

Remarks by Thos. H. MacDonald, Chief,
Bureau of Public Roads, at Luncheon of
the American Automobile Association,
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Mr. MacDonald: Mr. Chairman, Mr. President, members of the A. A. A., fellow guests, it is a pleasure and a compliment to be invited to meet with you today, and to give briefly some accounting of the stewardship that has reposed in the Bureau of Public Roads, and in the State Highway Departments of the country, particularly during this period of which your Chairman has spoken, - the depression period.

When I was asked to come it was with the understanding - at least I make that stipulation now - that I would not prepare a formal address, but would review informally and briefly some of the things that are of immediate importance, and some of the impressions which I have received from rather extensive tours through Europe this year, from which I have returned only recently.

If we can look to the roads of the future with any degree of certainty, it must be on the bases of the present road status and of the tendencies that we see developing. Future events cast their shadows before them. There has been always some development, always some beginning, before any particularly large or major trend or project takes form and becomes a certainty.

By getting far enough from the detail in this country, and by seeing what is being done in other countries to meet the problems of highway traffic as they are developing, and of providing adequate

highway facilities, it is possible to get a somewhat accurate forecast of the probable developments to which we may look forward, and perhaps those we ought to turn our attention toward, in our own country.

If I may review some points without attempting in any way to cover them thoroughly, the impression that we get of England is the growing impossibility of traffic conditions, and at the moment the little that is being done to meet them adequately.

I do not wish to be harsh in any criticism of that country. As you know, England has been determinedly attacking the problem of balancing the budget, and for that purpose has followed what is an alarming tendency also in this country, the diversion of the income from the road users to other channels, and away from the investment of that income in adequate highways. As a particular point, some eight years ago, I went over the great West Highway which was undertaken as one of the projects to relieve traffic conditions out of London. At that time the road was just being completed. There were open fields on either side, practically nothing in the way of buildings, and it was expected that road would prove a great boon, a great relief, to traffic. Today, no more than eight years later, the roadsides are built up closely and resemble the industrial streets of Detroit or any of our other large industrial cities. Traffic is able to move with difficulty.

That illustrates to me the fallacy of by-pass policies we are pursuing here. We can depend upon the utility with decreasing efficiency of a by-pass road for perhaps five years. Then we will have

more traffic on the by-pass, and more congestion of new industrial establishments and other occupations of the land than upon the main streets that we are designing to by-pass completely. So we must take a leaf from that book of experience and, if we are to have efficient by-passes, build them much different than England built hers, or than we are building ours. As soon as we provide more adequate highway facilities contiguous to a large population, we assure the development of the land along the highway, and we must perfect the design of a through road by adding service roads alongside that give access to the through road only at intervals. I believe this is sound.

France is attacking the problem of congested traffic in and out of Paris as a major public undertaking. The general plan for accomplishing traffic relief consists of a circular belt line around the city and radial roads exclusively for motor traffic leading from the city well into the suburban districts. Fortunately in the old days the cities of Europe were protected by fortifications extending fully around the city. This was true of Paris, and some parts of the old work still remain, but the ground occupied by the old walls and gates is public property. Thus, today, the engineers have the great asset of the right of way on which to build an encircling highway. This circular highway will intersect all of the radial streets that lead out of Paris as a center. Provision is made for the continuous flow of traffic at the principal intersections by carrying the circular or belt line roadway under the radial streets and roads.

The traffic on the radial roads which is bound for destinations beyond the local suburban districts will be picked up on wholly new highways built exclusively for motor traffic and designed to permit a continuous flow.

For example, those of you who are familiar with the St. Cloud district, will be interested to know that a new traffic artery is under construction, which will be carried in a tunnel under St. Cloud into the country beyond. This will preserve the ancient city of St. Cloud, its park and buildings. Beyond the tunnel to the extent possible the new road will be carried through publicly owned lands that will protect it against encroachment. Cross traffic will be eliminated and connection will be made with the present national route well outside the influence of local traffic around the city. An important part of the major highway plan is the rebuilding of a number of the bridges over the Seine. These bridges when built represented the highest development in the art. For a hundred years and more they have not only served the traffic but have contributed to the architectural adornment of the city. So we find the French engineers, while rebuilding and enlarging the bridges, taking great care to preserve the architectural harmony, and even replacing the sculptured masonry of one of the bridges built under Napoleon to preserve intact the appearance of the original structure.

