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DIVISION POINTS FOR ELECTRIC LOCOMOTIVES

The proposed 440-mile electrification of the Chicago, Milwaukee & Puget Sound Railroad, of which accounts have been given in recent issues of the ELECTRIC RAILWAY JOURNAL, is unique in that with the present steam service it now includes several operating divisions, and it will be interesting to see the extent to which electrical operation will tend to combine them. Ability to do this is one of the incidental advantages of electrification and one which is by no means unimportant. When steam is used as a motive power there is every reason for limiting the length of divisions to not more than 150 miles, because the steam locomotive after traveling that distance is generally in need of attention to its machinery or boiler, and the fire has to be cleaned. This involves work which cannot be fairly imposed upon the modern fireman. With the electric locomotive, however, the only limit to its continuous run is the length of the electrified line. It is, of course, true that a crew would hardly be capable of staying on the engine for a distance much greater than 200 miles, but the fact that crews would have to be changed does not by any means involve the removal of the engine even temporarily from service. With a traffic composed largely of through freight the only reason for holding trains at division points, aside from the time required to change crews, is the necessity for inspection and setting out bad-order and local cars, and there seems to be no reason why an electric locomotive could not stay upon its train almost indefinitely. It could, in fact, do the necessary switching, at least at the head end, after the inspection of the train, and thus reduce the costly yards, prolific of delay, to the importance of elaborate sidings. In addition, the increased monthly mileage of locomotives on long runs is an important source of saving. This is shown by the present custom of using, where it is possible, double-crewed passenger engines on runs even 250 miles long.

FORESTALLING CONSTRUCTION DAMAGE SUITS

The truthful camera has long been a friend of the live claim agent in giving indisputable exhibits of conditions at scenes of railway accidents and of the actual doings of supposedly bedridden claimants. However, the photographic practice of the Public Service Commission, First District, New York, shows that the camera may also be used successfully in forestalling or minimizing the expense of damage suits due to construction work. It is obvious that the construction of new lines, whether surface or non-surface, involves some disturbance of streets, sidewalks and buildings, with possible damages to owners of abutting property and injuries to pedestrians and occupants of vehicles. In the case of the Broadway-Lexington Avenue subway, for instance, the commission delegated one of its assistant engineers and its staff photographer to make photographs of each section even before it was let for construction. The engineer accompanies the photographer partly to point out what is to be recorded but chiefly to determine the exact location of each view. The plate therefore always shows the street, surveyor's station number and the date. It is customary to take general views of the paving and sidewalks as well as individual views of every house. In addition to these photographs, the customary progress views and special details of jobs are also secured. For the Broadway and Lexington Avenue subway alone 1400 views were made from Jan. 1 to April 1 of the current year. The effect of this wise policy has been the practical elimination of "fake" suits and the reduction of just claims to an equitable basis. In fact, the photographs have enabled the New York corporation counsel to settle many cases out of court.

GENERALIZATIONS IN PROBLEMS OF ELECTRIFICATION

During the discussion on steam railroad electrification which occurred at the recent meeting of the American Institute of Electrical Engineers emphasis was laid by one of the members on the danger in generalizations. That the point was well taken was shown by the fact that the widest kind of divergence existed between the viewpoints of those taking part in the discussion. Indeed, the expressed opinions, often backed up by figures, ranged all the way from a belief that electrification under the cited conditions would produce vast economies to a conviction that the savings of the hypothetical electrifications would be less than the fixed charges on the overhead construction and equipment. Steam railroads as well as electrified lines work under such an extraordinary complexity of operating considerations imposed by local conditions that it is quite impossible to sum them up into a single example which could be said to apply to all cases even as an approximation of the widest latitude. A statement which was made before the meeting charged that 42 per

cent of the total engine-house costs were involved in the washing out of locomotive boilers. This might apply in the Dakotas and Montana, where it is not unusual to find engines being washed out or at least having the boiler water changed every half trip. But there are many favored localities where the water is so pure that, in round-house parlance, "the engines are washed out once a year, whether they need it or not." No less subject to wide variation is the price of fuel, which, as cited by one of the contributors to the discussion, may be oil at 70 cents a barrel, making an electric energy rate of ½ cent per kw utterly prohibitive. A similar situation obtains through the Alleghany Mountains, where coal of the finest quality may even be dumped on to the locomotive tender direct from the mine tipple. What interest in the fuel economy of electrification could exist under such conditions? Yet, in the Southwest, poor coal at $5 a ton makes this very item of expense the most serious single one among all the operating costs. In the end every electrification problem will have to be studied by itself with no more consideration of results obtained elsewhere than will provide highly elaborated unit costs, which can be used only with the utmost caution.

