

IDEAL TYPE OF ROAD PAVEMENT

A Combination Highway to Be Tried in New Jersey.

GOOD UNDER ALL CONDITIONS

R. A. Mackie, State Highway Engineer, Has Novel Plan For Making Serviceable Roads With Strips of Different Materials—Would Be Cheap.

The question is being asked on every side, "What is the best pavement for our country roads, especially those that are subjected to a mixed motor and horse drawn traffic?"

The answer to the question embraces several factors. These may be summarized under three general heads—viz. utility, durability and cost. The most useful pavement is best described by the phrase coined at the close of the eighteenth century by the framers of the original turnpike acts—that is, it must be smooth, hard and convenient for travel at all seasons of the year. A pavement that meets these requirements leaves nothing to be desired.

In New Jersey we have an abundance of good road material in certain sections, while in others it is lacking. The gravel in some portions of south Jersey makes an excellent road for nine months of the year if the travel is not too heavy. The trap and dolomite of the central and northern sections make a good road at all seasons, but they have two bad qualities—one that they become dusty in dry weather, the other that they break up and rut under heavy travel. To combat these two evils various bitumens have been used, and the results, when the proper materials were employed, have been satisfactory, except that the surface is slippery in cold weather.

To overcome this objection it is proposed to build our trunk lines as follows: Pavé the twelve feet in the center of the road with a mixture of stone and asphalt and on each side of this lay a plain macadam pavement four feet wide by four inches deep. In slip



MACADAM ROAD IN NEW JERSEY.

weather on a road of this sort the horses can travel on the stones on each side, allowing one wheel of the wagon to run on the bituminous pavement if the driver so desires and leaving sufficient room for an automobile to run on the center. By following this method three ends would be attained—first, the horses would be able to travel over the road without slipping; second, a more satisfactory and wider pavement would be had for less money, and third, there would be less obstruction to traffic. A bituminous pavement sixteen feet wide would cost more per mile than a combination pavement twenty feet wide built as above suggested, and as an added advantage of the latter the traffic would be distributed over the entire road.

A pavement laid according to this plan would also be free from the disagreeable and unsightly drop at the edge that is so often seen on the sides of a bituminous pavement, particularly if the soil of which the shoulders is formed is of a light or sandy nature. This sharp drop at the edge of the pavement is also very injurious to it owing to the shearing off of the edges of the pavement by the wheels of the vehicles when they are driven off or on. This shearing or breaking of the edge is most destructive to the life of the pavement. The opening so formed admits the water into the body of the pavement, and as a consequence disintegration begins. The durability of the pavement is thus greatly lessened, as the breaking of the bond not only causes the shattering of the pavement, but permits a movement of the stone particles composing it. This attrition greatly increases the wear, thereby augmenting the cost of maintenance, with the result that the annual expenditure is much increased.

The ultimate cost of a combination type of pavement constructed as above described will be much less than that of the other kind, so that whether measured on the basis of first or main tenance cost the pavement above described will be by far the cheapest.

Cost of Bad Roads.

You can add all your taxes together and multiply the sum by three and it will hardly equal the tax you pay by using bad roads.

GOOD ROAD DONT'S.

- Don't leave grass and weeds on the shoulders and in the gutters.
- Don't dig the mud out of the gutters and throw it upon the road.
- Don't leave dirt in piles on the road.
- Don't throw grass and weeds upon the road surface.
- Don't dump stone or gravel on an old road without first preparing the surface to receive it, because you thereby cause willful waste and waste want.
- Don't place new material on the road without leveling and shaping it so that the grade and cross section of the road will be unchanged.
- Don't expect travel to spread and roll the new material. One-half of the money spent is wasted by this method.
- Don't put new material on an old hard road surface before first picking or loosening the old covering. It is good for the quarryman and gravel owner, but bad for the taxpayer and road user.
- Don't try to do work without proper tools.

FARMERS ARE VITALLY INTERESTED IN GOOD ROADS

They Are the Ones Who Suffer Most From Bad Highways.

It is the farmer who is most directly and vitally interested in the improvement of the country roads. Whatever may be the ultimate destination of farm products their first movement is over the country roads. Every improvement in a highway, be it a waterway, a railway or a wagon road, means an enlargement of the opportunities of all those engaged in any kind of business contiguous to it.

Operating a farm is in the highest sense conducting a business in which a high grade of intelligence is required to insure success. The farmer is our greatest producer. His products are his crops of meat and foodstuffs. Unlike the manufacturer, he cannot load his products in cars at the scene of their production and be relieved of the responsibilities of transportation.

To him falls the duty of hauling his entire available production to the nearest and best market—perhaps a mile or probably twenty miles. With bad roads his hauling must be done when weather conditions are most favorable, thus keeping him and his team away from farm work.

This hauling must be counted as part of his cost of production. It requires labor, time, wear and tear of teams, all of which are elements in reducing his profits, and the advantage or greatest amount of profit, other things being equal, goes to him who, living along a good highway, is able to more cheaply transport his products. Of two producers one of whom lives ten miles from a market on a bad road and the other fifteen miles on a good road the first, although closer to the market, will have no advantage over the other living farther away.

CARPET FOR ROADS.

An Improved Elastic and Dustless Cinder is a Necessity.

A lecture was recently delivered by a member of the road board before the Royal Institution of London on "The Road, Past, Present and Future." The lecturer said the problem was to find the best mode by which a road should be constructed so that its surface would not be broken by traffic, so that the transit might be easier for both passengers and goods, a road which would form neither puddle holes nor exude mud from vehicles and create no dust when the weather was dry.

