

your organization is as it should be, everything else will take care of itself. All the people of Ontario will not have to be experts in highway construction, nor will every County councillor be an expert in road building. They will select a Superintendent, or Engineer, to act for them, and he will become the expert in this line of construction. The Superintendent should practically take the place, with the County Council, of a contractor. He should be the type of man who would be a successful contractor. One of the important duties of a County Council is to select as their Superintendent a man who will have that degree of individuality which will make him stand out as the head of their county road system, and to whom every foreman and other employee on it will look with respect. That, I believe, is being accomplished throughout Ontario today. The County Councils are looking for the best type of man to occupy this extremely important position.

Another important part of the organization is the foremen. Part of the qualification of the Superintendent should be that he is able to select and get to work for him, and with him, good and capable foremen. What is a foreman? The word 'foreman' explains itself. It means the first man; the head man on the work, carrying out the instructions which have been given to him, and whose special duty it is to get the men, the teams and machinery to give fair and honest service on the road. Between the superintendent and the foremen, you have the essential features of an organization, and too much care cannot be taken in the selection of these men.

When you have selected the Superintendent (to take the place of a contractor), you must give him corresponding authority, otherwise you cannot hold him responsible. You cannot tie a man's hands and accuse him because he does not work. The superintendent must, according to the measure of responsibility placed upon him, have an equal degree of authority in handling the organization that he is expected to control.

A part of your organization, and an extremely important part, is to plan.

When you undertake to build highways you must plan ahead; and get the plans perfected as far in advance as you possibly can. It is part of the duty of the Superintendent to plan his work; and every foreman should be the first man on the job, with the day's operations well planned. Not only should the Superintendent plan for carrying out the construction, but the foreman should come to his work each day with a clear understanding of what he is going to do. These are some of the features of the organization that we should try to build up. In planning our work we should plan adequately, and be able to accomplish what you have in view.

I am sometimes asked if it would not be well to construct roads by contract instead of under the County Road Superintendent and his foremen. In road construction, in my experience, in order to get as good results from a contractor as from your own foreman, you must spend too much on surveys and engineering supervision to get the contractor to carry out the work. Specifications must be so complete that they frighten the contractor and increase the amount of his tender. The Contractor's risk is also greater than that of the municipality. I have seen sections where contract work had been carried out very close to day work, and going over those two sections, we could point out the parts which had been built under the County Superintendent and those under the contractor. The time is approaching when, I believe, we can construct highways by contract, but for the simpler class of work, the best and cheapest

results will come through carrying out the work under the Superintendent and foreman. When we come to make Provincial highways such as are constructed as State Highways, I can understand where the plant of the contractor can achieve excellent results, and his organization can be made of good use. But, up to that stage, I believe that the best and cheapest results can be obtained by doing the work under your own Superintendent.

The construction of the County Roads in Ontario does not end with the construction of main arteries. One of its objects is to free the Township Municipalities from the annual cost of maintaining their trunk roads. As I have intimated before, roads must be constructed and maintained for the traffic over them. I was talking not long ago to an officer of the Roads Association who has had a great deal of municipal experience. He instanced a road leading into Yonge Street gravelled about ten years ago. They made only a fairly good road of it, since that time very little had been spent on it, but it was always good; whereas Yonge Street, into which it fed had received \$2,000 every year to keep it in but an inferior degree of repair. That is an extreme illustration; but it is the fact that in every township, if you have not good main roads at the present time, as soon as a good road is constructed, it becomes a main highway, it draws the heavier traffic from other roads. From this cause townships can construct an inferior type of highway for branches from the main road, which will serve equally as well the traffic over them. My view is that every road in Ontario, travelled to any extent, should receive a due degree of care, and by proper organization in our Townships, this can be done.

To get a system established in the Townships, there are some essential steps. One is that you place your system on a cash basis. Collect what you require as a special levy on the assessment of the township, what your people can afford. When that sum is a sufficient amount, say \$3,000 or \$4,000, you should have a foreman appointed under the township council to take charge of the expenditure. By starting early in the year, he can, with the grading machine, grade the roads at the time of the year when earth is in a suitable state to be handled. We often see grading in progress on clay roads when they are as hard as bricks. That is a mistake. Road construction should go on at the time of year that is most suitable. The foreman should be out early in the Spring as soon as the soil is fit, to do all the grading that is required for the year. By using the log-drag on the roads after grading for maintenance you do not have to repeat the grading operation and it becomes permanent. But the log-drag is useful only as you make it part of a system, and the organization of that system ought to be the duty of the Township foreman. After the grading of the year is done, when the streams are low and the ditches are dry, that is the time for him to build the bridges and culverts. Graveling, if there is gravel in the township, can be let by contract, and carried in when the grading is finished. In the fall, drainage should be completed. By employing a permanent foreman, you create in him an experienced employee who will be able to bring that skill to play upon your highways such as other countries have found necessary.

Chief Constables' Association of Canada

The Annual Convention will be held at Halifax, N.S., not at St. John, N.B., as originally arranged, on June 25th, 26th and 27th.

Full details can be obtained from the Hon. Sec. Treas. Deputy Chief Constable Wm. Stark, Toronto.