CANADA
DEPARTMENT OF MINES
HON. W. A. GORDON, MINISTER CHARLES CAMSELL, DEPUTY MINISTER

MINES BRANCH
JOHN MCLEISH, DIRECTOR

# Petroleum Fuels in Canada

## Deliveries for Consumption

## Calendar Year

## 1933

PREPARED BY

John M. Casey

(Issued by the Mines Branch, Department of Mines, in Co-operation with the Dominion Fuel Board)



OTTAWA
J. O. PATENAUDE
PRINTER TO THE KING'S MOST EXCELLENT MAJESTY
1935

No. 759

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*Price, 10 cents* **No. 759**

# PETROLEUM FUELS

For some years the Mines Branch has been collecting information regarding the deliveries of fuel oil, kerosene, and petroleum coke in Canada, in order to ascertain what amounts of these commodities were being delivered to be used as fuel for steam-raising, for heating, and for power purposes, as distinguished from the amounts delivered for other miscellaneous purposes.

During the calendar year 1933, deliveries of petrolum products for fuel purposes amounted to 889, or, including the 56 consumed in refineries, to 945 million Imperial gallons, consisting of 419 of fuel oil, 42 of kerosene, and 484 of gasoline; over 82 thousand short tons of petroleum coke were also delivered (and consumed in refineries) for fuel.

The *weight* of these various volumes of fuel can only be estimated in the absence of precise information regarding the specific gravity of the numerous grades of oil under each class. Assuming specific gravity ratings of 0·933 for fuel oil, 0·810 for kerosene, and 0·739 for gasoline, there were about 1·95 million short tons of fuel oil, 0·17 million tons of kerosene, and 1·79 million tons of gasoline delivered for fuel during 1933.

Disregarding the question whether or not these be replaceable by coal, on the basis of the relative calorific values of petroleum products and of coal, it is estimated that the total *heat value* of each group of products is equivalent to the latter in the following amounts: fuel oil, to 2·85; kerosene, to 0·26; gasoline, to 2·75; and coke, to 0·09 million short tons.

The following comparative summaries show: (1) the gallonages of petroleum fuels marketed in Canada during the calendar years 1933 and 1932, together with their estimated weights and coal equivalents; and (2) the amounts distributed in each of the provinces.

TABLE I

**Petroleum Fuels Marketed in Canada, by Classes**

*(Units: Millions of gallons and of short tons)*

| Class | Calendar Year 1933 | | | Calendar Year 1932 | | |
|---|---|---|---|---|---|---|
| | Imperial gallons | Rated weight, *tons | Rated heat values (in coal), **tons | Imperial gallons | Rated weight, *tons | Rated heat values (in coal), **tons |
| Fuel oil | †419 | 1·95 | 2·85 | †442 | 2·06 | 3·01 |
| Kerosene | 42 | 0·17 | 0·26 | 45 | 0·18 | 0·28 |
| Gasoline | 484 | 1·79 | 2·75 | 501 | 1·85 | 2·85 |
| Coke | ..... | 0·08 | 0·09 | ..... | 0·09 | 0·10 |
| **Total** | †945 | 3·99 | 5·95 | †988 | 4·18 | 6·24 |

†Includes refinery consumptions: of 56 in 1933, and 53 in 1932.

*Rates of conversion*—

| | Specific gravity | | Degree A.P.I. | | Weight | Gravity *range* of each class: Specific gravity | | Degrees A.P.I. | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Fuel oil at | 0·933 | or | 20·0° | or | 9·33 lb./gal. | 1·000+ | to 0·818 | or | 10°– to 41° | Fuel oil |
| Kerosene at | 0·810 | or | 43·2° | or | 8·10 " | 0·816 | to 0·793 | or | 42° to 47° | Kerosene |
| Gasoline at | 0·739 | or | 60·0° | or | 7·39 " | 0·760 | to 0·680 | or | 55° to 77° | Gasoline |

The *degree A.P.I.* refers to the reading on the Baumé specific gravity scale adopted by the American Petroleum Institute, and widely used in the oil trade.

**Rates of conversion*—Calorific values in B.T.U.'s per pound, are rated as follows: fuel oil at 19,000, kerosene and gasoline at 20,000, coal at 13,000, and petroleum coke at 15,000.

