food stuffs in the interior now comes in by small watercraft, much of which is of the most primitive type. During war or untoward disturbances all movements by water must be placed under rigid surveillance and restrictions. During the recent war one highway reached for some distance in the country from Panama City and we are told became a very substantial factor in the bringing in of food and supplies to the local population. As a result, along this road today is a praiseworthy agricultural development, particularly of dairying, that indicates the influence that serviceable highways will exert.

Generally throughout these countries the hauling of products to, and the distribution, from water and rail points, are practically all by carts or wagons. The two-wheeled cart is perhaps most extensively used, but it has many variations of size and design. In size it ranges from the small cart for a single burro up to the very heavy duty cart with massive wheels ten feet or more in diameter. Oxen or horses are used for power and various figures are given for maximum load up to ten tons. A study of these carts of all shapes, sizes and uses is the most informing as to actual road conditions. Ordinarily a multiple hitch is used. For example, the characteristic hitch on the streets of the city of Buenos Aires is a heavy cart or wagon with a team of horses on the tongue and a lead horse on very long traces in front. One function of the lead animal is to swing the wheels sideways from deep ruts or holes.

One other kind of transport is in very common use, - the pack train. Where the two-wheeled carts cannot go the pack train takes up the burden. Oxen, mules and burros are used, and in the tropics and mountains are practically the only available power. In Chile and especially in the Argentine, horses are used. Probably as good horses as can be found anywhere are bred in the Argentine, but their use is largely limited to this country. In the others, oxen, mules and burros predominate for the transport work. Horses are used for riding and driving purposes.

Only limited loads can be moved by mule cart or by pack train. The ox carts move heavy loads, but the time required is very great. Horse carts are somewhat faster but in the pampas of the Argentine where these are most available, there are long periods when the roads become absolutely unusable for heavy hauling.

In the cities the large number of vehicles required for handling the movement of commodities, together with the introduction of large numbers of motor vehicles, have produced congestion, particularly in the narrow streets of the older sections, that is seemingly far worse than exists in our own cities. For example, the amount of shipping in and out of Buenos Aires is very large. The harbor facilities are inadequate and a large new harbor is being developed. At present the work on this is at a standstill and it is difficult to imagine a scene of greater confusion than the traffic on and around the docks. Most of the trucking to and from the boats is by horse-drawn vehicle. It is stated that because the pavements in the dock district are so bad, it was necessary to abandon the use of trucks. The time unnecessarily consumed by the congestion resulting from inadequate roadways around the harbor must impose a tax on all the business handled much more than sufficient to provide the roadway facilities needed.

It appears that motor vehicles have already been put into service particularly in the towns and cities beyond the capacity of the improved streets and roadways. This has been the history in the United States, but the handicaps upon their utilization have never been so severe.

There is no element of criticism in these statements. The efforts which are being made are most commendable, and in the case of the State of Sao Paulo a real start has been made toward the utilization of the motor vehicle within some reasonable degree of its possibilities. The same may be said of the drives in and around Rio de Janeiro, but these two (and in a less degree a very few other localities) are the only ones where the motor vehicle has the opportunity to demonstrate its real transport abilities because of the lack of serviceable roadways.

There is no way to escape the principle that transportation requires a completed service. In the final analysis production must start with the highways and distribution must end on them. Waterways and railways not only can not perform a completed transport service for the public but must themselves be fed by highway traffic. Even for the industries where there are direct rail loadings such as shipments from mines a large amount of incidental highway traffic is necessary. Since, in general, highways have not been developed, there is not an adequate understanding of their fundamental ability to satisfy certain definite traffic requirements or their absolute necessity to these countries.

Road Building Operations

In general, road material of good quality may be found in the South American countries. It will be necessary, however, to install modern crushing machinery for its reduction to a size that should be used. In fact, the utilization of stone or gravel, crushed to a maximum of three-fourths inch, spread in a thin layer and maintained by dragging would produce astounding results on many miles of highway which now have so rough a surface as to be almost impassable because of over-size stone and lack of continuous maintenance.

