

Why Not Salt Stabilized Roads for North Land

Calcium Chloride Roads do Well in North. Several Here, Including New South End Road. Why Not Sodium Chloride (Salt) Roads? Subject Discussed.

Roads are vital to the North. Building roads with common salt is one of the latest developments in the business of finding out how the growing demand for decent secondary roads at a low cost can be answered.

Here in the North "stabilized" roads are now becoming common. After a couple of years' experimenting, the Department of Northern Development has evolved a road that appears to stand up well under ordinary conditions, is dustless, hard, smooth, requires little maintenance and is inexpensive to build in the first place. Samples of the calcium chloride stabilized roads may be seen between Timmins and South Porcupine; near Englehart; near New Liskeard; and again near Sudbury.

Must Have Good Base

Where the stabilized road has been constructed over a hard gravel base, the results have been satisfactory. About one-half of the road from here to South End is good, the other half full of weak spots that have become pot holes. The good road has been laid over the scarified macadam road that served ten years. Smooth and hard, it gives a fine driving surface.

Northern roads have been built with calcium chloride, a white salt-like material that costs about \$30 a ton laid down here. Mixed with gravel, sand, clay and water, evenly spread and rolled, the calcium chloride road is quickly completed and within a few

days takes on a fine-grained appearance somewhat like much-used concrete.

Now comes a new development that means much to Canadian industry. In place of calcium chloride, sodium chloride (common salt) has been found to make an even better road. Delivered in Timmins, the specially processed road salt costs \$15-\$4 for the salt, and \$11 freight.

May Make Good Streets

Engineers look to the new salt roads as a great improvement in town and small city side streets. Where oiling and grading of gravel streets has in the past cost large sums of money, salt-stabilized roads once laid down will remain without attention for long periods. The dustlessness is one feature that appeals to residents on treated streets. The low cost appeals to municipal councils and governments.

For many years "soil stabilized roads" have been built on the continent. They were made by mixing gravel, broken stone or slag, and a fine material like moist sand or clay. A surface was produced by mixing the materials, spreading them evenly over a well-established base and rolling, or allowing traffic to beat it down. The result was a smooth, moderately-hard road but it was found that while being rutted by traffic, so much evaporation took place that the clay, used to bind the other materials together, dried up and blew away on the wind or was cast aside by traffic.

Read builders knew that clay has one great quality that the more expensive materials have—it serves as an excellent binder on account of its cohesive powers. The problem was to keep the clay in such a condition that it would always act as a binder and not disintegrate.

Clay Must Be Kept Damp

Calcium chloride first answered the problem. Due to the quality of the chemical of absorbing water from the atmosphere and distributing it to the clay in times of dryness, the road was held together firmly, provided it was recently drained and had a good base on which the real weight of traffic could be carried.

Then United States engineers began experimenting with common salt. What they found may completely alter the secondary road situation on this continent. Dr. C. D. Looker has been among the most active in this field, and a recent report handed down by him contains probably more information on the subject than has ever been amassed before. Extracts from his report follow:

"It has been discovered that when certain other materials are mixed with clay, the supporting value of the mixture is greater than the combined value of the materials when used separately. For example, a cohesionless sand with supporting value of less than 300 lbs. per square foot might be combined with a fairly stiff clay with supporting value of 5,000 pounds per square foot to give a mixture that has supporting value of 17,000 pounds per square foot. Clay is subject to fairly wide limits of expansion and contraction when alternately dampened and dried—as by rain, wind and sunshine. In a roadway, untreated clay shrinks as it dries. It is necessary therefore to maintain a constant supply of moisture within the clay particles in order to have them retain their maximum cohesiveness for continued compaction of the stabilized material.

What the Salt Does

Research indicated that salt improves that stabilizing effect of clay. When water falls on the surface of

a salt-treated stabilized road, the surface salt is dissolved. Brine thus formed sinks below the surface. The clay in the surface swells somewhat and freed of most of its salt, some of it disperses or breaks up into very fine colloidal condition—an effect peculiar to salt alone. This expanded clay and finely-divided or colloidal material stops up the pores and tends to prevent further percolation of water downward from the surface, thus forcing excess water to drain from the road. Coagulation of clay and recrystallization of salt again take place in a salt-treated road as drying occurs and the salt brine creeps to the surface.

Has Permanent Effect

"The general effect of salt-treated clay in roads is to conserve the moisture in the clay, preventing excessive shrinkage and pulverization, thus holding the coarse aggregate firmly in place. Salt-soil roads, because of excellent compaction and crystallization of salt in the surface and the more or less permanent effects of salt on clay, somewhat resemble concrete in appearance and resistance to abrasion and have almost the close texture of bitumen.

