Locomotives For Burning Oil

Already Used by American Roads—Its Value in a Forest Country in Preventing Fires—Cost as Compared with Coal.

Oil burning locomotives are coming to stay. As a matter of fact, some of the American railroads are already using them exclusively on portions of their lines. The Atchison, Topeka and Santa Fe Railway Company use oil burning locomotives exclusively on several hundred miles of their lines in California, Arizona, Texas and Oklahoma. They also use oil locomotives for their passenger trains on portions of their lines in the State of Kansas. Similarly, the Great Northern Railway has adopted the oil locomotive on some of their lines in Western Washington and in South Western British Columbia. The New York Central and other eastern United States roads are also using oil on a number of their roads.

Advantages of Oil Fuel

What then are some of the advantages of using oil for fuel? In the first place, it is of great value on lines that pass through forest areas. Every year the burden of expense in connection with the fire ranging along lines of railway is becoming a more serious matter for the companies. The use of the oil locomotive makes this unnecessary. They lessen the danger of starting forest fires from locomotives by just 100 per cent.

In the second place, the oil locomotive is a great advantage in city railway yards. The average city railway terminal is made hideous by cinders, soot and coal bunkers. Such a condition depreciates the value of property in the vicinity and constitutes little more than a common nuisance. With the advent of oil burning locomotives, this can be reduced to a minimum.

Information obtained by the New York Public Service Commission from the Southern Pacific, shows that the cost of changing locomotives from coal to oil burners averages from $350 to $650 per engine, according to the size and capacity of oil tanks required. To change back to coal burning, with all the coal burning equipment at hand that had been displaced from the engine, would cost about $25 per engine. The time required for the first change to oil burning would be from three to seven days, while the change back from oil to coal, or vice versa, with equipment on hand, one and one half days.

Repairs to the fire box are usually greater in oil burning than in coal burning locomotives, but this expense is more than offset by the saving in attendance necessary.

Cost of Oil Versus Coal

The following table gives a summary of figures on the cost of operation of oil-burning as compared with coal burning locomotives; the figures of the New York Central and Hudson River Railway Company, and those estimated by the Forest; Fish and Game Commission are given in the first two columns, while the figures finally adopted by the Public Service Commission are given in the third column:

COMPARATIVE COSTS OF COAL AND OIL OPERATION

N.Y.C.& H.R.R.		Forest Fish and Game Com.	Public Service Com.
No. of locomotives	54	42	48
Tons of coal burned yearly	40,971	39,957	40,971
Cost of coal burned yearly	133,979	131,167	133,979
Fire cleaners, etc.		8,165	3,780
Total cost (on tender)	133,979	139,332	137,759
Total per locomotive	2,480	3,317	2,870
Gallons of oil to ton of coal	188	1544	168
Gallons of oil burned	7,702,548	6,173,355	6,883,128
Cost of oil burned (on tender)	245,210	175,846	196,633
Annual cost of changing locomotives	16,770	8,400	9,600
Increased boiler work (fireboxes)	7,875	3,150	0
Increased loss of service	12,960	2,496	2,608
Interest and depreciation on additional equipment of locomotives	4,590	2,331	2,464
Interest and depreciation on storage tanks	9,140	3,983	3,983
Handling oil and interest on stock	3,000	126	1,500
Total cost (oil plus incidentals)	$299,545	$196,332	$216,788
Total cost (per locomotive)	5,547	4,675	4,517

It is of interest to note that the Canadian Pacific Railway is equipping a number of their locomotives in use on their Western Section, to burn oil.

Keeping Cities Clean

Cost in Canadian Cities—Motor Experiments in Paris

Keeping cities and towns clean is a very important phase of modern civic life. In the case of a large city the disposal of sanitary and economic wastes requires a very complete and complex organization in order to be effective. Thus, in the city of New York some 6,500 men are employed at such work the year round, and the total cost for the removal of wastes, street cleanings and garbage amounts to about $7,500,000 annually.

