

Louisville, Ky.
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Address before Road Builders Association

I wish to revert for a moment to 1916, to the time the Federal Aid law was passed. At that time the states on the East coast and those on the West coast had developed Highway Departments that had been operating for some years and had reached, in most cases, a high degree of efficiency, but between the mountains there was a large area in which only a few states had developed highway departments that were adequately organized or had sufficient funds at their disposal. The Federal Aid law made two requirements; first, that the Federal Aid should be met by the appropriation of at least an equal amount of State funds; and second, that each State should have an adequate highway department. Those requirements of the Federal Aid law brought about a condition within one or two years, that otherwise would not have been reached in five or ten. State legislatures quickly complied with the Federal requirements, and almost over night, it may be said, it was found that every State had provided ample funds to meet the Federal Aid allowance, and a state highway department, through which to cooperate with the Federal government. Then ensued the war interval of 2 years, during which it was impossible to carry forward a great deal of work except on those highways which were essential in the prosecution of the war. In 1917 two and a half million dollars of Federal Aid was paid, but the full effect of the war was not felt until 1918, when the expenditure of Federal Aid funds was only about four hundred thousand. That year we cut our road work to practically no program at all. Then came the Armistice and shortly afterward the Federal Aid Amendment of February, 1919, which placed two hundred million dollars for post roads at the disposal of the Secretary of Agriculture, and nine million dollars for forest road work. Among other things included in that amendment was the removal of certain restrictions which had operated to prevent the submission of many projects which the several states had desired to submit but which did not have the required post road status. The response to this second amendment was immediate and large -- so large that less than a year later, on December 31, 1919 project statements had been approved calling for Federal Aid to the amount of \$110,840,773.50 which is to be spent on more than 2000 projects of an aggregate length of more than 20,000 miles, the total cost of which will be over \$260,000,000. (Insert Chart).

This chart (indicating) shows in graphic manner the situation which now exists. The unfilled, unshaded lines show the amounts which will be available to the States up to July 1, 1920. The total for all the States is \$169,750,000.00. Contrasted with that, the two forms of hatching indicate the amounts of Federal Aid for which project statements have been approved, and agreements executed, respectively. The total Federal Aid called for in the project statements amounts to nearly \$111,000,000; the amount for which actual agreements have been executed is over \$55,000,000. To my mind, these two hatched sections show that the State organizations, which were badly crippled during the war by the loss of a large part of their personnel, have "come back." They have "come back" so rapidly

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that in less than one year they have placed with the Department of Agriculture approved project statements calling for nearly two-thirds of the amount of Federal Aid which was made available for four years; and they have actually completed agreements on more than half of the projects upon which they have submitted statements. In other words, a program of road work, which will call for 55 million dollars of Federal Aid, and the total estimated cost of which is nearly 130 millions, is actually ready for the contractor. That is an accomplishment in which the State organizations may justly take pride.

But the most significant relation which this graph brings out is that which exists between the long unshaded lines of available money, and the solid lines at the left of the columns which show the amounts of Federal money which have been actually paid. None of these lines are very long; some are hardly long enough to be distinguished; all fall woefully short of the lines which represent money available. Their combined lengths would represent, to scale, the sum of \$12,234,390.01, the total amount of Federal Aid money paid up to December 31. I know of nothing which will more strikingly place before you the state of your own business than this diagram. All that difference between the 169 3/4 millions available and the 12 millions paid represents funds still to be transferred to the States, and through them to the contractors and the material producers, from the Federal treasury.

Consider that this chart represents Federal funds only, and that to the 157 millions of Federal funds, yet to be spent, must be added nearly 250 millions of State funds, and there you have a problem in road production -- how to translate these unprecedented funds into constructed roads without undue delay on the one hand, and without invasion of the labor supply of other industry, or forcing skyward the prices of labor and materials on the other.

You have been accenting the development of machinery and the more efficient use of labor. It is supremely important that efforts along these lines be vigorously carried forward. But we must also exercise restraint in throwing work upon the contract market. The larger part of last year's contracts were carried over. I hope that this year, we shall not release so much new work that prices will rise and make, as someone has remarked, a bad contract out of a good contract. In such a policy I hope we may have the cooperation of contractors, and that the States and Federal Government may arrange a program of work that can be absorbed without increasing prices and yielding no increase in production.

We now have a great deal of money available for expenditure. Let us make sure that we spend it in such a way that we shall retain the confidence of the people, so that they will continue to make available the funds which are necessary for the roads which they must have. There is now no disposition on the part of the public at large to curtail the funds available, and there is no disposition to withhold reasonable prices for construction; but after a while the people will begin to question whether they are getting full value for these expenditures; and then this undertaking, which is now started and which we have worked for so long, will be tested in the crucible of public opinion. Let us not by our own acts, by our own selfishness or indifference or lack of judgment and good sense jeopardize the favorable sentiment which now exists, and which, treated

fairly, will supply for our road work all the money we need and more.

