

transportation plant of the government-owned lines. The aim of the management is to bring the lines up to the standard which existing traffic justifies, to improve these standards as traffic increases, and finally to reach the position where the facilities will provide a slight margin over the immediate traffic requirements, so that when emergency traffic develops there will not be congestion. With respect to many sections of the main lines, this margin of capacity now exists, but expenditures are required on various sections, and at terminal and other important points where limiting conditions now restrict the economical handling of traffic. To improve track conditions, 625 miles of new 85 lb. rail were laid, and on 130 additional miles of track the existing rail was replaced with heavier section, this being largely good 80 to 70 lb. rail released by the first item. The balance of the released rail was used up on the construction of 64 new passing tracks, and the extension of 35 others; also 44 transfer, storage and other tracks, and 46 private and industrial tracks. This additional trackage will greatly facilitate the handling of trains and switching in yards.

About \$1,200,000 was spent on ballasting. Over 100 trestles were replaced with permanent structures, and many other bridge improvements were made, a large item being \$267,000 expended on the St. Charles river bridge. Good progress was made on the important work of providing second track where in previous years serious congestion has occurred on the Intercolonial Ry. The points where double tracking is being undertaken are between Ste. Rosalie and Charlotte, Truro and Belmont, Springhill Junction and Maccan and also out of Moncton. Over \$1,000,000 was expended on the work during 1919. The double track between Drumheller and Munson Jct., Alta., has been completed, thus greatly facilitating the handling of coal from the Drumheller mines. In the case of the Drumheller work, the grouping of 23 mines in one locality, and the attendant mining conditions, make the handling of the traffic practically a limiting factor in production; the movement, too, being crowded into a relatively short season, makes it imperative that good facilities for handling be provided. These expenditures to improve operating conditions produce in many cases a much greater return on the investment than equal expenditures on new lines, as not only are additional earnings secured, but operating expenses are reduced, greater use of equipment is obtained and better service to the public. In line with the management's policy of improving existing facilities, many new structures have been erected, among these being 16 water tanks, 11 coal handling plants, 2 coaling trestles, 26 stations, 12 station shelters, 13 freight sheds, 4 express buildings, 64 single section houses, 10 double section houses, 36 bunk houses, and 8 workmen's cottages. Such expenditures eliminate train delays, effect labor saving, add needed facilities, provide housing and tend to the welfare of employes.

Additions and improvements to locomotive houses, machine shops and other mechanical facilities accounted for \$125,000. General improvements included considerable ditching, widening banks and removing sags, preparatory in some cases to ballasting. Some diversions, to reduce grades, to give better alignment, or eliminate bridges were

completed and others are under way.

The rebuilding of the Canadian Northern line between Cap Rouge and Portneuf, washed out by the tidal wave in 1918, was almost completed.

On Prince Edward Island, where the lines are narrow gauge, a third rail has been laid from Charlottetown to Summerside, and from Port Borden to Emerald—60 miles in all, which enables standard gauge rolling stock to be interchanged by car ferry, greatly facilitating the handling of traffic to and from the Island.

New Construction in 1919.—In submitting the construction programme for 1919, the directors recommended that the work to be undertaken should be as closely as possible confined to completing branch lines which were under construction in Western Canada at the outbreak of the war. Following this policy, work was done on various lines, among the more important being the extension of the Hanna-Medicine Hat line to Red Cliff, and the St. Paul de Metis line in Alberta; the Humboldt-Melfort connection and Duck Lake branch in Saskatchewan, and the Kamloops-Kelowna line in British Columbia. On Vancouver Island, 28 miles of track were laid on grade previously constructed, and 40 miles of ballasting completed. The Vancouver passenger station was completed and opened for traffic.

Shortage of labor and disturbed industrial conditions during the summer prevented the expected completion of certain western branches, but the work on these will be vigorously pushed this year.

At Toronto, the Leaside terminal yard was further developed. Most of the facilities at this point are now utilized and are proving of great value in handling the business on the lines in Southern Ontario.

