

# **Railroad Maintenance**

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I am deeply grateful for the opportunity given me to once again appear on your program.

In the railroad industry a great deal depends upon cooperation of one railroad with another. These meetings give opportunity for a full discussion of topics by experienced officers, each of whom has had the advantage of service in an area where the conditions surrounding the maintenance of track and bridges may be entirely different from what it is elsewhere.

I have found from experience had in some 10 or 12 states that the maintenance officer wages an almost continual battle with the elements. If his railroad lies in a valley there are recurring floods which may seriously damage the roadbed. In the mountain areas the extremely rapid run-off is a constant source of danger to both track and bridges, as are land slides. In the northern tier of States, the winter season, with its heavy snowfall and successive freezing and thawing in the late spring months, creates a situation which requires extraordinary attention from the maintenance officer.

## **Emergencies Are Costly**

It is not only the interruption of traffic which these unusual conditions may cause but the amount of labor and material required to restore normal conditions cuts heavily into the yearly budgets, and in some cases may necessitate a curtailment in programmed work. This is particularly true in areas where there is deficiency in the supply of labor available for railroad employment.

The deep interest which I have always had in the maintenance-of-way department stems from an appreciation of the many handicaps under which your work is performed. Cars and locomotives can be purchased in complete units, and their maintenance can be carried on in specialty-equipped facilities without any concern of the traffic which is moving on the railroad. Track and bridge maintenance and construction work to the contrary, except in a few instances of re-alignment or new line construction, must be carried on under traffic and many of the problems with which you must contend are the result of this.

The problem has grown as the schedules of both passenger and freight trains have been shortened, requiring that slow orders be held to a minimum and that permissible speeds be higher. This means that more time than formerly is used in opening and closing track or in preparing a bridge to receive traffic. Where there are parallel main tracks the situation can be relieved by detouring the traffic, or such of it as can be detoured, during the working hours of the men. However, the development of improved signaling, which we commonly know as C.T.C seems rather to have suspended the construction of parallel main track even on lines where there has been a considerable increase in traffic density. In fact some considerable mileage of second track has been removed and C.T.C. operation substituted.

## **Higher Standards Needed**

The shift of industry which has occurred in the past ten years, together with population growth and sustained heavy production of farm products, has resulted in greatly increased traffic on many single-track lines. With the increased traffic load, higher standards of maintenance must be had, So your problems with respect to the performance of maintenance work under traffic will probably grow rather than diminish.

Relief in the situation at least in some measures would seem to lie in the adoption of certain basic principles founded on experience over the years to include:

1. Improvement in roadbed stability including adequate drainage of cuts by open cut ditch methods, if possible.
2. The use of off-track equipment to the maximum extent practicable.
3. The elimination of hand labor except when the job is such that a machine cannot handle it; machine tamping, for instance, bids fair to give us stronger track requiring less frequent resurfacing.
4. Material used in track and bridges, including ballast, rail, ties, and rail fastenings, to be of such standards as will carry the traffic load at required speeds with ample margin for safety and will give longer life.
5. Transportation of men to and from work by whatever means will insure the greatest possible utilization of the 8-hour day.
6. Gang supervision that always knows what it is doing, that will assume a responsibility to make suggestions toward better utilization of tools and men and can be trusted to perform all stages of the work with proper regard to safety.

#### **A.A.R. Expands Research**

The Association of American Railroads through its expanded research activities is endeavoring to determine the behavior under traffic of all basic materials used in track and bridges, this to insure that the traffic load can be safely carried under all conditions and the longest possible life secured. Our research people are making recommendations for such improvements in design and strength as their investigations indicate will insure this longer life in all materials used.

It is to the users of track and bridge materials, which all of you are, to whom our research forces must look for advice as to actual or incipient failures of any material supporting the traffic load when there is no reasonable explanation for the behavior of the material. Recently, we added a metallurgist to our research staff so that we will have accurate knowledge of just what it is that causes failures or distortions in the metal.

Most of you, I am sure, have installations of a test nature in your respective territories. Too much stress cannot be laid upon these test installations, since they may prove to be of extreme value not only to your own company but to the entire railroad industry.

In closing, let me remind you that it is primarily the freight which we haul from which the revenue comes for the support of the numerous activities of a railroad, including the maintenance of track and bridges. The sharp up-turn in business, which occurred even before the beginning of the trouble in Korea, has created a serious stringency in our freight car supply. To overcome the shortage a great many things will have to be done to secure greater utilization of the freight cars which the railroads own. Among these is the prompt release of cars in which you receive your materials, a great many of these being cars which are used for commercial shipping. We shall appreciate it if your response is prompt and nationwide to this appeal for cooperation.