It will be observed that the principles relied upon by the French engineers to better serve the traffic contemplate first, enlarged facilities to provide for the increased number of units,

and second, designs to permit the continuous flow of these units by making available through highways without cross traffic at grade. Both of these principles can well be given a greatly enlarged usage in this country.

The conception of transcontinental touring in Europe has only now caught up to the pioneers in this country particularly in the automobile industry and the automobile associations who promoted the first idea of continuous transcontinental highway routes. There has been projected an international route leading from London to Istanbul which approximates in distance an east and west transcontinental route across this country. In Europe the dimensions of the countries are such that a road of the same length that only passes from coast to coast in our own country, crosses seven of the countries of Europe and reaches to the far east. This route is in excellent condition for the tourist to use as far as Belgrade, Yugo Slavia. This reaches within perhaps seven or eight hundred miles of Istanbul but the reports as to the condition of this mileage of road are not encouraging.

Very encouraging advance in reconditioning the old roads and building new ones for motor traffic is the general order in all of the countries. The new roads under construction in Hungary are particularly good.

Germany stands out among all the countries of Europe in the magnificent conception of a national system of major highways. This development contemplates a system of approximately 4500 miles,

of which upwards of 1000 miles have been actually constructed. Roughly, the system contemplates three routes, north and south, and the same number east and west across the nation. This description is only approximate since the routes composing the system are designed to connect the population centers and carry traffic continuously between the borders of the nation. The construction consists essentially of two lines of roadway, each approximately 30 feet in width and entirely separated from each other by a center grass strip. These roads are known as the "Reichsautobahnen" or National Auto Roads. No cross traffic of any character is permitted. The ordinary roads are generally carried over the "Autobahn" and separations are effected at points of intersection with the railroads as best fit the design standards. No provision is made for foot traffic and no bicycle or pedestrian traffic is permitted upon these auto highways. They are designed for high speed and exclusively for the use of the motor vehicle. Here again the same principles are used in the design conceived by Germany for this system of ultra-modern through highways of providing ample width of roadways with opposing traffic separated by an unpaved strip and no cross traffic at grade to interfere with the continuous flow. The highways which have been completed are wonderful examples of the best modern road building. The road from Munich to Salzburg in Austria is one of the most delightful drives of the world. It parallels the foothills of the Bavarian Alps and runs through a farming country that has been so well tended that it presents the appearance of a finished landscape as far as the eye can see on either side.

In some respects, to the tourist these highways may not present the most interesting and intimate aspects. In by-passing the cities and staying out of the towns and villages, something is lost. Those who wish to see and understand the people of the country, lose this opportunity. On the other hand, if the ordinary traffic of commerce and the intercity movement are carried on these highways, this will relieve the other roads of much of the traffic burden and make them more comfortable for touring. In general, the existing roads, particularly in the vicinity of the larger cities, are not comfortable for the tourist because of the large amount of mixed traffic including everything from large motor truck trains down to ox-carts, bicyclists and pedestrians.

Modern design tendencies in this country include insistence upon longer sight distances, easier curves, the flattening of all slopes to safer angles, protective devices, planting and other landscaping of the roadsides. This will provide safer and more beautiful highways. There is also insistence on the separation of multiple traffic lanes by a neutral strip between the opposing lines of traffic and there must be on these highways a liberal use of grade separations for cross traffic. The efficiency and safety of our main highways will be immeasurably increased by a more liberal use of the divided roadways and the separated inter-sections. Unfortunately, in this country, because of the wide distribution of large numbers of motor vehicles and their very general utilization, the pressure has constantly been for more miles of usable road, rather than for a very limited mileage of super-service highways.

Since, however, the employment need is with us and will remain an important factor in our economic life, we can from two justified angles begin the building of a reasonable mileage of roads similar to those undertaken in Germany. The ability of highway work to provide employment is indicated by the fact that during the summer peak approximately 400,000 men are employed. This drops to a winter normal of around one-half that number. This is the direct employment of men on the work which generates additional large industrial employment.