"On the surface of a salt-treated soil road, the clay becomes practically impervious when it has absorbed a small amount of water. The crystallized salt and its effect on clay make a hard surface crust which inhibits further soil evaporation but which in turn will shed water. It is practically impossible to wash or bleach all of the salt or its effect out of clay."

But the point that will probably appeal most in Timmins and the North at present is contained in a statement of the chemist: "Their construction (salt-stabilized roads) involves a maximum expenditure for labour and a minimum for material. Experience has indicated therefore, that the salt-stabilized road represents more dollars' value per mile, measured in terms of first cost and maintenance, than roads built by any other method."

News Travelled by English Short Wave Station Route

Stories of telegraph despatches being detoured half way around the continent during a serious breakdown of direct communication had their counterpart in connection with the breaking of news in the North Country concerning the fatal accident which happened to Hollywood's screen star and America's famous aviator recently.

It fell to the lot of a powerful short-wave London, England, station to give residents of Skagway, Alaska, the news of the death of Will Rogers and Wiley Post, according to L. B. Jones, general agent for the Canadian National Steamships in Alaska, who has returned to Vancouver with the conclusion of the tourist season in the North.

Mr. Jones explained that long-wave reception was very poor in Alaska on that particular day and the powerful United States stations were not coming through immediately after the disaster. The Skagway folk, where Mr. Jones makes his headquarters, were therefore using their short wave sets to pick up what they could in broadcasts, with the result that they found the London, England station and were most grateful for the half-hour programme the British station devoted to the famed pair.

Value of Railway to Life of Community

Address Indicates Service Given by Railroads in Pioneering New Sections of the Country.

"One must not consider only the direct result of operating a railway but also the various advantages accruing to the community. Generally speaking, the benefits of railway operation are not always to the railway but to the country and the people at large," stated J. Edouard Labelle, K.C., trustee of the Canadian National Railways, speaking recently before the Commercial Travellers Association at Sherbrooke, Que.

Mr. Labelle gave a brief outline of Sherbrooke's first railroad, the St. Lawrence and Atlantic, which chartered dated back to 1845. In 1853 it was leased to the Grand Trunk Railroad for 999 years and thus became a constituent part of the present Canadian National Railways. Built with the idea of diverting, for the benefit of Canada, part of the Western trade routed via the Erie canal, the St. Lawrence and Atlantic extended from Longueuil, Que., to the American border. From the border to Portland, Maine, it was known as the Atlantic and St. Lawrence Railroad. It gave Canada its first winter port, Sherbrooke its first railway and the Province of Quebec its first main line at a time when there were less than 1800 miles of railway in Canada.

Mr. Labelle described the pioneer role played by the Canadian National system in Canada and the useful part it performed in conveying settlers to the land, over 35,000 of whom have been carried in the last three years alone. He stated the Canadian National Railways served exclusively over 4,000 points in Canada and gave employment the year round to 77,000 employees, the total payroll being about \$100,100,000.

Mr. Labelle stated that Canada and Canadian National Railways have the same interests in common and pursued the same purpose, which was to work for the greater prosperity and welfare of the country. "Sometimes we have the wrong idea about our own interest," said Mr. Labelle, "and sacrifice them often to secondary considerations. This is true of the railways as of many other things. It is a sound principle then to look around and if necessary to cast an eye to the past in order to enlarge one's horizon and get a truer picture of the situation."

Says Ontario Gets More from Dominion

Hon. W. A. Gordon Declares This Province Getting Large Amount from Dominion. Refutes Heenan's Claim.

When Hon. Peter Heenan was in Timmins recently he gave the impression that Northern work by the province had to be reduced because of lack of support from Ottawa. This is given very strong denial by Hon. W. A. Gordon, Minister of Mines, Labour, etc., in the Dominion Government.

The Heppburn Government cannot find an alibi for its flagrant disregard of Northern Ontario needs by claiming that the Conservative administration at Ottawa hasn't been supplying enough relief money, declared Hon. W. A. Gordon, Dominion member for Temiskaming, in a statement given at Halleybury to the newspapers of the North last week.

Since the Heppburn Government came into power last year the Dominion Government's contribution to Ontario on relief accounts has been more than \$18,000,000, more than half of what the Henry Government received from Ottawa in relief moneys in almost four years. There has been an average monthly increase of nearly \$500,000 going to Ontario from Ottawa for relief purposes, the minister said.

The substance of Hon. Mr. Gordon's statement was to the effect that the Liberal Government of Ontario is receiving more money on relief account from Ottawa than the Henry Government received, despite the fact that the Henry Government was in power when the depression reached its peak in April, 1933. And Hon. Mr. Gordon, as a member of the Dominion cabinet, is in a position to know.