One thing was universally recognized—that the road of the future should be a truly bound road in which whatever kind of stone was used the stone should be held together so that it would form a crust. The lecturer suggested that what he called a carpet or an elastic skin should be adopted as the covering.

The carpet, he thought, should be made of bituminous material mixed with sand and placed on the roads in various thicknesses according to the nature of the traffic. It should go on in liquid form, solidifying quickly, but always remaining resilient and compressible and so integrating with the crust of the road that there could be no shifting of the surface below.

The advantage of such a carpet, it was said, would be to permanently protect the crust, and just as a carpet on the floor softens the step so would this carpet for the roads silence the noise and reduce the shock of rolling vehicles. It was admitted that the original cost of a road so laid would be more than that of a mud bound road, but spreading the cost over a series of years it would probably not be so great, since the crust of the road it self would not have to be renewed.

Mud and the Direct Market.

The city of Aurora, Ill., opened a city market, designed to bring farmers and consumers together for direct selling. About 1,000 housewives flocked to the spot on the opening day, to be met by one solitary farmer. He had driven eight miles with two chickens, twelve dozen eggs and a barrel of apples. The roads for miles around Aurora had been thick with mud, and the market had not been sufficiently advertised to persuade the farmers that a trip over such roads would be justified. The accessibility of the market is one of several things needed before the grower can spend time to sell his own product in small lots.

BUILDING POWER DAM

S. M. Steele of Portland Improving Property on Spring River.

Work is under way on a power dam across Spring River on the property of S. M. Steele of Portland, who bought 169 acres in the summer of 1911 of Joe Smith. Power for pumping water for irrigation purposes will be developed by the dam.

The contractor is George S. Young, who has a crew of seven men in charge of Foreman Cronin at work on the dam. It is expected that the work will be completed, as far as is to be carried at present, next week. The dam will be nine feet high and 246 feet long. There will be 100 feet of timber work, the rest being earth.

Mr. Steele came up Friday night from Portland and Saturday, with Mr. Young, inspected the work. He returned home Sunday.

SPLENDID COUNTRY HOME

S. A. Dutt Building Bungalow on Ranch Northeast of Town.

A splendid country home is being built by S. A. Dutt on his irrigated ranch six miles northeast of town on the Prineville road.

It is of the bungalow type, one story, with six rooms. The dimensions are 24x36 feet. A striking feature about it will be its modern conveniences. With a cistern on a high line canal, Mr. Dutt will be able to pipe water into his home, making it as comfortable as a city residence.

Mr. Dutt has 80 acres under the Central Oregon canal, only 4 acres of which cannot be irrigated. He raises hay mostly, having cut a large amount of timothy and clover this year. Mr. Dutt cuts the crop only once, believing that it is more profitable to graze the second growth than to harvest it. His cattle have good pasture all the winter, even when there is snow on the ground. he says.

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U. C. COE, Non-Political Candidate For County Judge of Crook County



Below is the text of a leaflet that has been circulated throughout the county by supporters and friends of Dr. Coe:

DR. U. C. COE is the independent, non-political candidate for the office of County Judge. He is not an office seeker, but is out for office at the earnest solicitation of people all over the county—business men, farmers and others. He has never been in politics, but is just what the term "non-political candidate" implies—a business man pledging a business administration of county affairs.

DR. COE has been a resident of Crook County for eight years. As a practicing physician, his work has taken him into every section of the county, and made him familiar with the needs of all the county. He has established an enviable reputation as a successful business man, and is a heavy property owner and taxpayer. He is, therefore, especially interested in an economical and competent business administration.

"I believe the affairs of Crook County should be conducted just as systematically and carefully as the affairs of any big business organization. If elected, I pledge my fullest influence toward an administration that will be businesslike in every detail, and that every section of the county shall get a square deal," says Dr. Coe.

His own record as a business man marks him as the best qualified candidate that has appeared in a county race for many a year, and shows that he has the ability to accomplish what he undertakes.

DR. COE is a firm believer in the necessity of good roads. His profession, his intimacy with farmers and agricultural matters and his wide acquaintance with county conditions, have emphasized that belief. He stands for the construction of good roads. He goes on record as stating: "Pleasure highways are valuable, but good roads from the farm to the market are better." He realizes that there is no profit in raising big crops if the cost of transporting them to market is prohibitive. It is his earnest desire that county expendi-

tures upon good roads be so arranged that every district has expended within it, in road construction, at least as much money as that district contributes to the county road fund—in other words, a square deal for the taxpayer, the farmer and the merchant.

DR. COE is an enthusiastic supporter of the agricultural demonstration and educational work that is coming to hold such an important place in Central Oregon, and is doing so much toward the permanent development of the country. He believes that the county not only should contribute generously to the support of the demonstration and extension work, but that it also should interest itself in initiating this work in all its sections.

DR. COE'S progressive attitude toward agricultural and other development work is shown by his close affiliation with the Central Oregon Development League and other development organizations. During the last half dozen years he has held a foremost place in this great work. An admirable instance of the position he occupies is the example set by the banking institution with which he is associated; last year it imported hogs and cows, and distributed them at cost among the farmers of the county, when necessary carrying the farmers until they were financially able to care for themselves. The example set has now been followed by other institutions. It has been commented on, and heartily endorsed, by papers and organizations all over the Northwest.

DR. COE believes that the business of the county should be conducted with full publicity, so that taxpayers may have the opportunity of knowing what is being done with county funds, to the fullest extent practicable. In this connection, if elected, he hopes to have a comprehensive statement of county financial affairs published in several county papers at least semi-annually. Also, he thinks that before decision on important matters be made by the County Court, the press of the county should be given an opportunity to place such matters before the consideration of the taxpayers, so that, if desired, those opposed to the proposed action may be able to place their arguments before the court.