

Paper by Thos. H. Macdonald,
Chief, U. S. Bureau of
Public Roads.
26th Annual Meeting of the
Mississippi Valley
Conference, Chicago, Ill.
February 2, 1934.

ADDRESS TO THE MISSISSIPPI VALLEY HIGHWAY CONFERENCE

In his work "The Epic of America" the author James Truslow Adams embodies a tribute to the inspired intelligence of Chief Justice Marshall, quoting from Lord Bryce these words:- "the Constitution seemed not so much to rise under his hands to its full stature, as to be gradually unveiled by him till it stood revealed in the harmonious perfection of the form which its framers had designed."

Thus briefly, there is epitomized the dynamic conception of the potential stature of this nation as visioned by a man of the caliber necessary to give concrete expression to the constitutional principles which would make that growth possible. Through our history, those events which have determined the way we have come are associated with a man, or a group of men,

who have held tenaciously to ideals and who, as these major epochs pass and time places its true valuation upon them, stand out as the leaders who have through their intelligence and courage kept us upon a course of national progress.

In thinking of the Mississippi Valley Conference as it has functioned and grown through the years, it is impossible for me to disassociate the Conference and the men who, as individuals, have composed it. It is impossible to think of the progress in highway administration and engineering which has taken place in the Mississippi Valley without attributing this progress largely to the influence of this Conference, which means, in effect, the men who compose it.

Last year when I had hoped to attend your annual meeting, the Secretary of the Conference suggested that I take as a topic "Twenty-five Years of Mississippi Valley Conferences". This year

because of the important and the enlarged program of construction in which the States and the Federal Government are now engaged cooperatively, your Secretary suggested that I might appropriately talk of the administrative relationships of the State highway departments and the Bureau of Public Roads during this immediate period, and something of the probable future.

Because we are going through a period of great stress, it has seemed to me worth while to review some of the developments which have taken place during the life of this Conference which have given a permanent definition to principles of administration and engineering so important that without tenacious adherence to them the progress that has been recorded would have been impossible.

From such a review there must also come a feeling of confidence and faith in the future. This does not necessarily mean a return to conditions as

they were. He is blind, indeed, who does not see that in our national life we have been advancing along the road that we must follow and not merely detouring for a few years to return to the same old national line of travel. However conditions may change over a period of years which are filled with concern and with gravest consequences to the individual, from the standpoint of the national life, principles do not change. As our experience grows and our horizon broadens, we are able to interpret circumstances so as to define more accurately the important principles and to hold to these more closely because of this clearer understanding.

Without desiring to dwell upon the past when our thoughts are keenly centered upon the present and future, I do wish to review certain phases in the developments which are certain to be as important in the future as they have been in the past, and that because of their inevitable nature, point the way

toward the continuance of highway administrative policies with such modifications as circumstances justify.

When the Mississippi Valley Conference had its inception, the States of the Mississippi Valley were organized on a purely local basis. The township and county governments were supreme in the every-day affairs, and the States had not, except in a minor way, assumed any one of the major responsibilities which they are today carrying, measuring them by their relation to the entire citizenship of the commonwealth and by the extent of the laws, finances and organizations necessary to administer these responsibilities.

The State twenty-five years ago was engaged in certain limited educational, eleemosynary and law-making activities. In each of these fields the State was surpassed by the local units of government. During this period there has been a steady assumption on the part of the State of greater responsibilities, of which the building

and maintenance of highways has been the largest. In recent years there has been a rapid acceleration of the pace with which the States, not only in the Mississippi Valley but generally over the nation, have taken over the responsibility for the improvement and administration of the highways and highway traffic.

The conclusion must follow that in the future this trend will not be abruptly terminated or turned aside, and it is most important for this Conference to give serious consideration to the formulation of future State policies that will be consistent with the past, yet will mark progress in service to the public.

In the early days of this Conference highway travel was confined almost wholly to that incidental to the business and social activities of an agricultural people and composed of the farm to market or school or church travel typical of horse-drawn vehicles. We have a quite definite measure of the amount of highway travel in the State of Iowa

obtained through the census of 1900. In that year the total usage of the rural highways was computed from the census returns at 3,674,000 vehicle-miles. The use last year of the roads and streets of the State was undoubtedly in excess of 4 billion vehicle-miles, a very approximate ratio of 1 to 1000.

The means of transportation available, together with the development typical of the area included in the States of this Conference, were reflected in the general equality of all public highways. True, there were certain distinctions between county and township roads, but even so it was hazardous for any official to point out that one road was relatively more important than all others. The first major principle of highway administration became effective and the first advance toward adequate road improvement was accomplished when the States, one by one, selected from the upwards of 100,000 miles of public roads in each, a limited system of highways for priority of improvement.