TABLE II

**Petroleum Fuels Marketed in Canada, by Provinces**

*(Million Imperial gallons—Calendar years)*

| Province | Fuel oil | Kerosene | Gasoline‡ (motor fuel) | Total | Per cent | Coke†† |
|---|---|---|---|---|---|---|
| **1933** | | | | | | |
| N.B. and P.E.I. | 6 | 2 | 15 | 23 | 2 | 0·4 |
| Nova Scotia | 23 | 2 | 19 | 44 | 5 | |
| Quebec | 111 | 6 | 87 | 206 | 23 | 2·2 |
| Ontario | 70 | 10 | 228 | 308 | 35 | 61·5 |
| Manitoba | 6 | 4 | 24 | 34 | 4 | Nil |
| Saskatchewan | 10 | 8 | 32 | 50 | 5 | 18·1 |
| Alberta | 11 | 9 | 40 | 60 | 7 | |
| British Columbia | 126 | 1 | 39 | 166 | 19 | Nil |
| **Total** | †363 | 42 | 484 | †889 | ..... | 82·2 |
| Per cent | 41 | 5 | 54 | ..... | 100 | ..... |
| **1932** | | | | | | |
| N.B. and P.E.I. | 4 | 2 | 16 | 22 | 2 | 0·4 |
| Nova Scotia | 22 | 2 | 19 | 43 | 5 | |
| Quebec | 116 | 5 | 91 | 212 | 23 | 10·0 |
| Ontario | 69 | 8 | 234 | 311 | 34 | 67·4 |
| Manitoba | 5 | 6 | 26 | 37 | 4 | 16·0 |
| Saskatchewan | 9 | 13 | 34 | 56 | 6 | |
| Alberta | 13 | 7 | 41 | 61 | 6 | |
| British Columbia | 151 | 2 | 40 | 193 | 20 | |
| **Total** | †389 | 45 | 501 | †935 | ..... | 93·8 |
| Per cent | 41 | 5 | 54 | ..... | 100 | ..... |
| **1931** | | | | | | |
| N.B. and P.E.I. | 8 | 2 | 19 | 29 | 3 | 1·0 |
| Nova Scotia | 28 | 2 | 21 | 51 | 5 | |
| Quebec | 126 | 6 | 98 | 230 | 23 | 18·4 |
| Ontario | 66 | 12 | 250 | 328 | 32 | 40·8 |
| Manitoba | 5 | 6 | 30 | 41 | 4 | 20·0 |
| Saskatchewan | 5 | 11 | 49 | 65 | 6 | |
| Alberta | 11 | 11 | 44 | 66 | 7 | |
| British Columbia | 150 | 2 | 45 | 197 | 20 | |
| **Total** | †399 | 52 | 556 | †1,007 | ..... | 80·2 |
| Per cent | 40 | 5 | 55 | ..... | 100 | ..... |
| **1930** | | | | | | |
| N.B. and P.E.I. | 11 | 2 | 19 | 32 | 3 | Not complete |
| Nova Scotia | 21 | 2 | 19 | 42 | 4 | |
| Quebec | 122 | 6 | 89 | 217 | 21 | |
| Ontario | 80 | 13 | 243 | 336 | 32 | |
| Manitoba | 6 | 5 | 36 | 47 | 4 | |
| Saskatchewan | 7 | 8 | 77 | 92 | 9 | |
| Alberta | 16 | 7 | 52 | 75 | 7 | |
| British Columbia | 162 | 2 | 47 | 211 | 20 | |
| **Total** | †425 | 45 | 582 | †1,052 | ..... | ..... |
| Per cent | 40 | 4 | 56 | ..... | 100 | ..... |

†Excludes 56 of fuel oil consumed in oil refineries in 1933, 53 in 1932, 55 in 1931, and 59 in 1930. ††Thousand short tons of petroleum coke fuel. ‡Data on gasoline are quoted from the Dominion Bureau of Statistics' reports on *The Highway and Motor Vehicle in Canada.*

The data on petroleum fuels under the headings of fuel oil, kerosene, and coke were prepared from reports submitted to the Mines Branch by firms engaged in the oil trade, namely: refiners' marketing departments, oil brokers and jobbers, and also from information received from known importers and consumers of similar products from abroad. Care was taken to avoid possible gallonage duplication, and also, when necessary, to apportion the total amounts reported to their separate usages.

For the generation of heat or power, all grades of hydrocarbons from gaseous to solid are burnt as fuel, but in the trade the term "fuel oil" is restricted to the heavier liquids so used, which although safe as regards fire or explosion, are sufficiently fluid for flow under conditions of use. Tentative standard specifications of the various grades of fuel oil in commercial use are not based on specific gravity, but for the purpose of this report, it is desirable to group under the generic term "fuel oil" all grades of petroleum or its products used as fuel that are heavier than 42° A.P.I. Oils under this heading are described in the trade as heavy, medium, or light oils, and delivered largely for steam-raising, power, and heating. Residual, bunker, and Diesel grades are included with the heavy oils; medium oils consist mostly of furnace grades and semi-Diesel; while light oils also include gas-oil, distillate, stove and range grades. In so far as they have been reported, these last three were not always sharply defined from kerosene. Discard and waste oils within this range, whether re-refined or not, and liquid by-products of coal are excluded from the table.

Kerosene or "refined oil of petroleum" consists of the white or amber grades ranging between 42° and 47° A.P.I., and generally sold for small heating and lighting, or for use in the heavier type of automotive or other internal combustion engine. Gasoline comprises those grades having 55° A.P.I. or lighter as their gravity, and sold extensively for light automotive and aerial work.

