



Tests of C.P.R. Mallet Articulated Locomotive.

shown in the h.p. steam chest was 540°, or 153° superheat. An average of a number of trips shows a temperature of 535°, or 148° of superheat, which is reached soon after a train is started, and remains practically constant, irrespective of boiler

pressure, cut-off, throttle position, or speed. The maximum temperature shown in the receiver pipe was 350°, and the average was about 345°. As the pressures ranged from 60 lbs. to 75 lbs., this would give from 38° to

25° superheat in the receiver. The amount of condensation in the l.p. cylinders is very small, and the cylinder cocks are closed after a few revolutions, which, of course, tends to decrease the water consumption.

As the locomotive has not been in service sufficiently long, no figures are available as to cost of maintenance, but it is to be expected that, as there is practically double the amount of machinery, this will be somewhat higher than on the consolidation locomotives in the same service. The operating costs will be slightly higher when considered on a locomotive mile basis. The same crews do the work for the same wages, but more lubricant, waste, and sand must of necessity be used, and the cost of wiping and cleaning will also be higher. On a ton mile basis, which is the fairest comparison for operating cost, it will be lower, due to the greater tonnage hauled, which, it is considered, together with the saving in fuel, will show considerable economy in favor of the Mallet locomotive.

The foregoing was read before the Canadian Railway Club recently.

Per Diem Rates for Freight Cars.

On Jan. 3, the American Railway Association submitted to its members throughout the United States and Canada a letter ballot on the question of the amendment of the code of per diem rules by the insertion in rule 1 of one of the three following rates:—40c. per car per day; 35c. per car per day, or 30c. per car per day, also as a recommended method for securing the return of equipment on demand the enforcement of Car Service Rules 1, 2, and 3 by the imposition of a penalty of \$5 a car to be paid to the owner of the car by the road violating the rules. It was provided that a majority of the members, representing two-thirds of the freight cars owned or controlled by members of the Association should be required for the adoption of the proposition submitted. The results of the voting showed that a majority of the members as provided above were not in favor of any of the proposed per diem rates, and all the propositions were lost. The proposition for a penalty of \$5 a car as mentioned above was defeated.

At a special meeting of the Association in New York, Jan. 27, it was decided to take a letter ballot on the question of the adoption of 30c. as the per diem rate on freight cars for the five months of Mar., April, May, June and July of each year, and 35c. for the remaining seven months: Jan., Feb., Aug., Sept., Oct., Nov. and Dec.; and that these rates be incorporated as an amendment in Per Diem Rule 1. It was decided to close the ballot on Feb. 19, and if the proposition was adopted by a majority of the members owning or controlling two-thirds of the cars owned or controlled by members, it was to go into effect on the first of the month following the amendments that it had been so carried. The voting resulted as follows: Yes—224 memberships, representing 1,767,162 cars owned or controlled. No—87 memberships, representing 419,851 cars owned or controlled. Not voting—29 memberships, representing 62,994 cars owned or controlled. The total membership of the Association is 340, and the cars owned or controlled by the members 2,250,007. The majority requisite for approval is 171 memberships and 1,500,005 cars. The amendment therefore went into effect on Mar. 1, and the amended rule now reads as follows:—

"1. The rate for the use of freight cars shall be 30c per car per day for the five months of March, April, May, June and July of each year, and 35c per car per day for the remaining seven months, viz., Jan., Feb., Aug., Sept., Oct., Nov. and Dec., which shall be paid for every calendar day and shall be known as the per diem rate."