In Canadian cities the streets and yards require extra attention in the spring time. The thawing of the snow reveals the dirt and refuse accumulations of months. In some of the larger cities of Canada the systematic removal of ashes, garbage and street dirt is done with fair efficiency. But the "town dump" is a relic of other days that should no longer be tolerated in a civilized community. By far the larger part of the make-up of such dumps could and should be destroyed by fire. Unless this is done, the "dump" districts become not only unsightly, but a menace to the health of the community.

Costs in Canada

As examples of the outlay necessary in order to keep some of our Canadian cities clean, the figures for the cities of Toronto and Ottawa for 1911 are given herewith: The population of Toronto (not including North Toronto) according to the census of 1911 is 376,538. The total cost for the removal of ashes, garbage, street refuse and snow during 1911, amounted to $475,508. This does not include the cost of the removal of 6,000 dead animals, 3,200 chickens, 150 barrels of fish and 100 boxes of eggs. The street cleaning department of Toronto, therefore, spends about half a million dollars annually. The removal of ashes and garbage involved an expenditure of $250,000, being an average of $2.94 a building for the year, or less than three cents a call, a very creditable showing. In all, 660 to 700 men were employed during the winter, and 900 during the summer.

The city of Ottawa which has a population exclusive of suburbs of about 87,000, expended $112,000 on its street cleaning service during 1911. Although a much smaller city, the cost of the removal of snow was nearly double what was paid in Toronto, or $22,000 as compared with $14,339.

Experiments in Paris

Such expenditures, while they may be carefully administered, are a very important item in a city's budget. It is not surprising, therefore, that various more or less elaborate attempts have been made to cut down the cost. At the present time, the city of Paris is experimenting with gasolene motor flushing and sweeping machines. Recently the municipal authorities received fifteen vehicles of various types designed respectively for street sweeping and street watering and washing. These will be put through severe tests before it will be finally decided whether or not to adopt them. Canadian city authorities will doubtlessly follow these experiments with interest and profit.

Value of Water Powers

Should be carefully guarded—Power possibilities in British Columbia

Water-powers are daily becoming of increasingly great economic importance. During the last few years there has been special effort made on the part of large interests, both in Canada and the United States, to secure control of water-powers in strategic positions. Mr. Gifford Pinchot has drawn special attention to the fact that, year after year, the paid attorneys of large corporations were appearing at the seats of the Federal and State governments endeavouring to have restrictions removed which would facilitate the easy acquisition of coveted water-power privileges. In the recently published report on "The Water-powers of Canada", the Commission of Conservation emphasises the fact that the number of water-powers desirable from an economic standpoint are much less than popularly supposed.

In view of the facts above mentioned, every community should be alive to the power question as affecting its particular locality. The Commission of Conservation is at present working upon a report which will deal with the water-powers of Western Canada. The province of British Columbia is especially rich in water-power possibilities, but, nevertheless even here great care requires to be exercised respecting the conservation of this resource. There may be many water-powers in a community but, amongst these only one or two may be suitable for development on a scale sufficiently large to keep the cost of the developed electrical energy reasonably low. For example, around the Shuswap Lake district, and the valley of the Thompson, with its North and South branches, the possibilities of the Adams river are of great economic importance to the welfare of the whole community. In such instances the authorities should not permit any development to take place except under terms and conditions respecting period of lease, and absolute provision for the regulating of the prices at which power shall be supplied within the territory that may be covered from such a development.

These questions are of very great moment and careful study of them will, no doubt, contribute much to the welfare of communities whose progress is, in any way, associated with the development of power.

Demonstration Farms

The Lands Committee of the Commission of Conservation will start a number of demonstration farms in Canada this year. One farm will be selected in each district where the Agricultural Survey work was conducted last year, for the purpose of putting into actual practice the best and most profitable farm methods for that locality. The farmers in the districts visited last year may look forward to a visit in the near future from Mr. F. C. Nunnick, Agriculturist to the Commission, and Mr. John Fixter, Agricultural Demonstrator, in connection with this work.