Table III is a summary statement showing deliveries of fuel oil in the provinces during the past four years as reported by distributors and importers. Over 81 per cent of the 1933 total was processed in Canadian refineries, the remainder consisting of imported fuel oil. This table is amplified in Table IV, which records the portions delivered to a category of consumers for specific purposes. In 1933, domestic heating accounted for 27 per cent of the total, industrial heating 21 per cent, tractor fuel $3\frac{1}{2}$ per cent, and locomotive and bunker fuel over 49 per cent.

TABLE III

**Comparative Summary of Fuel Oil Deliveries, by Provinces**

*(Prepared from distributors' and importers' reports—Calendar years)*

| Area | Product of Canadian refineries | Product of foreign refineries (importations) | **Total fuel oil delivered** | Respective percentages of total | | |
|---|---|---|---|---|---|---|
| **1933** | Imperial Gallons | | | | | |
| N.B. and P.E.I. | 5,444,288 | 700,051 | **6,144,339** | *1·5* | *0·2* | **1·7** |
| Nova Scotia | 23,281,226 | 51,900 | **23,333,126** | *6·4* | ..... | **6·4** |
| Quebec | 92,117,908 | 18,558,693 | **110,676,601** | *25·4* | *5·1* | **30·5** |
| Ontario | 65,782,165 | 4,025,970 | **69,808,135** | *18·1* | *1·2* | **19·3** |
| Prairies | 25,997,473 | 987,553 | **26,985,026** | *7·2* | *0·2* | **7·4** |
| British Columbia | 82,608,346 | 43,071,570 | **125,679,916** | *22·8* | *11·9* | **34·7** |
| **Total** | †295,231,406 | 67,395,737 | †362,627,143 | **81·4** | **18·6** | **100·0** |
| Inventory Dec. 31 | ..... | ..... | **112,102,691** | ..... | ..... | ..... |
| **1932** | | | | | | |
| N.B. and P.E.I. | 3,312,022 | 729,704 | **4,041,726** | *0·8* | *0·2* | **1·0** |
| Nova Scotia | 20,623,563 | 1,010,829 | **21,634,392** | *5·3* | *0·3* | **5·6** |
| Quebec | 94,291,069 | 21,736,303 | **116,027,372** | *24·2* | *5·6* | **29·8** |
| Ontario | 63,374,257 | 5,345,414 | **68,719,671** | *16·3* | *1·3* | **17·6** |
| Prairies | 27,465,639 | 464,707 | **27,930,346** | *7·1* | *0·1* | **7·2** |
| British Columbia | 101,784,060 | 49,268,881 | **151,052,941** | *26·1* | *12·7* | **38·8** |
| **Total** | †310,850,610 | 78,555,838 | †389,406,448 | **79·8** | **20·2** | **100·0** |
| Inventory Dec. 31 | ..... | ..... | *83,213,613 | ..... | ..... | ..... |
| **1931** | | | | | | |
| N.B. and P.E.I. | 8,452,443 | 62,178 | **8,514,621** | *2·1* | ..... | **2·1** |
| Nova Scotia | 27,516,470 | Nil | **27,516,470** | *6·9* | *Nil* | **6·9** |
| Quebec | 104,421,926 | 21,810,513 | **126,232,439** | *26·1* | *5·5* | **31·6** |
| Ontario | 60,281,042 | 6,064,986 | **66,346,028** | *15·1* | *1·5* | **16·6** |
| Prairies | 19,602,390 | 1,557,980 | **21,160,370** | *4·9* | *0·4* | **5·3** |
| British Columbia | 109,258,219 | 40,385,527 | **149,643,746** | *27·4* | *10·1* | **37·5** |
| **Total** | †329,532,490 | 69,881,184 | †399,413,674 | **82·5** | **17·5** | **100·0** |
| Inventory Dec. 31 | ..... | ..... | **91,433,877** | ..... | ..... | ..... |
| **1930** | | | | | | |
| N.B. and P.E.I. | 11,082,339 | 390,241 | **11,472,560** | *2·6* | *0·1* | **2·7** |
| Nova Scotia | 20,130,911 | 568,743 | **20,699,654** | *4·8* | *0·1* | **4·9** |
| Quebec | 103,345,729 | 18,958,438 | **122,304,167** | *24·3* | *4·5* | **28·8** |
| Ontario | 72,759,774 | 7,024,782 | **79,764,556** | *17·1* | *1·7* | **18·8** |
| Prairies | 26,740,258 | 1,506,754 | **28,247,012** | *6·3* | *0·3* | **6·6** |
| British Columbia | 117,809,429 | 44,529,542 | **162,338,971** | *27·7* | *10·5* | **38·2** |
| **Total** | †351,848,440 | 72,978,500 | †424,826,940 | **82·8** | **17·2** | **100·0** |
| Inventory Dec. 31 | ..... | ..... | **83,391,753** | ..... | ..... | ..... |

Fuel oil of all grades heavier than 42° A.P.I. processed from petroleum. Inventory at refineries, warehouses and jobbers' storages.

