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Locomotive Fuel Consumption.

The following report, by a committee, of which D. Meadows, Division Master Mechanic Michigan Central Rd., St. Thomas, Ont., was chairman, was presented at the International Railway Fuel Association's meeting at Chicago:

For the purpose of gaining information to enable us to prepare this paper, your committee sent out the following explanation of the subject:

1. Methods of supervision, means, whether by fuel supervisors, road foremen or through the master mechanics or the division superintendents, or a combination of the above named officers. Whether fuel inspectors were employed at the mines in order to improve the grade of fuel, keeping in mind at all times to whom the officers or assistants named should and do report.

2. Instruction and encouragement in locomotive operation to include whether or not a definite programme of work has been installed; by whom and in what manner are engineers and firemen, as well as hostlers and roundhouse men instructed as to the best methods of promoting fuel economy in order to reduce the amount consumed. The above also to cover the question of examinations in progressive fuel economy of all interested in its use or having anything to do with its handling; the giving of premiums in order to stimulate and encourage every interest in the question.

3. The installing of any additional plans likely to mature the subject of efficiency in fuel consumption, its scope to be defined as follows:—How best to secure a reduction in cost at engine-houses in keeping engines alive, in dumping fires and again building them, in preparing engines for service. The results, so far as the three above divisions are concerned, to be tabulated.

The following list of questions was also sent out, and to those questions a fair number of replies were received. A few of these replies would indicate that some of the roads in the country are giving the supervision of coal careful attention, while on others it is a secondary consideration. However, we think it well to analyze the answers to each of the questions submitted, in order to consider them in a logical manner.

1. What methods of supervision are in vogue on your road or in your territory to promote the greatest measure of fuel economy, and who are responsible and to whom do they report?

The replies to this question show that a few railroad companies keep inspectors at the mines; the majority, however, do not. All the replies but one would indicate that the supervision of

fuel economy is generally looked after by the road foreman of engines and his assistants, they reporting to the master mechanic or superintendent of motive power.

2. Instruction and encouragement in locomotive operation: a, What programme have you installed; b, By whom and in what manner are instructions given to enginemen?

Some roads have books of instruction for economical firing, which are given to the engineers and firemen. In the majority of cases, however, the instruc-

sand ton miles, and comparisons made. The methods of doing this, however, vary considerably. This showing, or rather comparison, brings about a rivalry for a good record, and also shows the poor men who need special attention.

5. Do you have a system of progressive examination which engineers, firemen, hostlers and engine preparers are required to pass as to their knowledge of the properties of fuel and economies to be practised to secure results?

Replies to this question would indicate that the majority of roads have a progressive system of examination for firemen which includes fuel economy. On other roads instructions are given almost entirely by the road foreman of engines and his assistants.

6. Please name the method by which you require engineers and firemen to co-operate to avoid waste and loss of fuel and necessary firing.

All roads evidently attempt to bring about close co-operation between the engineer and fireman, instructing them that it is only by united efforts that the best results can be obtained, and the best means to this end is to feed the fire as lightly as possible, consistent with the service required, to feed the water to boiler evenly, to keep the fire clean, avoid waste of steam from pop valves by having a full understanding of work to be done, where steam will be shut off, etc.

7. Is it considered, from your experience, good practice to generally inform your engineers and firemen by circulars or charts, the temperature that can be obtained in a locomotive firebox by the varying degrees of heat and the color of the flame?

Some of the answers indicate that instructions by circulars and chart are very valuable; others simply answer "yes," while one states that he does not believe any good is obtained by going into technical details of this character with the average engineer and fireman. A good practical illustration, it is believed, will bring about the best results.

8. Does your company make up an individual performance sheet monthly, showing the cost of fuel per ton, and per locomotive mile, making comparisons between individual engineers from month to month?

All answers would indicate that individual performance sheets are not made out on the majority of roads.

9. Are money premiums or prizes of any sort employed by your road as an incentive to enginemen to improve and maintain a good fuel record? If so, of what do they consist?

To this all answer "no," it being gen-



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tion of enginemen is handled entirely by the road foreman and his assistants.

3. Do you advise class or individual instruction? Give reasons.

Replies received would indicate that all believe in both class and individual instruction, but emphasize individual instruction.

4. Do you advocate as an example in the instruction of enginemen that they be shown how many pounds of coal are consumed per locomotive, or per ton mile, and then be urged to make a saving by using less?

All answering agree that enginemen should be shown how many pounds of coal are used per locomotive, or thou-