Beginning with the emergency funds of 1934-1935, and the Federal-aid funds up to the present time in 1936, the total road program completed, under construction, or ready to be undertaken, is 48,000 miles. That is, in little more than two years the Bureau of Public Roads and the State highway departments have engaged in the improvement of roads equalling in mileage the distance twice around the world. In the development of these roads constant efforts have been made to keep pace with the demand for greater safety and for greater utility. The grade crossing elimination program is one of the important undertakings of the two-year period. In this program there are 2400 grade crossings being eliminated and about 700 out-of-date crossing structures being rebuilt. The installation of standard warning signals is being undertaken at more than 600 additional crossings.

For the highway improvements the types of construction have varied from the first stage of grading and draining to the standard pavements of the higher cost types. There have been completed since

1934 more than 16,000 miles of bituminous surfaces and standard pavements and 7000 miles more are graded and ready for surfacing. In addition, a considerable mileage of secondary roads has been improved with the emergency funds which have carried Federal participation into the improvement of the secondary farm roads in an effective manner. Also, the Federal-aid routes have been extended into the cities and some of the most important improvements undertaken have been on the arterial approaches into the cities. Thus the Federal support for road improvement has gone far beyond the Federal-aid system as first conceived and is now aiding in the building of farm or tributary roads, on the one hand, and city avenues, on the other.

The extension of Federal participation to all classes of roads has indicated the necessity for adequate highway planning against the future. The program of such planning surveys is now going forward in 38 States in cooperation between the Federal Bureau of Public Roads and the State highway departments and supported in whole or in part with Federal funds. This general survey is collecting the data on which to build a long-time highway program. The benefits from the survey will not alone be reflected in the long-time program. Particular account is being taken of conditions that are manifestly unsafe for the purpose of including these in an immediate improvement program. In all of our thinking of highway design to afford greater safety to the motorist, we are placing the greatest emphasis on long sight distances. In this survey particular emphasis is being placed

upon this feature with the thought that this is one of the most fertile fields for improving the safety of existing highways. We are developing a policy of parkways and of highways completely separated from cross traffic.

The problem in this country is considerably different from that existing in most other countries. The preponderant type of traffic on our highways is privately owned and operated automobiles. The week-end and holiday traffic is disastrous in number of accidents and generates the greatest dissatisfaction in the use of the motor car on the highways, particularly around our metropolitan centers. An adequate solution to this problem can be found only by supplying an independent system of circulation roads, so designed that they will connect in the future to make continuous routes between these metropolitan areas.

In my judgment we must give greater attention to the social possibilities inherent in the motor car and the really adequate highway. This will mean that greater consideration must be given the family now living in the metropolitan areas which desires escape into the country on week-ends and holidays. A system of roads designed for this purpose would have a second great possibility of exploding the cities. If highways giving quick inter-communication between the industrial establishments of the cities and the suburban and farming areas immediately adjoining them are provided, then these areas will attract for the establishment of a home those who find part or full time employment in the cities.

Suggestions have been made for high speed highways to carry commercial traffic. I can not see that as the problem before us in this country. Rather, the problem appears to be a more important social one, that is, taking care of the motorist who owns and operates a private automobile. If this type of traffic were provided for largely by highways built for this use alone, it would not be difficult to bring our present highways to the point of serving the ordinary commercial travel, together with the use necessarily made of the highways by those living immediately adjoining them.

In planning the highway policies of the future, the American Automobile Association has a very direct interest. Before the Federal and State highway officials can accomplish anything in road building, they must have the authority of the public as expressed through their legislative bodies. One of the greatest difficulties in securing a wholly adequate and coordinated highway improvement program is the diversity of jurisdictions encountered in traveling the roads for even relatively short distances. Also, we are relying largely upon the income from the license fees and gas taxes used by road users for road improvement. While it is true there have been large emergency Federal appropriations used for road improvements, in the long run it is the normal income that will determine the system of roads that we have. We are confronted with the very serious problem of diversion of road funds to other purposes. Apparently in some quarters the fact is not accepted that to divert

road income to other purposes, only creates a deficit that will have to be made up sooner or later and, in the meantime, the public loses the use of necessary facilities. Equally important with diversion to other purposes is the distribution of too large amounts of the road income to too many jurisdictions.