†Excludes 56,343,000 gallons in 1933; 53,459,000 gallons in 1932; 54,552,000 gallons in 1931; and 59,308,000 gallons in 1930, which were produced and used in Canadian refineries for fuel purposes.

*Revised.

TABLE IV

**Fuel Oil Deliveries: Specific Uses, by Provinces**

*(As reported by distributors and importers—Imperial gallons—Calendar years)*

| Area | Domestic and Building heating | | Industrial (and manufacturers') heating | Tractor fuel oil not lubricant | Railways: principally locomotive and shop fuel | Bunkering, includes distributors' tankers | **Total deliveries — Imperial gallons** | Per cent of yearly total |
|---|---|---|---|---|---|---|---|---|
| | Number domestic customers | Quantity | | | | | | |
| **1933** | | | | | | | | |
| N.B. and P.E.I. | 1,973 | 1,979,990 | 714,277 | 25,932 | 1,872,148 | 1,551,992 | **6,144,339** | *1·7* |
| Nova Scotia | 2,496 | 1,899,192 | 4,683,571 | 228,961 | 91,898 | 16,429,504 | **23,333,126** | *6·4* |
| Quebec | 19,505 | 44,252,995 | 16,045,348 | 22,242 | 528,076 | 49,827,940 | **110,676,601** | *30·5* |
| Ontario | *24,096 | 31,972,187 | 28,335,558 | 1,644,991 | 1,536,686 | 6,268,713 | **69,808,135** | *19·3* |
| Prairies | 1,409 | 3,156,964 | 3,583,911 | 10,426,241 | 7,818,010 | Nil | **26,985,026** | *7·4* |
| British Columbia | 3,742 | 13,795,430 | 19,024,953 | 282,575 | 37,642,560 | 54,934,398 | **125,679,916** | *34·7* |
| **Total, 1933** | **53,221** | **97,056,758** | **74,437,518** | **12,630,942** | **49,489,378** | **129,912,547** | **362,627,143** | **100·0** |
| **1932** | | | | | | | | |
| N.B. and P.E.I. | 577 | 1,358,518 | 791,489 | 4,608 | 252,987 | 1,634,124 | **4,041,726** | *1·0* |
| Nova Scotia | 663 | 1,350,858 | 4,734,042 | 14,503 | 107,611 | 15,427,378 | **21,634,392** | *5·6* |
| Quebec | 16,016 | 26,534,160 | 26,040,790 | 31,504 | 3,823,062 | 59,597,856 | **116,027,372** | *29·8* |
| Ontario | *15,640 | 31,677,078 | 25,786,791 | 3,837,542 | 2,132,088 | 5,286,172 | **68,719,671** | *17·6* |
| Prairies | 1,543 | 3,083,152 | 6,294,897 | 8,550,508 | 10,001,789 | Nil | **27,930,346** | *7·2* |
| British Columbia | 2,539 | 13,553,792 | 18,587,622 | 151,610 | 40,674,351 | 78,085,566 | **151,052,941** | *38·8* |
| **Total, 1932** | **36,978** | **77,557,558** | **82,235,631** | **12,599,275** | **56,991,888** | **160,031,096** | **389,406,448** | **100·0** |
| **1931** | | | | | | | | |
| N.B. and P.E.I. | 482 | 1,524,075 | 937,890 | 24,833 | 61,891 | 5,965,932 | **8,514,621** | *2·1* |
| Nova Scotia | 543 | 1,090,544 | 7,866,406 | Nil | 3,632,361 | 14,927,159 | **27,516,470** | *6·9* |
| Quebec | 13,760 | 29,074,288 | 28,426,161 | Nil | 1,427,334 | 67,304,656 | **126,232,439** | *31·6* |
| Ontario | *14,116 | 27,928,086 | 28,188,990 | 276,978 | 1,356,775 | 8,595,199 | **66,346,028** | *16·6* |
| Prairies | 1,548 | 2,575,362 | 7,237,848 | 3,291,445 | 8,055,715 | Nil | **21,160,370** | *5·3* |
| British Columbia | 1,986 | 11,057,901 | 36,162,617 | Nil | 43,211,857 | 59,211,371 | **149,643,746** | *37·5* |
| **Total, 1931** | **32,435** | **73,250,256** | **108,819,912** | **3,593,256** | **57,745,933** | **156,004,317** | **399,413,674** | **100·0** |

