

THREE SURFACES FOR AUTO ROADS

Asphalt, Brick and Concrete Thus Far Only Ones Worth Consideration

“A concrete slab road, about eight inches thick and of a uniform depth across the road, perhaps with an increased thickness integral supporting curb-block on the edges in some locations, is the type of road that should be built in this country,” said William E. Williams, in discussing “Highway Road Construction” at the annual meeting of the Society of Automotive Engineers.

“Only three road surfaces have given satisfaction for automobile traffic,” declared Mr. Williams, “asphalt, brick and concrete slabs. Thus far the concrete slab surface is the only one worthy of consideration for such traffic.”

“Many people think that that the roadbed should be elastic and that the asphalt and brick surfaces furnish elastic conditions. Experience has proved that an asphalt surface will not stand up under heavy truck traffic. The brick surface comes nearer to the desirability of the concrete slab surface than asphalt.”

Mr. Williams pointed out that the idea that an asphalt surface is necessary for the riding qualities and preservation of the vehicle, is an old one. It has been discarded out in railroad service and in fact, with the result that the elasticity in a roadbed is found to have been a mistaken idea. The best roadbed is an absolutely solid one with as straight a surface as can be obtained.

“The road surface,” declared Mr. Williams, “should be as nearly rigid as it is possible to make it. It is a mistake to make a road surface which is expected to bend under the movement of traffic, even in the least possible amount that is preventable, for in this way the road is destroyed.”

He asserted that the asphalt surface road or the brick surface road must have a concrete base. The asphalt and brick surfaces are the concrete base but slightly in sustaining beam loads or in providing a wider distribution of the road over the surface soil or sub-base of the road, whereas if the equivalent of the thickness of the asphalt and the brick, and particularly the cost of laying these materials, is expended in producing an extra thickness of the concrete slab, a stronger load sustaining surface will be obtained than is possible to get at the same cost with

any supplementary facing such as asphalt or brick.

According to Mr. Williams, it costs more to lay the asphalt or brick for a given depth than it does for the same depth of concrete. Therefore, brick and asphalt have no chance of being competitors for service on a motor-truck highway, as the concentrated loads placed upon the wheels when the heaviest trucks are considered run as high as from four to eight tons under a single wheel.

The crushing bearing value of the concrete at 3000 pounds per square inch is able to carry the load, but the bearing value for many subsoils is not.

Mr. Williams said that many remedies have been offered for correcting road failures. One of them is that on clay or alluvial soil subbases there should be placed a cushion three or four inches thick of porous material, such as sand or cinders, that will permit the subbase to drain out and remain in a more uniform condition under varying weather conditions. In some localities the sand subbase seems to indicate that this is the correct thing to do.

“In my opinion the automobile vehicle world will profit by laws that will prohibit anything about a five-ton load and force trailers to take care of the heavyweight loads.” He added that reinforcing with steel in a concrete road slab is of doubtful value except in special cases. He says that the maximum tire load of the maximum tire in the factor to be considered, and not the weight per inch of tire. The concrete surface will withstand more per inch than any rubber tire. “It has been the strength of the concrete slab that counts; in other words, the amount of load per square foot of area on the subbase which the slab must distribute, is what we have to look after.”

Other important speakers at the highway session were H. W. Alden, “The Automotive Engineers’ Relation to Highways”; H. B. Reed, “Variable Factors That Influence Highway Design”; and A. T. Goldbeck, “Governmental Highway Research.”

TO ASK CONGRESS HELP FOR ROADS

Federal Aid Over Period of Five Years Probably Will Be Solicited

The next Congress will be urged, according to the program formulated by the American Road Builders’ Association for its nation-wide Good Roads Congress and National Good Roads Show to be held in Chicago, February 9 to 12, to extend for five years the federal road-building program which by law terminates with the close of the government’s present fiscal year. Congress will be urged to provide additional funds for expenditure under the terms of existing legislation and the newly formed program of the congressional leaders at the rate of at least \$100,000,000 for each of the five years beginning July 1, 1921. In the advocacy of this procedure the American Road Builders’ Association will be in hearty accord with the attitude expressed by Secretary of Agriculture Meredith in his recent annual report.

The American Road Builders’ Association, which includes in its membership the highway officials of the national government, and those of the states, counties, cities and townships in the United States and Canada, together with highway engineers and contractors and the manufacturers of road-building machinery, road materials and highway transportation equipment, is also preparing to ask President-elect Harding to recommend in his inaugural address and in his first message to Congress a broad program of federal aid in highway construction.

The enormous appropriations for highway work already made by states and municipalities, appropriations that total more than one billion dollars according to the most reliable reports covering bond issues and direct levies for road building and road maintenance, prove, it is believed, an unprecedented volume of road-building for 1921. The sum of \$271,000,000 voted in bond issues or appropriated by eight states recently, added to bond issues passed by

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eight other states since 1918, make \$543,800,000 already available for road work in sixteen states.

Funds still available through federal aid are placed at \$160,000,000 by officials of the bureau of public roads. In addition, funds obtained from direct levies and other sources of state revenue and county issues are estimated to amount to \$296,200,000. The Chicago meeting will bring together from all parts of the country the men who will supervise the expenditures of these vast appropriations for a thorough discussion of their problems and an accurate estimate as to the future.

The convention promises to be one of the greatest in point of attendance and in results ever held in the history of the good roads’ movement. The govern-

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