Hampered as we are by limitations of material and labor this next year is going to call for unusual efforts to produce many completed miles of the best quality. So much of our material for the high type roads must be moved over the railroads, that it is disquieting to reflect that some railroad officials have held out no hope for better service after the first of August than we had last year. I see no other solution of this difficulty than that which was proposed sometime ago -- to make use of the open top car surplus which usually exists early in the year, before the coal movement starts, to move road material. In advocating this policy, I am embarrassed by the fact that the Federal Aid Law does not allow us to advance estimates on material delivered. This is one of the amendments to the law we shall have to have in order to carry on work more expeditiously under the new condition. We have reached the point -- we are not coming to it in the future -- we have reached the point now when it is not possible, with plenty of money in our pockets, to go into the market, buy a road and have it delivered over night. I am inclined to think that we will have to provide for the building of roads several years in advance. Perhaps let contracts sufficiently extensive to enable contractors to build up organizations and equipment for programs of work ahead of them that will take several years to complete. I see no other way in which we can absorb the money that is available, expend it for the kind of roads for which we should expend it, and be able to cover as many miles as we must needs cover if we are going to render the road service that is demanded by the public of 48 states. We have no longer the condition that if one state has a big program, the surrounding states do not have, and we can import contractors and material and equipment from our neighbor states; we must develop within each state border if possible, the labor, materials and contractors to handle the State's program.

In what I have said so far I have referred to the prerequisites of construction. These are money, materials, transportation, labor, contractors, and adequate engineering organizations. I have very briefly referred to certain relations which should exist between them. Perhaps in doing so I have digressed from the subject assigned to me, if so, it is because of the importance which I attribute to these matters as factors in Federal Aid road production.

In my judgment the greatest question of future road policies we have before us is that of road classification. The principle is not new. It has been fairly worked out in some of the Eastern States, and perhaps in some of the Western States particularly where the lines of travel naturally follow into certain well defined lines, but in a large part of the area lying between the eastern and western mountains classification of roads is very important if we are to proceed with road improvement in an orderly manner.

The majority of our roads, of course, have only a local usefulness, but we can no longer regard all of our roads as of this character. The motor vehicle, by extending the range of practicable travel by highway, some time ago gave to certain of our roads a state-wide significance and to others an inter-state or national value. The methods therefore by which we shall arrive at a proper classification should now be determined by the cooperation of local, State and National authorities. We must not lose sight of the first

function of the highway, which is to develop agricultural resources, but we have to recognize that there are other functions, or other needs for improved roads which have a bearing on the subject, such as interstate business or pleasure travel, and in certain areas the military requirement. I am impressed, therefore, that we must superimpose upon the classification which is now generally recognized, which divides all roads in local, county, and State classes, two new classes which we may call, for the lack of better names, interstate or national, and special roads. The national roads would serve interstate business and pleasure travel, and in many cases the military requirements also. The special class would include roads of distinct military significance which may have little or no commercial value, and certain special recreational roads. In other words we should have about five classes of roads; the national or interstate roads, special roads, and the State, county and local roads.

The State and local authorities, very generally, have outlined their systems of State, county and local roads; some extensive, other limited; some very definite, others rather indefinite. They have a right to be heard as to the roads which they feel are of the greatest importance to the States. The general staff of the army and the chief of Engineers already have taken up with the department commanders the question of the roads which are of importance from the military standpoint, so that we shall probably have soon, for the first time, a definite expression in regard to the military necessities from the military branch of the Government.

In addition to receiving the recommendations of the State and military officials, I believe we should hear also the representatives of the large national organizations or associations interested in the promotion of touring. We would rather have the people of our Atlantic Coast States go West to spend their vacations than to force them to go in the other directions across the water, because of a lack of interstate highways suitable for touring. It is decidedly worth our while to consider this demand, particularly as it happens to coincide very closely with the demand for intercity trucking highways to relieve the congested railroad situation which now exists.

To harmonize the recommendations which will be received from all these sources, and to develop a consistent, well rounded plan, the Bureau of Public Roads, with the expenditure of the Federal Aid funds at its disposal stands ready to offer its resources.

The work has already been begun, but we are embarrassed, at the outset, by the lack of an adequate system of maps covering the entire United States. Our first concern, therefore, has been to have the Geological Survey make up a set of maps for each State for which a basic road map has been developed. These maps will show, at least, the State and county systems, and on these the sections of the national and special systems can be laid down. From the standpoint of Federal Aid, to serve the prime importance of developing the agriculture of the country, it does not seem to me that it makes much difference whether a road be built in one direction from a given town or in another. In either direction it is likely to fit into the agriculture needs for improved highways of the territory through which

it is built, but if, in addition, it connects with another road or with another part of a main system, then we have served other needs as well as the purely agriculture or local need.

