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# The Bureau of Public Roads and the Petroleum Industry

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As the producer of the fuel with which is generated the power that drives highway vehicles and of the oils and asphaltic cements that bind and render waterproof and dustless thousands of miles of highway surfaces, the petroleum industry has long had a direct and special interest in much of the work of the Bureau of Public Roads.

In the early days of motoring when the greatest problem of the road builder was the laying of the clouds of dust that hung like a pall over the old macadam roads, the Bureau's experiments with petroleum oils laid the groundwork for the development of the use of oil asphalt, a use which has since taken a considerable part of the heavier products of the petroleum industry.

Chemists of the Bureau took a leading part in the development of the various grades of asphaltic oils and residues needed for various highway construction purposes, and independently or in cooperation with other agencies proposed and standardized the tests by which the characteristics of such materials are determined.

The Bureau's bulletins and standard specifications were for many years the accepted guides in the manufacture and purchase

of asphaltic materials; and the head of its laboratory at that time was the author of what is still one of the standard engineering texts on bituminous materials.

By the construction of experimental road surfaces, such as those laid twenty or more years ago on Connecticut Avenue near the Maryland-District of Columbia Line, the Bureau contributed early to the building up of a body of definite knowledge with respect to the service value of road surfaces constructed in various ways with different grades of asphaltic materials. By these and similar experiments and by the gradual accumulation of experience in the construction of object-lesson roads in all parts of the country the Bureau was an important participant in the development of such standard types of road surfacing as penetration macadam and bituminous concrete.

These types, particularly the latter, were designed for service on the more heavily traveled roads of fairly limited mileage, which were naturally the first concern of road building agencies. The increase in motor vehicle registration has in recent years thrown upon a very large mileage of secondary and local roads traffic of a density comparable with that which years ago suggested the use of oils on the main roads; and again the petroleum oils are among the most promising of available materials for the improvement of the literally hundreds of thousands of miles of such roads.

The large mileage involved necessitates the development of new processes and materials to reduce as much as possible the costs of construction and maintenance and to facilitate the greatest possible use of machinery to shorten the time required for construction.

In cooperation with the Asphalt Institute, representing a large section of the asphalt industry, and highway officials of several States, the Bureau has recently engaged in studies in several parts of the country with the object of developing these new methods and materials.

As is generally the case in the early period of development of any material there has been undue multiplication of grades many of which differ in no important degree, and the Bureau has taken the lead in cooperation with the Asphalt Institute in a series of regional conferences with highway officials of all the States, the object of which is to bring about a simplification of the State specifications for light asphaltic oils, a reduction in the number of tests specified, and ultimately a reduction in the number of grades of material. These conferences are now in progress and there is encouraging prospect of a satisfactory outcome, the effect of which it is hoped will be to render more efficient the production of suitable grades of material with consequent decrease in road construction cost.

With the other and larger branch of the petroleum industry - that which is concerned with the production of gasoline - the Bureau's principal direct contact came about through the statistical service which it renders by compiling the annual receipts of gasoline taxes and the consumption of gasoline by motor vehicles. The Bureau undertook this service shortly after the passage of the first gasoline tax laws, its interest prompted by the fact that the tax is an important, and now the most important source of highway revenue.

To this branch of the industry, however, it renders a valuable service by its work in cooperation with the State highway departments for the improvement of the Federal-aid roads.