TABLE IV—*Concluded*

**Fuel Oil Deliveries: Specific Uses, by Provinces**—Concluded

*(As reported by distributors and importers—Imperial gallons—Calendar years)*—Concluded

| Area | Domestic and Building heating | | Industrial (and manufacturers') heating | Tractor fuel oil not lubricant | Railways: principally locomotive and shop fuel | Bunkering, includes distributors' tankers | **Total deliveries — Imperial gallons** | Per cent of yearly total |
|---|---|---|---|---|---|---|---|---|
| | Number domestic customers | Quantity | | | | | | |
| **1930** | | | | | | | | |
| N.B. and P.E.I. | Not complete | 1,306,787 | 855,937 | Nil | 68,841 | 9,241,015 | **11,472,580** | *2·7* |
| Nova Scotia | | 1,418,952 | 5,647,277 | Nil | 78,591 | 13,554,834 | **20,699,654** | *4·9* |
| Quebec | | 21,481,018 | 24,587,946 | 646,763 | 3,054,010 | 72,534,430 | **122,304,167** | *28·8* |
| Ontario | | 33,115,158 | 33,102,311 | 472,867 | 1,512,867 | 11,561,353 | **79,764,556** | *18·8* |
| Prairies | | 3,870,673 | 8,182,609 | 2,977,802 | 13,215,928 | Nil | **28,247,012** | *6·6* |
| British Columbia | | 13,182,978 | 42,947,383 | 209,135 | 55,797,810 | 50,201,665 | **162,338,971** | *38·2* |
| **Total, 1930** | ..... | **74,375,566** | **115,323,463** | **4,306,567** | **73,728,047** | **157,093,297** | **424,826,940** | **100·0** |
| Total, 1931 | 32,435 | 73,250,256 | 108,819,912 | 3,593,256 | 57,745,933 | 156,004,317 | **399,413,674** | 100·0 |
| Total, 1932 | 36,978 | 77,557,558 | 82,235,631 | 12,590,275 | 56,991,888 | 160,031,096 | **389,406,448** | 100·0 |
| Total, 1933 | 53,221 | 97,056,758 | 74,437,518 | 12,630,942 | 49,489,378 | 129,012,547 | **352,627,143** | 100·0 |
| Percentages— | | | | | | | | |
| 1930 | ..... | 17·5 | 27·1 | 1·0 | 17·5 | 36·9 | ..... | 100·0 |
| 1931 | ..... | 18·3 | 27·2 | 0·9 | 14·5 | 39·1 | ..... | 100·0 |
| 1932 | ..... | 19·9 | 21·1 | 3·2 | 14·7 | 41·1 | ..... | 100·0 |
| 1933 | ..... | 26·7 | 20·5 | 3·5 | 13·6 | 35·7 | ..... | 100·0 |

*Partially estimated.

Fuel oil includes all oils heavier than 42° A.P.I. processed from petroleum. Amounts recorded respectively for domestic, industrial, and tractor purposes were for actual CONSUMPTION within the areas indicated; those recorded under railways and bunkering were taken from, or accepted at delivery points within these areas, but were consumed by carriers where required.

## EXPLANATORY REMARKS ON TABLE IV

The number of DOMESTIC HEATING customers and the gallonages supplied to them exclusively for household uses in ranges and stoves, or for heating their homes, residences, apartments, institutions, offices, or other public buildings are shown in the first two columns. Also with the data are the portions reported by: railways, for heating stations, hotels, and cars; several industrial firms, for this class of heating; and distributors, for heating their own buildings. The number of domestic customers may equally be taken as an index of the minimum number of stoves, ranges, burners, and furnaces in use for this category of heating which accounted for about 27 per cent of the 1933 aggregate of all fuel oil deliveries.

*Distribution for Domestic Heating Purposes in Principal Cities.* More than 73 per cent of the Canadian deliveries for DOMESTIC HEATING purposes was effected in the principal undermentioned cities during 1933. The approximate gallonages reported by distributors were as follows (with number of users shown in brackets): Halifax 1,513,007 (2,159); Saint John and Charlottetown 1,329,274 (1,516); Greater Montreal 27,320,294 (13,914), Quebec City 3,266,171 (3,081), Three Rivers and Sherbrooke 872,318 (640), these last four points accounting for about 31½ million gallons, or 89 per cent of the province total. Ottawa 3,964,563 (1,885), Greater Toronto 13,873,126 (8,861), Hamilton 1,508,238 (1,100), and London 1,740,417 (1,341), which centres contributed over 21 million gallons, or 66 per cent of the Ontario total. Greater Winnipeg 2,037,599 (1,017); Regina, Moose Jaw, and Saskatoon 661,292 (287); Vancouver and New Westminster 11,431,447 (2,861), and Victoria 1,410,575 (560). Quebec City and Hamilton gallonages are believed to be somewhat understated, and those of Montreal and Toronto equally overstated.

The amount of fuel oil delivered for INDUSTRIAL and manufacturing consumption for fuel purposes is stated in column 3. Important users are the west coast pulp and paper mills; mills and plants for the production and tempering of steels, structural steel forms and steel goods; ore-reduction works, smelters and refineries for the recovery of base and precious metals; the heavy chemical, sugar-refining, liquor-distilling, and canning industries; electric power plants; and in lesser degree to mining companies and factories of all kinds. Deliveries of gas-oil for reduction to gas-fuels are also included, as also all fuel oil used by oil companies importing but not refining fuel oil in Canada. The volume of deliveries in each area is determined largely by the number of the specified industries located within such area. The large amount reported for British Columbia is due to the requirements of this province's large offshore and metallurgical industries.