Compares Grants

His statement hits hard at the Liberal administration at Queen's Park. Since the Heppburn Government came into power Mr. Gordon said the Ottawa administration contributed an average of well over \$1,250,000 monthly to Ontario for relief. During the Henry regime Ottawa contributed a monthly average of \$700,000. This means a monthly increase of nearly \$500,000 to the Heppburn Government. Hon. Mr. Gordon suggested that little of the money has actually been used for relief purposes in Ontario.

Time after time, Hon. Mr. Gordon said, speakers representing the Heppburn Government have repeatedly tried

to cover up their lack of attention to undertakings in Northern Ontario by stating that since the Heppburn Government came into power, grants to provinces have been curtailed by Ottawa and that they are being treated less generously than was the Conservative Government which preceded them.

The minister reminded that the Dominion contributions to the provinces are based on the inability of a province to take care of its responsibilities and while such contributions to provinces run dangerously close to establishing a precedent, yet it never was intended that the Dominion would indefinitely provide moneys to the provinces to take care of the responsibilities which are rightfully theirs. Provinces are so jealous of their rights, and it is becoming more apparent that the provinces of Canada are only too willing to lay claim to provincial rights with a reckless disregard of the fact that every right raises a corresponding responsibility. The Province of Ontario is jealous of its rights but with respect to its responsibilities it now rushes with undue haste to have the Dominion Government discharge them.

Audited Figures

With respect to Dominion contributions to Ontario, Hon. Mr. Gordon gave the following figures:

Audited figures show that from September 23, 1930, to June 30, 1931, the Dominion paid to the Province of Ontario on certificates rendered under relief legislation, the sum of \$3,710,257.43.

From July 1, 1931, to June 30, 1932, the payments were \$9,433,817.92.

From July 1, 1932, to July 30, 1934, payments were \$13,089,051.75.

Records show that during the 46 months from September 23, 1930, to July 10, 1934, the Dominion Government paid the Province of Ontario, under the Henry administration, \$34,957,045.15, to take care of relief problems. This was an average of \$760,000 a month. This period covered the worst of the depression, which reached its depth in April, 1933.

From July 10, 1934, to September 23, 1935, contribution to the Province of Ontario, under the Heppburn administration, aggregated \$18,791,770.73, for a monthly average of approximately \$1,296,000.00.

It will, therefore, be seen, Hon. Mr. Gordon said, that the Heppburn Government is receiving much more than the Henry Government, and instead of applying the money to the carrying on of useful work, it appears to have been absorbed in extra administrative costs and to an enlarged per capita cost which has increased alarmingly since Mr. Heppburn's advent to power. Although the number on relief has been

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greatly reduced, the total cost of keeping those who are still on relief, including administration costs, has materially increased in Ontario.

Escaped from Burwash Has More Time to Serve

Leo Larocque, aged 20, didn't help himself much when he escaped recently from Burwash. At the time of the escape he had three years and eight months to serve at Burwash jail farm where living is not too bad. Now he has seven years and eight months to serve, with four years of the time to spend at Portsmouth penitentiary where the only fun he is likely to have is talking to Miss Agnes Macphail about the conditions in the penitentiaries. Larocque was serving two terms imposed in Ottawa for breaking and entering and for theft. The terms were to run consecutively but there was time off for the remission given in connection with the King's Jubilee celebration. On July 25th Larocque broke away from the Burwash farm. One of the officials at the jail farm says that he took a big chance to escape. "He's lucky to be alive," the official says. "While working in the field with other prisoners, Larocque sudden-

ly broke ranks and under fire of several armed guards zig-zagged a perilous course to safety in the bush. He stole a car to help in his escape and was caught in this stolen car at North Bay. When the North Bay police arrested him they sent his fingerprints to Ottawa just to see if there was anything else against him on if he were an old offender. In this way it was learned that he was an escaped prisoner from Burwash. Larocque was sentenced to two years less one day as a result of the theft of the car. Then he was taken to Sudbury to stand trial for escaping from the jail farm. Magistrate McKessock sentenced him to two years at Portsmouth Penitentiary for escaping from Burwash. As the terms are consecutive Larocque has four years extra to serve and when this is done he still has the Burwash terms to complete. That is the way the matter works. All terms imposed for escaping from prison farms, jails or prisons are in addition to the original terms. It is comparatively easy to escape from Burwash, but it scarcely can be considered worth while as few are able to retain their liberty for any length of time and when caught they are just so much worse off for their efforts.

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