In the pampas of the Argentine there is no stone available. It will be necessary to ship material for a considerable distance so that any construction requiring hard aggregate will be relatively expensive.

Much of the street construction of modern type pavements has been done by outside companies. A number of firms from the United States have been and are operating. These use the ordinary equipment but loss of it, and many operations that we now accomplish mechanically are still performed by hand labor.

On the rural highway work hand labor prevails. In general machine equipment is not used. The exceptions to this general rule are chiefly the Provinces of Buenos Aires, Santa Fe and Cordoba in the Argentine. Elsewhere very little equipment is used. The reasons given are a very good exposition of the difference in conditions which prevail between the United States and our sister republics to the south. Mechanical equipment, which is so much a part of every phase of life and work in the United States, has had a very limited development in those other countries. One of the chief exceptions is the sewing machine. Another is agricultural machinery. But the adoption of mechanical devices is not consistent. From the windows of President Alvear's reception room we looked over a beautiful park to watch a large force of men trimming the grass on the lawns with the old fashioned scythes.

Heavy excavation of earth and even solid rock are handled by hand methods. For the rock, explosives are used but the drilling and moving are largely hand labor operations. Wheelbarrows and small mule carts are used for carrying the excavated material. It is stated that the Latin American does not grasp readily the handling of machinery; that his is not the heritage of continuous contact and daily familiarity from childhood with all sorts of power equipment and mechanical devices. Certain it is that these are not handled either with the skill or care that they should have. Yet this is not consistently true, as was evidenced by the handling

of motor vehicles by some of the chauffeurs. There does not seem to be any insuperable difficulty in the present lack of available mechanics.

The cost of mechanical equipment when delivered to these countries is a serious item. Freight, import duties and the difficulty of securing repairs add a high cost that we do not have. Fuel for tractors and other internal combustion power machinery is high priced and not widely distributed.

Another serious difficulty is in the animal power available. As has been stated, except in the Argentine, the draft animals are small. Imagine the use of oxen on a dump wagon filled by a steam shovel or a small mule cart holding say one-third of a yard taking the material away from an elevating grader or even the smallest steam shovel.

Finally there is the relatively low price of labor. It is asserted that the hand labor method is frequently cheaper than other methods. In any event under present conditions it is an error to assume that the same methods and equipment used in the United States are directly applicable to these other republics. But, if there were no other consideration, the time element will soon force the use of mechanical equipment, and the major work must remain undone until methods, demonstration, education and adaptation have made possible the use of equipment and mechanical power on a large scale.

Financial and Administrative Policies.

Taken as a whole the conclusion is inevitable that in these countries highway improvement of a major character must await the institution of adequate and sustained governmental policies.

Just now with so many kinds of improvements of a public character pressing for attention there is an uncertainty as to the most important. There is hesitation in choosing one to the exclusion of others. The enlargement and improvement of harbor and dock facilities is demanding attention and claiming large sums in several countries. The question of railroad extension or highway improvement is being carefully weighed. There does not yet prevail recognition of the necessity of building highways to feed the railways. There still remains a strong sentiment for rail extension to remedy the lack of transportation which is plainly apparent.

Governmental support must depend upon taxation and probably upon taxation of real property. The burden would thus fall on the owners of

great land holdings. These holdings, particularly in Argentine and Brazil, are so extensive in many cases that we do not have and never have had comparable conditions. These relatively few interests exert powerful influences upon all governmental policies so it is evident that they first must be convinced that the paying of heavy taxes for road improvement will be profitable. In the State of Sao Paulo and to a lesser degree in other States of Brazil, and in a few of the provinces of the Argentine, limited road improvement has already proven the potential increase in land values. In the pampas of the Argentine the increase will be far greater than the average or the normal, for the building of the roads can and should follow plans that will with the same operation drain the lands. It is doubtful if richer soils exist than here.

