

# THE STREET CLEANER

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## Forty Years' Incineration Experience. Toronto Put Its First Incinerator Into Operation in 1890

Harold D. Bradley, Deputy Street Commissioner of Toronto,  
Traces His City's Experience with Incineration  
From 1890 to the Present

TORONTO'S first incinerator, consisting of one furnace housed in a frame building, was put into operation in 1890 and served the city for eight years. This was followed, in 1893, by a second plant, with a capacity of eighty tons daily, which continued in operation until 1924.

### Increased Population

With the increase in population from 160,000 in 1890 to 470,000 in 1913, the problem of proper disposal of garbage and other waste was greatly intensified, and, as a result, an appropriation of one million dollars for refuse disposal purposes was obtained. After a thorough survey of the entire problem, incineration was adopted as the most economical and sanitary method.

The city's first high-temperature forced-draft plant was placed in operation in 1917. Constructed at a cost of \$225,000, it consists of three high-temperature 4-cell units, with combustion chambers and air pre-heaters and has a guaranteed capacity of 180 tons per day. The radial chimney is 175 feet high with an internal diameter of 90 inches. Each furnace has a grate area of 100 square feet, exclusive of the drying hearth which is 18 inches in width. Each blower, supplying pre-heated air to the furnace, has a capacity of 7500 cubic feet per minute, while the regenerators raise the temperature to 300 degrees F. Approximately 50,000 tons of mixed refuse are destroyed annually at this plant, at a cost of 1.5 man hours of labor per ton of material. The residue from burning amounts to 10 per cent of the original material by weight and is used for filling in low land.

The complete success of this plant was so apparent that in 1923 construction on a similar plant was started. Completed in 1924 at a cost of \$550,000, this plant embodied the latest in construction and design at that time. During 1932, this second plant destroyed 100,000 tons of refuse at a cost of 1.2 man hours per ton.

### Third Destructor Required

These two plants take care of about 70 per cent of the city's refuse, the balance being disposed of by dumping. However, a third destructor is now being added, which will eliminate the necessity of dumping. This new plant incorporates the latest ideas in design and furnace arrangements. Entering the receiving door, the vehicles discharge their loads into a receiving pit 124 feet in length, 15 feet wide and 18 feet deep. Two traveling electric cranes, each with a capacity of 2 cubic yards, deposit the refuse in receiving hoppers over the charging containers, from where it is discharged through the hopper doors to the furnace.

The necessary draft for combustion is supplied by a direct connected electric motor-driven centrifugal fan, with a capacity of 10,000 cubic feet per minute (one motor and one fan to each furnace). One complete regenerator is provided for each furnace, the necessary flue gas being bypassed at a point in the combustion chamber through the regenerator and controlled by a damper. The passage of flue gas will be from top to bottom on the inside of the tubes.

Instead of the conventional layout, this plant has four furnaces in two pairs, each pair back to back, separated by a passageway four feet wide. The overall length of the four furnaces is 86 feet, while the two central furnaces, facing each other, are 30 feet apart, thus providing a stoking area of 15 feet for each furnace. With no lost space, this arrangement permits the construction of a much smaller building with resulting lower costs.

### Trend Toward Incineration

Discussing this question further, Mr. Bradley pointed out that the trend is in the direction of incineration of all organic and vegetable waste. While this method has been in use in principle during the past 50 years, it is only during the last 10 years that it has been actively developed to its present state of efficiency.

"Refuse collection and disposal have never received the same measure of attention from municipal administration as that bestowed on other public works," concluded Mr. Bradley, "but it is as equally essential to the health and comfort of our citizens as water purification and sewage disposal."

## I. A. P. W. O. Program Rapidly Taking Shape

As the time for the 15th Annual Conference of the International Association of Public Works Officials approaches, the committee announces that the program is being rapidly rounded into shape and feels that its announcement soon will disclose an array of speakers and subjects which will prove exceedingly helpful to Public Works Officials.