The relation which exists between the expenditure of Federal aid funds and road classification, is not a matter of the kind of money. I see no reason to differentiate between the Federal dollar and the local dollar when both are expended upon the roads. But it does seem to me that the Federal dollar spells a certain opportunity for harmonizing and proceeding with our road program in an orderly manner that the local dollar does not afford. The local dollar, in some instances, perhaps, is more embarrassed as to the particular road upon which it shall be spent than the Federal dollar is.

But, in the main, there should be no great difficulty in arriving at an agreement between the state and Federal authorities in regard to the priority to be given to the construction of the various roads. After all, if you select the roads of greatest economic need in the States, the chances are that you will be selecting those, which, in general, should be parts of a national system. That is not altogether true. There are special cases in the Western country where it is not true, but in those cases there is another remedy which should be applied. This brings up a subject which is somewhat aside from my topic, but I am particularly reminded of it because of the presence in Washington, during the past week, of representatives of seven or eight of the large Western States in which there are large holdings of public lands. It is probable that these lands in large part will be owned by the Federal Government indefinitely. To require a State in which, let us say, the title to 90 per cent of its entire area still reposes with the Federal Government, to meet its full apportionment of Federal Aid on a 50-50 basis certainly places on unusual and unwarrantable burden on that State. The States in which a condition of this sort obtains are asking relief. The Louisville convention of the American State Highway Officials Association passed a resolution recommending that relief be granted in proportion to the holdings of the Federal Government in the several States, and I heartily concur in that resolution.

I hope that the Eastern States, which I will say frankly, are helping to build those roads out there, will adopt a big brotherly attitude by agreeing to the extension of this help where help is needed. In return for such an attitude on the part of the Eastern States. I think it is only fair that the additional aid should be devoted to the building of those main lines of road which connect the Eastern routes and Mississippi Valley with the Western coast lines.

There is another situation which is somewhat puzzling to us. Some roads which should be built as connecting links at this time cannot be built immediately because the States in which they are located do not regard them as of the first importance. It seems to me that we must encourage the immediate building of such roads by the payment of more than 50 per cent of the cost from Federal funds.

The Secretary of Agriculture announced a few days ago that he intended to retain and enlarge the Advisory Committee of State Highway Officials for the purpose of correlating a system which should be given precedence in the expenditure of Federal Aid funds. I assume that such a system will include the main roads of all the

States; but frankly, I do not know what percentages of the roads of each State will be included.

Referring very briefly to the type of construction for which Federal Aid funds should be spent, I may say that the types for which allotments have been made up to the end of 1919 and the mileages of each type are as follows:

Earth roads	1790 miles
Sand-clay	721 "
Gravel	1740 "
Macadam	234 "
Macadam, mat-top	185 "
Bituminous Macadam	142 "
Bituminous Concrete	127 "
Concrete	643 "
Brick	120 "
Miscellaneous	49 "

It is true that the earth, sand-clay and gravel types have been built in much larger mileage than the other types. On the other hand, there is more Federal money allotted for one of the permanent types than for all the earth, sand-clay and gravel roads, so that while the mileage of these is large, the allotment of money for them is not large in proportion. It seems to me that we are coming to the time when the types of roads which we shall have to build are either the low-cost types, such as earth, sand-clay and gravel, constructed with surfacing material available locally in those districts where the primary or pioneering road work is yet to be done, or that we must turn to the standard paving types for roads in districts where we are already reconstructing our highways and where the population is such that the traffic is too heavy for the low-cost types, and where that traffic is constantly increasing in weight and numbers. I believe that most of the road builders here will agree that expenditure of money is justified, first, for location; second, for alignment; third, for gradients; fourth, for the purpose of obtaining ample width and ample drainage; and fifth, for the elimination of railroad crossings. I believe that these are fundamentals for which everyone will agree it is perfectly proper that money be expended. On the cheaper types of road, the expenditure is made, largely, for these purposes. Where we have sand-clay or gravel available locally, it is possible, through the use of loading machinery, to surface the roads without additional cost and to obtain much service out of them under light traffic which now exists in many of the districts. Such types may well be used, also, on new heavy traffic main roads during the time the grade is settling. But on those roads where the grades have existed for some time, where traffic has compacted the soil, where it is not a question of regarding, re-alignment, and new locations, on these roads, I believe, we should go to the standard types of paving. I think, perhaps, "standard type of paving" is a safe term to use. (Laughter) But it seems to me that in the production of roads, which is going to be a serious problem this year, Federal Aid funds should be expended, either for the low-cost types in the building of which machinery is used practically altogether, or for the higher-cost roads, for which

machinery, if not already developed, is rapidly being developed. In these two extremes we have the purposes to which we should devote the Federal Aid funds. I feel that we should avoid further experiments with the in-between types, and I believe, that, in the future, we shall come more and more to the use of Federal Aid funds for the standard heavier types of paving.