Under TRACTOR fuel are given the amounts of fuel oil grading to about 42° delivered for fuelling tractor-engines. Oil distillate between 42° and 47° A.P.I. is omitted under this heading, and included with kerosene. The data exclude all Turner Valley light crude and natural naphtha which are also suitable for use for this purpose. About 10½ million gallons, or 82 per cent of the total volume used for tractor fuel, were delivered in the Prairie Provinces.

The quantities under RAILWAYS have been adjusted to exclude 2½ million gallons credited to Domestic Heating, and 3⅗ used in shops and boilers. The recorded balances, aggregating over 13½ per cent of the total Canadian deliveries, consisted largely of fuel for locomotives, rail motor-cars, and roundhouses. Fuel oil was also used for dredging, weed-burning, and other special uses.

The amount of fuel oil supplied for BUNKERING purposes from oil-fuelling stations within each of the given areas was slightly under 130 million gallons, or 36 per cent of all deliveries, and was mostly consumed

outside of Canadian waters, in steam and motor-ships operating on ocean, international and inland passenger and freight routes. Of the 1933 total, stations in British Columbia contributed 55, in Quebec 50, and in Nova Scotia 16½ million gallons.

Thus, rail and water transportations absorbed about half of the Canadian deliveries, accounting for 49 per cent of the 1933 total, 56 per cent of the total in 1932, and 54 per cent in 1931.

## KEROSENE

The refined fractions of petroleum having specific gravities between 0·816 and 0·793, or between their 42° and 47° Baumé A.P.I. equivalents, are grouped under kerosene. Included with the figures are all amounts of distillate oil reported ranging within these limits.

Deliveries during 1933 and previous years are shown in Table V, and in amount, were only one-eighth of the volume of fuel oil, or but one-twentieth of the aggregate of all petroleum fuels. In other words, of every 100 gallons of fuel oil, kerosene, and gasoline delivered during the past two years, there were but 5 of kerosene as compared with 41 of fuel oil and 54 of gasoline.

Kerosene is an important and widely used substitute for gas and electricity where these are not available; a common domestic and camp fuel for cooking, heating, and lighting; a signal oil in lighthouses and along steel right-of-ways; a fuel for light water-craft on inland and coastal waters; a material for cleaning large industrial machinery and other objects; but the major field of usage and consumption is as tractor fuel in power-farming. About 54 per cent of sales were reported delivered for heating, cooking, and lighting services as contrasted with amounts delivered for tractors, engines, and for all other purposes.

Yearly returns submitted by individual distributors disclose gradual mutual displacements of distillate and kerosene, observable particularly in Quebec and in the Prairies. The change in the eastern provinces is probably due to the much improved type of small domestic burner, stove, or range now obtaining, the later models being designed for burning the cheaper oil distillate as against refined kerosene, the common fuel of the older models.

In the Prairies, on the other hand, owing to consumer's choice of either for tractor fuel, and his purchasing power, the volume of kerosene delivered is being generally maintained, while amounts of other lighter distillates have been decreasing during the past few years.

The distillate marketed in eastern Canada is rarely lighter than 0·8180 or 42° Baumé A.P.I., whether used for heating or in tractors. The blended distillate used commonly in the west in tractors has, however, a gravity corresponding to that of gasoline, though some of the lighter kerosenes are also suitably used. In the Prairies, the demand for oil fuels for heating is negligible, in marked contrast to the requirements for this purpose prevailing in the east. In the matter of oil fuels for tractors, the positions are reversed.

The combined deliveries of kerosene and gasoline in the Prairies amounted to 118 million gallons in 1933, 126 in 1932, and 151 in 1931. Of these, kerosene contributed respectively 21, 25, and 28 million gallons, or 18 per cent, 20 per cent, and 18 per cent of the totals.

Deliveries of kerosene in 1933 for all-purpose uses in Canada were about 42 million gallons, of which 22½ or 54 per cent were for domestic heating purposes, 15½ million gallons or 37 per cent for tractor fuel, and the remainder, 3½ million gallons or 9 per cent, for other general uses.