Through the years this matter of classification of roads in their order of traffic importance has had a remarkable development, and yet there is probably now no question more important facing the membership of this organization than the definition of the line between the roads of general public use and those that are of local or land service use only. Upon the definition and acceptance of this principle and its being carried into actual effect, will hang much of the success or failure of the financing and operations to provide and maintain adequate roads in the future.

The highway organizations of the Mississippi Valley have from the first small beginnings been active in broad fields including education, legislation, construction and maintenance operations and research. There has been throughout the lives of the individual highway organizations a close association with the educational institutions, and these connections have been highly productive of both high ideals of public service and of technical advance from inspired leadership.

It would be difficult to evaluate the high standards and attitude toward the public service that have been a common bond in these organizations through the long-time contacts of such men as Dean Marston, Dean Turneaure, Dean Johnson, W. O. Hotchkiss, now President of the Michigan College of Mining and Technology, President James of the University of Illinois, and Dean Agg. These and many others have, with practically no compensation from the highway funds, given freely of their time and technical ability in order that this work might succeed. This organization has held within its membership practically all the men who have developed and put into effect the technique of highway engineering in this area. Through the cooperative efforts there has been a constant growth of general standards, and yet each State has not sacrificed any of its individuality and has held to the true principle of engineering, that of meeting the particular conditions encountered.

I should place high upon the list of accomplishments of this organization and its

membership, the formulation of highway legislation adapted to the needs of the individual States, which has been wholly developed during the life of this Conference, the principles of which in no small way grew from the contacts and deliberations in these Conferences.

One of the earliest lessons that had to be learned was the fallacy of attempting to transplant either the policies or practices developed elsewhere to this area. This was much more true a quarter of a century ago than it is today. This led directly to the undertaking of extensive research. The early work in Illinois and in Iowa in the adaptation of reinforced concrete to highway bridges and culverts, followed at a later date by the Bates road test in Illinois, which was undertaken with considerable concern on the part of Mr. Bradt, Mr. Sheets and Mr. Older, as to the possible public reaction; and the development of the use of fine aggregates by the Iowa Highway Commission, number among the major developments that have been of outstanding importance,

not only in this area but to the nation as a whole.

The plan of numbered highways first formulated by Mr. A. R. Hirst in Wisconsin now has a nation-wide adoption. The State of Minnesota first broke down the tradition of roads closed to winter traffic by its State-wide snow removal operations. Thus it would be possible to continue to enumerate the effective efforts of individuals and State organizations which were translated largely through the medium of this organization into currently accepted practices throughout this area and in many cases throughout the nation. I have hesitated to mention specific activities and individuals because of the impossibility of having either list complete, or to give full credit where it is due.

Against this background of development which has wholly taken place during the period

that many of those here have been connected with the highway work, there must stand out in very definite relief these important future considerations. The road classification which has taken place must be further translated into terms of planning, in which highways will be given their proper place, critically measured by their ability to serve and coordinated with the other existing types of transportation.

This adequate planning includes financing, traffic regulation, the promotion of safety, and the elimination of traffic hazards. It entails as a fundamental necessity a basic highway transportation survey of each State, with traffic checks periodically to correct and amplify the proposed future highway development, incorporating all of the roads of each State.

We have reached the place where scientific design of the highways based on traffic, soil, available material and other conditions, must supersede the approximate design methods which

have been followed. This necessitates the establishment in every State of a soil laboratory and soil surveys that will repay in ample dividends any expenditures which are necessary.

In the amazing progress that has been made in the building of modern highways throughout this area, the first objective has been accomplished in the improvement of literally thousands of miles of the most important highways. The public is eager and will support the second step which must be undertaken now - adequate roadside improvement. The wealth of the soil and the favorable conditions for growing throughout the Mississippi Valley are such that only proper vision and intelligent policies are necessary for the State highway organizations to transform these highways of utility into highways of beauty over the period of the ensuing decade. It is the first real opportunity the State highway departments have had to take the

public into partnership, and this opportunity must not be neglected.

The privilege of using highways should be enjoyed without a disregard of responsibility. There is a growing consideration for others among highway users but it is useless to expect a wholly sane use of the highway facilities provided without efficient highway patrolling organizations and reasonable regulatory laws. Some of the States of the Mississippi Valley have established control of highway usage but others have lagged. Traffic laws are of no consequence unless enforced through an organization established solely for this purpose, and it is difficult to understand or to justify why this necessary development has lagged in this area.