Betterments Proposed for 1920.—The following general improvements are recommended by the directors as being among the most pressing requirements of the system:

Canadian Government Rys. The relaying of about 200 miles of track with heavier steel, and the utilization of the released steel for additional passing tracks, spurs and sidings.

The completion of the 20 miles of double tracking already referred to and now well under way. Improvements to or replacing of over 200 bridges, trestles and culverts, including filling and other permanent work.

The construction of 25 stations and freight sheds, 7 coaling plants, 7 water stations, 9 buildings for the mechanical department such as locomotive houses, machine shops, etc., 58 buildings for housing employes such as section houses.

Provision will be made for the general improvement of track conditions, and at St. John, N.B., an extension of the yard trackage is required to relieve the congestion at that point.

Canadian Northern Lines. The construction of branch line mileage in Western Canada provides an opportunity to replace steel now on main lines with heavier section, the steel taken from the main lines being serviceable for branch line traffic. The additional traffic being provided by the branch lines is enabling heavier train movements to be made, and the present demand for all-steel passenger equipment requires the utilization of very heavy power, making it necessary to continually improve the standard of main line roadbed, track and structures.

The programme in respect to rail re-

placements covers the relaying of 350 miles of new steel on main lines; 331 bridges, trestles and culverts are to be replaced, filled or renewed, involving the replacing of many temporary structures by permanent work. The completion of additional mileage in the prairie provinces has necessitated the construction of many new buildings, a large item being 68 stations and freight sheds. There were also built 22 coaling plants. The present price of labor necessitates the adoption of labor-saving devices of this kind. There are also listed 20 new water stations. The mechanical department's facilities will be improved by the construction of new locomotive houses, machine shops, etc., 19 in all. Some of these are required at the end of new branch lines. Additional lines also account for a number of the 134 section houses required.

A large appropriation is required for general roadbed and track improvements, and increasing traffic warrants improvements and revision of the main line between Montreal and Quebec.

A greatly needed improvement is the stringing of an additional copper and steel wire between Montreal and Toronto and Winnipeg, to provide through wires between these important points, the present wires being required for local business and train dispatching. The new wires will also enable new through business to be handled by the G.N.W. Telegraph Co. through Canada, whereas the company's through business now goes via United States connections.

Construction Programme, 1920.—It is again proposed to confine new construction in Western Canada to the completion of branch lines on which work is well under way. The programme includes work on 16 branch lines in Manitoba, Saskatchewan, Alberta and British Columbia. The principal items of track laying will be from Eston south-easterly, 35 miles; Humboldt-Melfort line, 32 miles; Melfort north-easterly, 32 miles; Oliver north-easterly, 22 miles; Peace River line, 32½ miles; Swift Current line, 18½ miles, and Jackfish Lake branch, 27 miles. In British Columbia it is proposed to grade 40.4 miles to complete the Okanagan branch. In all, 349.6 miles of track is to be laid and 123.4 miles of line to be graded. The extension of other lines and the construction of additional branches is very strongly urged, and while certain of these projections are fully justified on traffic considerations, their construction has to be postponed on account of the financial situation, labor shortage and high cost of material and supplies.

In Eastern Canada there are several very important connections which can be regarded as essential to economic and unified operation with other lines of the national system, but which must also be postponed until the financial situation improves. Among these may be mentioned the Long Lake connection between the National Transcontinental and the Canadian Northern main lines, which, when completed, will give the Canadian Northern the short route between Winnipeg, Montreal and Toronto.

Rolling Stock Orders.—During 1919 the following rolling stock was ordered for Canadian Government railways: 25 Pacific type locomotives, 25 switching locomotives, 13 compartment observation cars, 18 standard sleeping cars, 9 dining cars, 30 baggage cars, 130 colonial cars, 20 tourist cars, 20 mail cars, 550 general service or coal cars, 500 flat cars,