TABLE V

**Comparative Summary of Kerosene Deliveries, by Provinces**

*(Prepared from distributors' and importers' reports—Imperial gallons—Calendar years)*

| Area | Product of Canadian refineries | Product of foreign refineries (importations) | **Total kerosene delivered** | Respective percentages of total | | |
|---|---|---|---|---|---|---|
| **1933** | | | | | | |
| N.B. and P.E.I. | 1,874,658 | 46,987 | **1,921,645** | *4·5* | *0·1* | **4·6** |
| Nova Scotia | 1,547,780 | 7,440 | **1,555,220** | *3·7* | ..... | **3·7** |
| Quebec | 5,300,011 | 176,369 | **5,476,380** | *12·7* | *0·4* | **13·1** |
| Ontario | 9,751,373 | 486,536 | **10,237,909** | *23·4* | *1·1* | **24·5** |
| Manitoba | 4,055,699 | 24,866 | **4,080,565** | *9·7* | *0·1* | **9·8** |
| Saskatchewan | 8,442,633 | Nil | **8,442,633** | *20·2* | *Nil* | **20·2** |
| Alberta | 8,602,477 | Nil | **8,602,477** | *20·6* | *Nil* | **20·6** |
| British Columbia | 1,133,924 | 298,155 | **1,432,079** | *2·7* | *0·8* | **3·5** |
| **Total, 1933** | **40,708,555** | **1,040,353** | **41,748,908** | **97·5** | **2·5** | **100·0** |
| **1932** | | | | | | |
| N.B. and P.E.I. | 1,987,262 | 41,135 | **2,028,397** | *4·5* | *0·1* | **4·6** |
| Nova Scotia | 1,695,750 | 6,848 | **1,702,598** | *3·8* | ..... | **3·8** |
| Quebec | 5,313,471 | 178,695 | **5,492,166** | *11·9* | *0·4* | **12·3** |
| Ontario | 7,124,812 | 1,123,256 | **8,248,068** | *16·0* | *2·5* | **18·5** |
| Manitoba | 5,682,700 | 37,759 | **5,720,459** | *12·7* | *0·1* | **12·8** |
| Saskatchewan | 12,808,088 | Nil | **12,808,088** | *28·7* | *Nil* | **28·7** |
| Alberta | 6,923,065 | 42,148 | **6,965,213** | *15·5* | *0·1* | **15·6** |
| British Columbia | 1,265,924 | 377,302 | **1,643,226** | *2·8* | *0·9* | **3·7** |
| **Total, 1932** | **42,801,972** | **1,807,143** | **44,608,215** | **95·9** | **4·1** | **100·0** |
| **1931** | | | | | | |
| N.B. and P.E.I. | 1,803,284 | 78,289 | **1,881,573** | *3·5* | *0·1* | **3·6** |
| Nova Scotia | 1,692,525 | 6,685 | **1,699,210** | *3·3* | ..... | **3·3** |
| Quebec | 5,558,600 | 792,510 | **6,351,110** | *10·8* | *1·5* | **12·3** |
| Ontario | 10,224,515 | 1,784,325 | **12,008,840** | *19·8* | *3·4* | **23·2** |
| Manitoba | 5,990,852 | 146,188 | **6,137,040** | *11·6* | *0·3* | **11·9** |
| Saskatchewan | 10,483,530 | 87,651 | **10,571,181** | *20·2* | *0·2* | **20·4** |
| Alberta | 11,184,511 | 231,255 | **11,415,766** | *21·6* | *0·5* | **22·1** |
| British Columbia | 1,288,145 | 362,512 | **1,650,657** | *2·5* | *0·7* | **3·2** |
| **Total, 1931** | **48,225,962** | **3,489,415** | **51,715,377** | **93·3** | **6·7** | **100·0** |
| **1930** | | | | | | |
| N.B. and P.E.I. | 2,120,047 | 195,834 | **2,315,881** | *4·7* | *0·4* | **5·1** |
| Nova Scotia | 2,075,259 | 2,186 | **2,077,445** | *4·6* | ..... | **4·6** |
| Quebec | 4,926,489 | 672,528 | **5,599,017** | *10·8* | *1·5* | **12·3** |
| Ontario | 11,062,182 | 2,209,080 | **13,271,262** | *24·4* | *4·9* | **29·3** |
| Manitoba | 5,173,669 | 262,151 | **5,435,820** | *11·4* | *0·6* | **12·0** |
| Saskatchewan | 7,572,183 | 102,554 | **7,674,737** | *16·7* | *0·2* | **16·9** |
| Alberta | 6,903,109 | 127,890 | **7,030,999** | *15·2* | *0·3* | **15·5** |
| British Columbia | 1,074,065 | 891,002 | **1,965,067** | *2·4* | *1·9* | **4·3** |
| **Total, 1930** | **40,907,003** | **4,463,225** | **45,370,228** | **90·2** | **9·8** | **100·0** |