As in previous meetings, little time will be spent on theory and generalities, the major portion of the program being given to practical problems which confront officials in their every day routine. While it is true, of course, that Public Works Officials have faced plenty of tremendous problems during the past few years, it is likewise a fact that, one by one, these same problems have been effectively met. In the solving new methods have been evolved which have resulted in getting a better job done by the introduction of more efficient means all along the line.

It is the aim of the program committee to give these problems and their solutions a thorough airing, in order that every official attending may go home with various ideas gleaned from the Conference which he can use in the every day routine of his department.

Right now is the time to begin laying plans to attend. The dates, September 26th, 27th and 28th are only a little over two months away, and time does have a way of slipping by. So plan to be on hand September 26th at the Hotel Sagamore, Rochester, N. Y. It will be well worth your while.

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*Dedicated to cleaner streets and highways  
and to those whose efforts are thus directed*

## COGITATIONS

It was at a meeting held in Chicago in October, 1919 and attended by thirty-two officials from cities scattered throughout the country that the idea of organizing an association of Public Works officials was formed. A real need for an association which would serve as a sort of clearing house for ideas and meeting place for officials who direct public works departments in various cities was felt.

The formal organization meeting of the association was held in October of the following year, when the official name of International Association of Street Cleaning Officials was adopted. This name was changed in 1922 and in 1930 the present name was adopted.

A Conference has been held each year since the association's inception and when this year's Conference is called to order on September 26th in Rochester, it will mark the opening of the fifteenth of these meetings.

Those who have attended one or more of these meetings will need no urging to be on hand for this one. They have found, from past experience, that the Conference's program always affords a wealth of practical information, making attendance a mighty profitable investment.

Those who have not yet had the benefit of attendance at one of the Association Conferences have a real treat in store. One idea, gleaned from the many suggestions that will be made, may be just the one what will help solve a problem that has been a real sticker for months.

Yes, the Rochester meeting will be decidedly worth while. If you haven't already laid your plans to attend, right now is the time to start doing it. Remember the dates, September 26th, 27th and 28th.

## Gangs Do Present Problems



## A Few Pick-Ups

Reports of the ordinary run of thefts seldom startle the desk sergeant at the Warren Avenue police station in Boston. When, however, the driver of one of the city's pick-up sweepers reported its theft a few nights ago, the sergeant was upset, to say the least. Pressed for details, the driver said that he left it on the street for a few moments at about 1:45 A.M. while he stepped into a restaurant for a cup of coffee. His thirst quenched, he stepped out of the restaurant to find only a clean path of pavement down the street and the sweeper nowhere in sight. After an hour's search, it was discovered several blocks away, the thief having departed without even turning off the motor. Evidently mature deliberation convinced the thief that, after all, a motor sweeper would be of little, if any, use in his business.

The annual report of Oregon City, Oregon, shows cash on hand at the end of the year in the amount of \$55,415. A plan has been adopted whereby the funded indebtedness of the city may be entirely retired in 1943. And, we ask, won't that be a glorious year?

We have heard of convicts escaping through prison sewers but now a report comes of a Seattle convict disguising himself as 100 pounds of garbage and escaping in a garbage can. Apparently a case of liberty at any price.

A man went into a small country store. The only man in sight, presumably the proprietor, was enjoying his ease at the back of the shop, chair tilted and feet on the counter, and made no movement to come forward.

The prospective customer waited a few minutes and then called: "Can't you serve me? I am in a hurry to get home."