The principle that highway improvement of adequate character is an economic necessity for agricultural districts will ultimately prevail, but the support of the large land holders is not easily secured. If the possibilities of really adequate highway improvement following the progressive plan can be demonstrated, it would be more effective than any other means for securing their support.

The First Pan American Road Conference.

The First Pan American Road Congress was conceived and ordered by the Pan American Union as one of the activities holding great possibilities for the economic advancement of, and for the establishment of closer contacts and good will both within and among the countries of the Union.

The records, the important papers, the conclusions and resolutions will all be published. The important results of the Conference for the immediate future are:

The extensive publicity highway transport and all its phases received throughout all the countries.

The policies and convictions favorable to highway improvement of the chief executives and other high governmental officials, business men and legislative leaders, willingly pronounced and publicly broadcasted.

The personal contacts and friendships established between the representatives of all of the countries.

The setting forth of definite and adequate highway policies in the resolutions of the Congress.

Looking to the future, the most important results are:

The creation of the permanent Road Congress and the recommendation to the several governments that sections be established for gathering, compiling and disseminating technical information relating to highway engineering and administration.

The indorsement by the Congress of the Pan American Confederation for Highway Education as the best agency for carrying on highway educational and publicity campaigns directed toward the formation of a sound public sentiment in the various countries.

The program touched a wide range of subjects and necessarily many of the papers could not be a record of experience within the country or of the personal experience of the authors. There were too extensive compilations from existing literature on the various subjects. Also there was much more material presented than could be properly digested by the several committees within the time allowed. The organization of the detailed work of the Congress was excellent. Many of the arrangements and plans were more complete than is ordinarily the custom with us.

Certainly the criticism that seems most important is unfortunately the same one that may fairly and frequently be urged of conferences where the membership is largely from the engineering profession. There was too much weight given and consequently time devoted to technical detail. The broad principles of highway transport economics, administration and financing were not accorded the relative weight and time consistent with their importance. There was too much confusion of matters of good or recommended engineering practice with the fundamental principles underlying highway transport.

Cooperation and Assistance U. S. may Render.

That the work now started may go forward successfully, we of the United States of America may give freely of our experience in the development and utilization of highways. Nothing can be of greater value. Perhaps the outstanding difference in attitude between the delegates from these United States and the other delegates was the extent and certainty of our faith in highway improvement and its object - highway transportation. This is not born of conceit. It is our good fortune to have the actual results on a big scale as the most reliable standard of measurement possible. Through many channels those results and the actual experience may be made available and the progress made in coordination of highway transport with other forms of transportation and the results of extensive physical and economic research with their principles

developed and new processes or methods disclosed will be of great and welcome value.

The United States offers a field for study to engineers from the other countries as practically all the conditions to be met in Latin America have their counterpart in work under way or accomplished in the United States. The most helpful course to the extent possible will be to give young engineers from Latin America employment on actual road work for the particular purpose of becoming thoroughly familiar with the operation and possibilities of mechanical equipment. The experience of most value is the quick results to be produced through heavy and constant maintenance, and betterments over long mileage and the use of progressive types of new construction.

From Panama down the West Coast of South America, across Chile, over the Andes, across the Argentine, in Uruguay and Brazil, the conviction grew steadily that the United States has an opportunity to render great service to these countries by helping them to obtain better highways. There is no more definitely certain way to advance the cause of Pan Americanism.

But there is also another phase. There is a message for the highway officials of this country of surpassing import. We have gone far in highway improvement. We have expended large sums of money for this work. We believe the cause worthy and we have convincing proof of its merits. Yet this progress has taken years.

The first principles of our modern highway legislation are now more than thirty years old and we have forgotten the actualities then. To be suddenly confronted with the identical conditions that existed in our own States upwards of two decades since produced a shock of realization of the tremendous influence that improved highways have had in, and their qualities indispensable to, the development of this country. We have returned with a faith in the absolute necessity and the enduring utility of adequate highways such as no experience, no knowledge has yet produced. Every member of the Delegation returned with a great desire to drive home to the highway officials of this country a greater conviction, a deeper faith in the work they have done and are doing. Without modern highway transport this country would be so far behind its present development that no description is adequate.

