

# Electric Railway Journal

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## INVESTIGATE SNOW-FIGHTING EQUIPMENT

Among the subjects which will be assigned for consideration this year by the Engineering Association, it has been suggested that it might be well to include an investigation of the subject of snow-fighting equipment. So far as we know, this matter has not been treated within recent years certainly by any committee, yet it is of very live interest to all companies in the northern sections of the country. A great variety of equipment is now in use on these properties, and almost an equally large number of theories exist as to the proper methods of combatting snow. All of these cannot be best for all conditions. One reason for a variety of practices in snow-fighting equipment is undoubtedly the fact that much of this equipment is home-made because it is used for only part of the year. Of course, home-made equipment may be just as efficient as any other for this purpose, but this fact is another reason why the subject could well be reviewed by a committee to compare the practices that are now used by different companies and to outline the requirements that are demanded of equipment for effectively removing snow.

## A FINE REPORT OF PROGRESS

We have already referred to the high character of the Atlantic City report of the sub-committee on social relations, abstracted elsewhere in this issue. Although called a progress report, it is actually one of the most important ever presented to the American Electric Railway Association. It is not only a dispassionate exposition of the advances made by electric railways in solving employee problems through social insurance, but also a far-sighted discussion of the future application of social economics along insurance lines. The committee strongly suggests, as a necessary and probable development of the near future, compulsory life and health as well as accident insurance for all American wage earners, most of which insurance, it states, could well be managed by joint boards of employers and employees in the various industries under regulations made by law. In the electric railway industry the best progress in procuring social insurance has already been made through mutual benefit associations thus jointly supported and managed, but if the industry is to secure the maximum benefits for employees as social insurance spreads, it must continue its good work along this line and so efficiently perform its social function as to keep itself free from the loads of other industries or overhead government costs. It is essential, therefore, that the electric railways thoroughly

understand the social insurance theory of assisting individual progress through the co-operative handling of hazards—a sane compromise between extreme paternalism and extreme individualism—and that they know the relative efficiency of methods under this theory. The sub-committee has furnished in elaborate form the material for such knowledge, and it should be used to the fullest possible extent by all electric railway officials.

## AXLE-MOUNTED MOTORS ON THE MILWAUKEE

On the giant locomotives for the Chicago, Milwaukee & St. Paul Railway, which are described in considerable detail on another page, there is one feature that seems to us to stand out in importance before all others, with the possible exception of the ingenious scheme whereby regenerative braking is accomplished with direct-current motors. This dominating feature is the successful application of the so-called trolley-car drive, or the direct-axle-mounted arrangement for the motors, and the fact that it has passed satisfactorily through practically a full year of service on these heavy engines cannot fail to have far-reaching influence on electric locomotive design of the future. To the axle-mounted motor may be ascribed the very great advantages of simplicity and accessibility, but for heavy, high-speed locomotives the low-hung non-spring-borne weight has frequently been regarded with suspicion. On the Milwaukee's electrified divisions the rail is of 85-lb. and 90-lb. weight with four-bolt and six-bolt joints, the rail being double spiked and equipped with tie plates at all curves. Manifestly, this construction is of a high grade, but it does not by any means go beyond the practice that is customary for the better class of steam railroad. As a matter of fact, there is no difference between the track construction on the Milwaukee's electric zone and that found throughout the remainder of the road. If, then, the Milwaukee's high-speed and ultra-heavy electric locomotives can be operated for a year without troubles on this score, it seems to be safe to say that the old bogey of track damage from electric locomotives with direct axle-mounted motors may well be laid away permanently. Whether the simplicity of this arrangement can overbalance the advantages of wider clearances and concentration of power that are possessed by the frame-mounted motor is, of course, still to be determined, but from the evidence at hand the issue between the two types of design can no longer be complicated by the highly nebulous question of the relative influence that is exerted by each one upon the track.