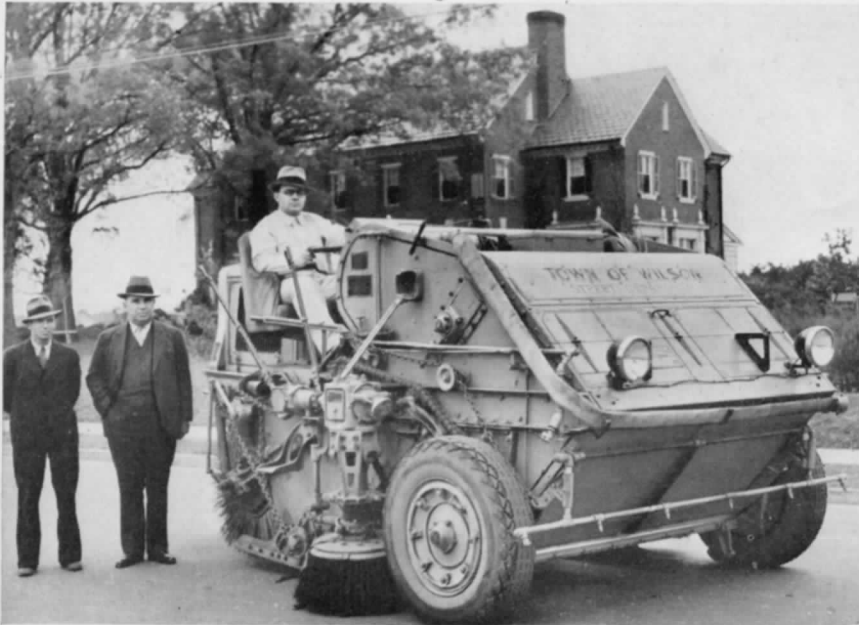
The proprietor shifted his position slightly and drawled: "Couldn't you come in some time when I'm standing up?"  
—*Montreal Star.*

Murphy has been careless in handling the blasting powder in the quarry, and Duffy had been delegated to break the news gently to the widow.

"Mrs. Murphy," said he, "isn't it today the fellow calls for the weekly payment on Murphy's life insurance?"

"It is," answered Mrs. Murphy.  
"Well, now, a word in your ear," said Duffy. "Sure, ye can snap your fingers at the fellow today."  
—*Woman's World.*

# THE STREET CLEANER



## STARTING A CAREER OF USEFULNESS

After using one of the earlier model ELGINS for several years, officials of Wilson, N. C. decided that the way to real economy in street cleaning lay with Model D ELGIN. Superintendent of Streets J. D. Blount (left) and City Manager W. M. Wiggins have just inspected their new Model D as it starts on its first trip. B. A. Harrell is at the wheel.

The cost per week is then plotted on the chart.

A rising curve means that, for the amount collected during a given week, more men or equipment were used than in the preceding weeks and an effort to regulate this can be made the next week. It requires but three hours work weekly to compute with slide rule the cost per cubic yard for each operation in each of the 16 collection districts in the city.

This method is designed not for the purpose of determining the exact cost of operation but rather to indicate whether or not the costs are rising. As an aid and guide for the purpose of lowering costs, Mr. Flockhart states that it has been very successful for many years.

## What Wonders a Little Paint Will Do

Two cities that are convinced that it's good business not only to keep equipment in a good state of repair but to keep it looking "up to snuff" as well are Youngstown, Ohio and Warren, Ohio.

As an evidence of this, Martin Dunn, Superintendent of Streets in Youngstown has just recently had both his ELGINS repainted in splendid shape with aluminum paint, lettered in black. Now, gleaming in their coat of new paint, they are working two regular 8-hour shifts daily.

In Warren, Charles Craig, Superintendent of Streets, who, by the way, has just completed 31 years of service in his city's Street Department, has just finished putting his ELGIN and AUTO-EDUCTOR in ship-shape by having them spruced up by a new coat of paint. This AUTO-EDUCTOR, incidentally, although in its fourteenth year of service, is still doing a good job every day.

## Cost-Control Chart In Newark

In describing the use of the cost-control chart for determining the cubic yard cost for removal of refuse material, John S. Flockhart, Assistant Engineer, Bureau of Street Cleaning, Newark, N. J., says that the chart used by his department for this purpose is plotted on ordinary cross section paper. Data are compiled at the

end of each week on (1) the number of man hours used in bringing material from the back yard to the curb, (2) number of man hours used in loading material onto the trucks, (3) number of truck days and team days of equipment.

Labor is paid at the rate of \$4.56 per day, cost of a truck is figured at \$25.00 per day and of a team at \$9.00 per day. This cost is divided by the number of cubic yards collected and the cost per cubic yard arrived at.



