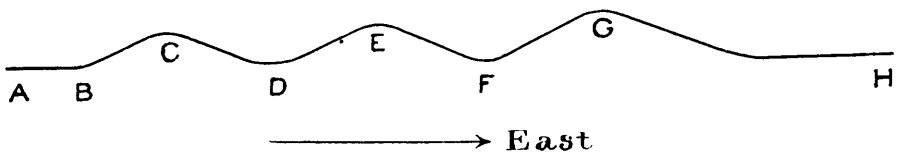

say, 120 miles. We will assume that the grades B C, D E & F G are all the same, say 1%, & that the balance of tonnage is eastbound. If your engines are fully loaded over the grade F to G, & fills out to their hauling capacity with anything for the east offering at G, or at stations between there & H, we have done everything in the direction of fully loading our engines that can be expected of us. Now, if you will turn to table 1 (see page 67) you will find a load sheet, eastbound & westbound, on a section or engine run, viz.: between Havelock & Smith's Falls—109 miles, giving the load for each class of engine from station to station, at which the haulage capacity changes, in equivalent tons; that is, for a train of which the tare is 33⅓%, two tons of contents to one ton of tare. You will note that eastbound there are two ruling grades; that is, there are two similar grades limiting the tonnage which an engine can take through over the section. The 145% engines can, for instance, take 1,008 equivalent tons over the grade east from Tweed & east from Sharbot Lake. We debit the superintendent for every 145% engine run east on that section—with 1,008 equivalent tons, & we credit him with what equivalent tonnage he does take over the grade east from Sharbot Lake—the more easterly controlling grade. Now turn to table 5. There is the performance eastbound, the direction of the balance of tonnage, for one day, Nov. 1, on this same section. I invite you to study this table—in connection with engine load sheet—table 1—the rules—table 4, & the chart. You will note that we only debit the superintendent with the tonnage which he should take over the controlling grade at the reduced ratings authorized for unfavorable weather & other conditions; for instance, on a fast freight handled by a 145% engine under ordinary weather conditions, we charge him with 1,008 tons—the schedule load—less 10%—B rating—this reduced tonnage being necessary to enable him to make the faster time required with this train. On this day, Nov. 1, the power should have taken, you will see, 6,856 equivalent tons eastbound over the controlling grade between Havelock & Smith's Falls. It did take 6,872, or a trifle over 100%, & the officers of the transportation department with this return before them know that the power has on that section on that day been used to the best possible advantage. Such a return every day from every section of the line enables us to closely supervise the loading of our engines in freight train service, & to know whether or not we are getting all that we should out of our power.

Now I will answer Mr. Potter. What did we gain by the new method on that day on that section? Each of the 145% engines under the old "actual" tonnage system would have been scheduled to take 913 tons, or, as explained in the note to table 5, a total of 6,209 tons. They did take under the new method 6,344 actual tons, a gain of 135 actual tons, or 19.3 tons per train. In this case the gain is not large, but I may say that we are showing generally very satisfactory gains in the tonnage taken in the direction of the balance of the traffic due to this system—in Dec. certainly over 5%—& we are having more satisfactory service getting our trains over the road, because engines are not overloaded, especially on trains having a high percentage of tare. If the schedule load on any grade is too heavy for any class of engine we soon find out by such engines doubling or being assisted over that grade, which information must be reported in the "Remarks" column on the daily performance return—in which column must also be reported the explanation why any engine is light loaded over the controlling grade in the direction of the balance of tonnage.

Now, it may occur to you that we do not know by this system whether our engines after they are over the ruling grade are doing what they should, that is, for example, lifting cars from (see the profile) G & stations east of there to H. An engine can take larger tonnage from G to H than it can bring to G, but we can & do check this by our daily performance return. If trains reaching G from the west fail to lift cars from G & stations east to H, how can these cars be moved? An engine must be sent from H for that purpose. The engine must return & must then, moving as it then will be in the direction of the balance of tonnage, be reported on the daily performance return, & whoever is in charge of the train movement on this section will at once be requested to explain why he failed to lift these cars with the way-freight or other eastbound trains.

We use two forms, as to which I desire to make a few remarks for your better information. One of them is the coal ticket. Coal is very expensive with us, & we watch its consumption very carefully. When an engineman reaches the end of his run, having entered up on this coal ticket how much coal he had on the tender when he started & how much he took on the trip, he estimates the quantity he has left on the tender & enters this, also what