No expression, however vivid, can equal in its intensity of realization, the actual experience of stepping back twenty years into the real conditions that might have been our own country's. Without the highway progress of the intervening years, Panama, Peru and Chile

might well be our own California, Oregon and Washington with their mountains, forests, desert stretches and semi-tropical areas, untraversed but by the primitive cart roads and pack-trails, with only a beginning of the highways needed to open them to the travel and commerce of the world. The pampas of the Argentine might well be Illinois, Iowa, the level agricultural districts of the Mississippi Valley still struggling in the almost impassable mud of twenty years ago. Brazil might easily carry us back to the rolling rich areas of North Carolina and the South where without the highway record of twenty years a journey was not undertaken even between the larger cities. To undertake to stimulate the imagination to an adequate conception of what a tremendous influence highway improvement has exerted in our own country fails without personal opportunities to see the actuality by contrast; only meager assistance is offered by certain definite observations. Lands rich in potential production of agricultural products, minerals, fruits, timber and oils are sorely handicapped by transportation difficulties. Even if the necessary freighting may be done in a fashion by rail or water or slow-moving ox and horse carts or pack-trains, consider the effect of the lack of the quick, available modern highway transport upon the lives of the people, those upon whom are dependent the establishment of permanent homes, of permanent institutions, of schools and of churches. Consider in the United States the effect upon the daily life of those outside of the cities and larger towns who are developing the natural resources and tilling the soils, the very foundation of the prosperity of the United States, if over night their means of transport were returned to the ox cart, the horse-drawn wagon and the pack-train of burros. Contrast the radius of activity between the ox cart and the truck, the pack-train and the automobile.

More than this, imagine attempting highway operations without modern equipment and power machinery. Imagine the rate of progress possible with small mule carts and hand labor for moving earth in large quantities, and small portable crushers for producing crushed stone.

An inevitable result of the lack of highway development is the building of magnificent cities such as Santiago, Buenos Aires, Sao Paulo and Rio de Janeiro at the expense of the country development. Is it to be wondered that a gulf is produced between the wealthy class and the laborer that in degree is so wide as to be almost unknown in our own country. Truly many economic conditions are responsible, but one of the ways out, one of the surest ways to lift the condition of those who toil, is through the influences that are made possible only by adequate highway improvement.

The conclusion is inevitably, irrefutably forced by evidence of many and varied complexions that the endeavors, the efforts of the years that have resulted in fixed progressive governmental policies, State and Federal, for highway improvement have been directed toward the meeting of a great fundamental need and have successfully established sound principles of public progress.

This paper has touched only the rural highways of our sister republics. The pages are too limited to tell of their institutions, the culture, the advance in music, in the arts. It does not tell of the magnificent cities, or of the fine cordiality and hospitality of their people and officials. There is nothing adequate concerning the present productive power and the tremendous untouched natural resources. All these and more are a part of the whole picture. What is here written must be heard for its one purpose - rather two purposes. The first is to stimulate our own imagination and to sustain a more profound faith in this work of highway building. The other is to point one way in which we may be of the greatest service to these other countries. There are many opportunities open to help in the tremendous highway improvement program they must have. Definite plans are now forming in which the highway officials will have their part to play. And the end? This country is in a position to do many things that will be helpful. There is a definite responsibility upon this generation for the establishment of international relations of enduring character. In the next quarter century these will be of greater importance. The solidarity of the Western Hemisphere and the opportunity for each republic to work out its own destiny under favorable and helpful conditions is the end sought. Without highway improvement of magnificent proportions these conditions are impossible. Mutual sympathy and helpfulness is the spirit of Pan Americanism.

It is the finer statesmanship.