## PORT CHESTER LINES UP ITS FLEET OF ELGIN EQUIPMENT

When Port Chester, N. Y., installed its GARBAGE-GETTER (shown at the left) a short time ago, it rounded out its line of ELGIN equipment. Here we have the complete ELGIN line owned by this progressive community. Next to the GARBAGE-GETTER is the Model D ELGIN, followed by one of the earlier model ELGINS. At the right is shown the AUTO-EDUCTOR.



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## Speaking of Weighty Problems

Many and varied are the problems that face the Commissioner of Public Works in the course of the day's work, some of which can be straightened out only by virtue of the Commissioner's sense of humor. For instance, here's a complaint that the morning mail brought to one Commissioner's desk not long ago. Addressed to the Department of Public Works, it read as follows:

"I should like to compliment you for the condition you have put our street in. It certainly was a fine job. At No. 31 ——— Avenue, the water always stayed there after a rain for weeks at a time. You certainly remedied this—but now, at my home, No. 32 ——— Avenue, the water lies there instead of at No. 31. You have somehow transferred the condition right across the street to me. We never had a gutter hold any water until your department came along about two weeks ago and fixed the street. Now I get large puddles of water right at my curb which stays there. After last night's rain, our street today is nothing but water in front of our house. Could you kindly transfer this condition to some where else?"

## Getting the Most Out of a Machine

From time to time stories of unusual accomplishments of Model D ELGIN come to us, all of which prove very interesting. One which reached us recently and which is of far more than passing interest comes from Columbus, Ohio, where under the administration of Mayor H. W. Worley and Service Director William Lucks, Superintendent of Streets M. B. Cain has been operating a Model D for a little over a year now.

This spring, as usual, the problem of giving the streets their annual spring clean-up arose. Although this work had been done by hand methods in previous years, Mr. Cain had an idea that it could be done more cheaply and effectively by using Model D.

During one week's operation, Model D cleaned 94.5 curb miles of street, picking up 150 cubic yards of dirt—over 1½ yards to the mile. The fact that these same streets yielded but 42 cubic yards when cleaned the following week shows what a heavy job Model D was faced with.

During another week of the spring "clean-up," Model D cleaned 116 curb miles, picking up 178 cubic yards of dirt.

All, of which, we submit, speaks mighty well both for Model D and for the manner in which Superintendent Cain manages his department.

## Denton, Texas, Believes In Adequate Education

The fact that residents of Denton, Texas, believe in adequate educational facilities is brought out by their tax analysis for 1934. With a rate of \$1.60, this analysis shows that \$1.00 of this amount, or 62½%, is used for public school maintenance and school building improvements.

This enterprising city has reduced tax valuation from \$7,500,000 in 1932 to \$6,233,650 in 1933—approximately 20%—while the tax rate has been steadily reduced since 1927 when it was \$2.07. The 1933 rate was \$1.75.

An unusually fine municipal light and power plant under the capable management of City Engineer W. N. Harris is partially responsible for this fine showing.

Further study of this analysis shows that refunding 1927 bonds takes 26c of the \$1.60, while streets and bridges require 30c. Apparently Denton is interested only in "live" ones as they spend only .02c of each \$1.60 for cemeteries.

## Constructive Economy In Upper Darby, Pa.

The annual report of the Highway Department of Upper Darby Township, Pa., for 1933 has this to say regarding the importance of keeping streets in a good state of repair:

"The maintenance of our township highways is a continuous problem which cannot be solved by giving our roads a double amount of attention next year or the year after to compensate for what we neglect doing this year. A road pitted with small holes today will be almost impassable within a few weeks. As deterioration is cumulative, street repairs cannot be postponed.

"Our local government has been subjected to terrific pressure from all sides to reduce expenditures. Those who are really interested in the welfare of our community will be the first to see the fallacy in attempting to make savings by reducing highway activities. The safety and convenience of our residents and the accessibility of our retail business districts are dependent upon clean well-paved streets."



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