

continues in all the local freight trains. Of course they are rather peculiarly situated. They haul ore from Lake Erie to Pittsburgh, & their net tonnage on leaving the lake is, of course, very high. They carry about 40 cars with 50 tons in each car up from the lake, & that helps matters. But they have a comparatively light tonnage coming the other way—a great many trains of empties, with absolutely no paying tonnage in them whatever, & that in turn cuts down their rate.

J. M. DALY—I am afraid the transportation men present will have to increase our tonnage unless we get further facts on the conditions that prevail on the Bessemer road. I would ask in regard to the question of the unit being 13 tons, what he would do in case he got a car of merchandise, the car weighing 13 tons, & there being 4 tons of merchandise in the car? Would he give the engine credit for the extra 4 tons? Or is that dropped entirely unless it reaches more than half of the unit or $6\frac{1}{2}$, which on 40 cars would be quite an item?

G. L. FOWLER—Their method of reckoning the units is this: Their single unit is 13,000 lbs. They have made an examination of the average run of cars over the road to see how they would average up, reckoning by units. They jump to 32,000 lbs. for two units. Anything between 13,000 & 32,000 lbs. they reckon as 2 units; between 32,000 & 45,000 is 3 units; between 45,000 & 58,000 is 4 units; between 58,000 & 71,000 is 5 units; between 71,000 & 84,000 is 6 units; between 84,000 & 97,000 is 7 units; between 97,000 & 110,000 is 8 units; between 110,000 & 123,000 is 9 units, and between 123,000 & 136,000 is 10 units. The conductor or the yardmaster in making up his train has his net tonnage & the tare weight of his car. Of course that is added on his waybill. He puts down his figure, 3 or 5 or 10 units, or whatever it may be, to correspond

to that weight, & when it foots up so that he has got 430 tons he stops, couples on his engine & starts down the road. If there is a pound more than 45,000, it is 4 units; if it is a pound less than that, it is 3 units. From 32,000 to 45,000 is 3 units. From 45,000 to 58,000 is 4 units. I will call attention to the fact that their points of division are about half-way between the actual even multiples of two consecutive units. For example, they call 3 units from 32,000 to 45,000. Now, 3 units actual is 39,000, so that they can run 6,000 lbs. over & 7,000 lbs. less on each side of the actual division. Of course it is an average method for rapid work in the yard, & it answers their purpose perfectly. They have no stalled trains & they haul a tremendous traffic.

J. M. DALY—We had a practical demonstration on tonnage during Oct., when our mines were closed on a strike. Instead of hauling 80,000 lbs. of coal per car, with about 36,000 lbs. of tare, we had to haul a lot of cotton & hay, & light-loaded cars, & our average tons per train went off very materially, & it showed there is no intelligent, fair & just comparison between one road & another, unless they both handle the same commodities. Consequently a road handling iron ore in 100,000-lbs. capacity cars, if they turned around & hauled cotton with the same engines I think their tonnage would be right down along with the balance of us.

G. L. FOWLER—I will say the management of that road acknowledged that. There is probably no other road in the world that is situated exactly as that is. They have this tremendous traffic loaded on to them at one end & absolutely nothing else to take care of, coming that way. Going the other way they have nothing in the world but coal & iron, except, of course, the ordinary, little, light traffic that comes from local conditions &

what is called local freight. There is no other through traffic, & it is comparatively easy for them. It is given merely as an instance of locomotive rating & of successful operation under local conditions.

MR. EATON—A vital feature in that is the question whether all the traffic is balanced. If balanced, they can avail themselves of their heavy tonnage to greater advantage. I want to ask another thing: Is it not true that the Baltimore & Ohio had this system of units of 13 tons, which they discarded for a more accurate rating in actual tons?

G. W. WEST—I would like to ask Mr. Tait whether they have used the heavy capacity cars long enough to demonstrate whether the conditions he mentioned in regard to the beef & grain were actual or imaginary? Some tests that Mr. Daly & myself have watched for a few days have not demonstrated that to be a fact; that the car construction had as much to do with that as the loading. And then I question whether the heavier capacity cars, when they get down on their side bearings, will be able to haul the tonnage load in a fewer number of cars.

The CHAIRMAN—Mr. Sinclair, we would be glad to hear from you, if you will favor us.

A. SINCLAIR—There are so many practical railway men here that you have not heard from, that I think it is rather unfair for a theoretical man to get up & say anything about this subject at this part of the game. I have paid a great deal of attention to the tonnage rating of locomotives ever since it was first agitated. I must acknowledge that at first I was rather prejudiced against it, as I have been accustomed to the car rating; but it undoubtedly became a necessity with the great variation in the weight of carloads that have become common of late years, & consequently

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