

THE PERMANENT SURFACING OF HIGHWAYS

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Service wears. A strong man spends his energy in useful labor. A great leader passes on; and we say, "He wore himself out in service." We mean it as the warmest praise; the highest eulogy.

A highway is a thing of service. It can not serve unless it is used; and it can not be used without wearing out. If I were shown a pavement of any considerable age that showed no signs of wear, I should regard the investment in that pavement as a useless waste of capital.

So whenever I hear mention of the alliterative delusion of "permanent pavements," instinctively I close the portcullis of my mind and prepare to resist a siege of propaganda.

Yet there is a sense in which we may properly regard the highway surface as permanent. Indeed, it must be permanent in this sense else the service it was created to render will be seriously impaired. But it can only be made so by constant rehabilitation; by continual repair of minor defects; by regular replacement of worn parts;

by periodic renewal of the entire surface; and by the substitution of stronger and more durable materials as the need arises; in a word, by constant maintenance and reconstruction.

In every European land there are sublime cathedrals that the hand of time seems never to touch except to render them more beautiful, more majestic. We have seen in recent years a demonstration of the way in which this appearance has been maintained through the ages. We have seen their beauty marred by war, their very foundation shaken; and already, before ten years have elapsed, we have seen them restored, their beauty enhanced, their sublimity exalted; the turmoil of the greatest war in history but another storm withstood.

In the history of these sacred structures of Europe, I think we may find a perfect example of that kind of permanence which we may establish as the ideal of all our work of highway improvement in this country. Consult the archives of the church and you find that not one of these great religious structures was built all at one time. Without exception, their construction has been the work of successive centuries. Each generation has contributed to

the building of the structures as they now stand; and in every age the repair of the ravages of time has been a labor of love and spiritual devotion that has had first claim upon the means and energies of a devout people.

It is so, and only so that our highways may be made permanent. Exactly such a process of growth and constant care is expressed by the policy of stage construction, which I am convinced is the only sound basis for economic highway improvement, and which I, therefore, commend to the people and highway authorities of Nebraska.

Highway improvement is essentially a continuing process. No more than the cathedral builders do we build in one operation a complete and lastingly satisfactory structure. We build today to meet the needs of today and perhaps tomorrow, and we preserve what we have built as well as may be against the destructive forces of nature and traffic. But, if we think that we shall ever come to the end of our road building we have learned very little from two thousand years of road building history; more, we must be utterly insensible to the impressive lesson of the last thirty years' experience in our own country.

In these thirty years the traffic on our main roads has increased from a few vehicles a day to many thousands daily in some instances. The number of registered motor vehicles has doubled and redoubled in practically every State in the last ten years. We may confidently expect that it will double again in the next ten years; and what lies beyond that we do not know. But, of this we may be very sure: That twenty years hence whatever improvements we now make will be inadequate, and that we will then, as now, be confronted with the necessity of making still further improvements.

If that sounds pessimistic it is as far from my intention as the desire to disparage in the slightest degree the usefulness of the types of pavement that are commonly described as "permanent." Such surfaces become necessities when traffic attains a certain volume and weight, especially when the traffic includes a large number of heavy motor trucks.

I am told that the Nebraska Good Roads Association proposes to advocate the formulation of a program of paved road construction for the State. The appreciation of the value of highway service thus evidenced is the essential

basis of all successful efforts to improve the means of transportation; but it should be borne in mind that improvement by paving is economical only when the traffic is of the volume and kind that requires such a surface.

The mileage of paved surfaces is everywhere less than it should be. Our highway traffic has increased so rapidly that we have been unable to keep pace with it. Revenue in the amount desirable and necessary for the road construction required has been unobtainable; and the road builder has lagged seriously behind the producer of vehicles on this account; and so the determination of the Good Roads Association of Nebraska to put forth renewed effort in support of a larger program should be welcome news to the highway authorities of the State.

But in its advocacy of paved roads it is to be hoped that the association will not lose sight of two facts gleaned from the experience - some disastrous - of States and communities in all parts of the United States. These facts are, (1) that not all nor even a majority of the roads of Nebraska require paved surfaces, and (2) that no paved surface is permanent.

There are, doubtless, many miles of road in the State that are in need of such improvement; but there are many more which can be less expensively surfaced with entire adequacy; and some of these will remain unimproved for many years, if the available revenues are concentrated upon the construction of the so-called "permanent surfaces" beyond the real need for such surfaces.

The basic principle of highway improvement is that all roads should be improved to the maximum degree the traffic will justify, but no road should be improved to an extent in excess of its earning capacity; and the earning capacity of an improvement is measured by the aggregate reduction in vehicular operating expense which it makes possible. Applying this principle there is no difficulty in justifying the cost of expensive pavements on main, heavily traveled highways, but to advocate that all roads should be thus paved is merely another way of urging expenditure in excess of income.

Accepting this principle as the touchstone by which to measure the degree of improvement required, recognizing clearly that the work of improvement must continue without

end to keep pace with the increasing demands of traffic, and striving for "permanence" by continuous and complete maintenance, Nebraska will make no mistake. To forsake this well tried course in order to follow the will-o'-the-wisp of "permanent surfaces" is to court the failure and loss of public confidence that has invariably followed the deterioration of the supposedly everlasting pavements.