BUS COMPETITION IN LONDON

The keen competition for traffic in London between motor buses and street cars, to which we have previously referred in these columns, has reached the stage where it is being considered in the House of Commons by a select committee which has been appointed to study the entire subject of street traffic in London. The special reason for the hearing now is partly the extreme congestion produced in the streets of London by the presence of large numbers of motor buses and partly the accidents both to pedestrians and to other vehicles caused by the reckless driving of the buses. The tramway managers have been called upon to contribute their testimony on the situation, and their contention is that if the present laws which greatly favor the motor bus are repealed the congestion and accidents will be greatly reduced.

At present, according to the testimony presented at the hearing, each tramcar has to pay an annual tax varying from £180 to £220, and the tramway is the only method of traction which is held responsible for road construction and maintenance, whereas the buses pay only the petrol tax of £43 a year. In this connection striking photographs were shown of street congestion which could be eliminated, or at least greatly reduced, if Parliament should only adopt a policy of not discouraging the system of traction on rails. Thus, in one view of a London street exhibited, there are shown five omnibuses and twenty taxicabs whose total seating accommodation could be provided by four tramcars.

The matter of unequal taxation, however, was not the only complaint made by the tramway managers against the buses, as they alleged unfair practices by bus drivers. Two methods in particular are specified; namely, "cutting in" and "nursing." "Cutting in" means the running of a motor bus between a tramcar and the curb at the time when passengers are about to board the car or alight. This practice naturally discourages timid people from using the tramway. According to the British *Light Railway and Tramway Journal*, the method was graphically described by one of the tramway managers at the hearing in the following terms: "Elderly passengers and women are deterred from the tramcars at picking-up points by a motor bus being driven straight at them, the horn being sounded without apparent slackening of speed, the people scattering back to the pavement and the bus drawing up in such a way as to block completely all access to the platform of the tramcar. If the bus is proceeding in front of the tramcar it will keep on the tramway track, despite its normal inferiority of speed limit, and fail to draw up to the curb to pick up or unload, obliging the tramcar to stop behind it while this is done, if indeed it is not stopped so suddenly, and without notice, that a collision is occasioned. A bus will pass a tramcar on the off side and cut across its front so closely that only by the application of his brakes by the tramcar driver are serious collisions averted, and witness has numerous instances in his records where so close has been the risk taken that the step or the laths of the tramcar's lifeguard have been carried away by the bus."

"Nursing" is a very ancient custom of the London bus drivers and used to be employed with great efficiency in the days of horse buses by the old companies against any new company which might attempt to enter the field with a few buses. As directed against an electric car, the practice known as "nursing," as we understand it, is for two buses to "nurse" a tramcar by keeping close to it at the side, one just ahead of the car and the other just behind it. When the car stops the buses stop, and if the car should chance to get ahead they catch up to it. The first bus, as far as it can, takes on board the passengers who would otherwise board the car, and the second bus assists in the attack by frightening away those people who would cross the intervening street to take the car and takes on board those who do not board the first bus. The plan has enough of the sporting element in it to make it popular with the bus drivers, but whether its continuance in London streets will receive the sanction of the Parliament remains to be seen.

ESTIMATED INCREASE IN NEW YORK'S POPULATION

Delos F. Wilcox, chief of the franchise bureau, Public Service Commission, First District, New York, recently submitted to the Charities Conference some surprising figures regarding the population and subways of New York City. On the same basis as that used by the commission in estimating the traffic on the new subways in 1920, Mr. Wilcox estimated that in 1960 the population of the city would be 21,000,000 and its rapid transit systems would be carrying 21,000,000,000 passengers a year. The traffic resulting from such conditions would require 200 tracks through the business section, and the projected system provides for a maximum of only twenty-two tracks. These figures were based, we understand, on the estimate of the Public Service Commission that population between 1910 and 1920 will increase 35 per cent and traffic twice as much, or 70 per cent, these figures being determined by a study of vital and traffic statistics for the past decade. Mr. Wilcox has simply adopted the same ratio and extended it over the period up to 1960. Whether this past relation will