TABLE VI

**Kerosene Deliveries: Specific Uses, by Provinces**

*(All oils ranging approximately between 42° and 47° A.P.I.)*

*(Imperial gallons—Calendar year, 1933)*

| Area | For domestic heating, cooking and lighting purposes | For fuel in tractors | For other general usage | **Total deliveries — Imperial gallons** | Per cent of total | Inventory, Dec. 31 | |
|---|---|---|---|---|---|---|---|
| | | | | | | 1932 | 1933 |
| N.B. and P.E.I. | 1,921,645 | Nil | † | **1,921,645** | *4·6* | 639,374 | 810,443 |
| Nova Scotia | 1,555,220 | Nil | † | **1,555,220** | *3·7* | 1,419,917 | 1,316,692 |
| Quebec | 4,373,603 | Nil | 1,102,777 | **5,476,380** | *13·1* | 2,843,605 | 4,347,076 |
| Ontario | 7,844,949 | 321,273 | 2,071,687 | **10,237,909** | *24·5* | 5,423,038 | 8,167,516 |
| Manitoba | 2,315,207 | 1,402,019 | 363,339 | **4,080,565** | *9·8* | 1,977,425 | 1,109,340 |
| Saskatchewan | 2,103,256 | 6,339,377 | †† | **8,442,633** | *20·2* | 1,524,654 | 2,370,994 |
| Alberta | 1,604,609 | 6,997,868 | †† | **8,602,477** | *20·6* | 877,190 | 1,398,760 |
| *Prairies* | *6,023,072* | *14,739,264* | *363,339* | *21,125,675* | *50·6* | *4,379,269* | *4,879,094* |
| British Columbia | 913,982 | 518,097 | †† | **1,432,079** | *3·5* | 1,079,976 | 909,759 |
| **Canada** | **22,632,471** | **15,578,634** | **3,537,803** | **41,748,998** | ..... | **15,785,179** | **20,430,589** |
| Per cent | *54·2* | *37·3* | *8·5* | ..... | *100·0* | ..... | ..... |

†Not separately reported. ††With tractor fuel.

TABLE VII

## Sales of Gasoline (and Motor Fuel), Canada, by Provinces‡

*(Gasoline or other named light-gravity motor fuel—generally of, or from petroleum; the gravity limit in any year, in any province, is 0·8017, or 45° A.P.I.)*

| Area | Thousands of Imperial gallons —Calendar years | | | | Percentages of total sales, Canada | | | |
|---|---|---|---|---|---|---|---|---|
| | †1933 | 1932 | 1931 | 1930 | 1933 | 1932 | 1931 | 1930 |
| **Total** Sold for ALL Purposes | | | | | | | | |
| N.B. and P.E.I. | 15,032 | 16,365 | 19,049 | 19,013 | 3·1 | 3·3 | 3·4 | 3·3 |
| Nova Scotia | 18,635 | 19,021 | 21,190 | 19,367 | 3·8 | 3·8 | 3·8 | 3·3 |
| *Maritimes* | *33,667* | *35,386* | *40,239* | *38,380* | *6·9* | *7·1* | *7·2* | *6·6* |
| Quebec | 87,078 | 91,128 | 97,608 | 88,849 | 18·0 | 18·2 | 17·5 | 15·2 |
| Ontario | 228,416 | 233,945 | 249,544 | 243,267 | 47·2 | 46·7 | 44·9 | 41·8 |
| Manitoba | 24,319 | 26,185 | 30,308 | 36,354 | 5·0 | 5·2 | 5·4 | 6·2 |
| Saskatchewan | 31,837 | 33,636 | 49,450 | 76,630 | 6·6 | 6·7 | 8·9 | 13·2 |
| Alberta | 40,300 | 41,300 | 43,478 | 51,676 | 8·3 | 8·2 | 8·0 | 8·9 |
| *Prairies* | *96,456* | *101,121* | *123,236* | *164,660* | *19·9* | *20·1* | *22·3* | *28·3* |
| British Columbia | 38,707 | 39,458 | 45,369 | 47,183 | 8·0 | 7·9 | 8·1 | 8·1 |
| **Canada** | **484,324** | **501,038** | **555,996** | **582,339** | **100·0** | **100·0** | **100·0** | **100·0** |
| Portions Sold for MOTORING Purposes (by difference) | | | | | | | | |
| N.B. and P.E.I. | 13,897 | 15,125 | 16,431 | 17,747 | 2·9 | 3·0 | 3·0 | 3·1 |
| Nova Scotia | 17,970 | 18,445 | 18,177 | 17,498 | 3·7 | 3·7 | 3·3 | 3·0 |
| *Maritimes* | *31,867* | *33,570* | *34,608* | *35,245* | *6·6* | *6·7* | *6·3* | *6·1* |
| Quebec | 80,508 | 84,652 | 91,817 | 83,467 | 16·6 | 16·9 | 16·5 | 14·3 |
| Ontario | 214,397 | 217,593 | 225,320 | 219,070 | 44·3 | 43·4 | 40·5 | 37·6 |
| Manitoba | 22,253 | 21,517 | 22,143 | 24,513 | 4·6 | 4·3 | 4·0 | 4·2 |
| Saskatchewan | 21,652 | 21,998 | 26,480 | 31,248 | 4·5 | 4·4 | 4·7 | 5·4 |
| Alberta | 27,482 | 30,220 | 24,746 | 36,722 | 5·6 | 6·0 | 4·4 | 6·3 |
| *Prairies* | *71,387* | *73,735* | *73,369* | *92,483* | *14·7* | *14·7* | *13·1* | *15·9* |
| British Columbia | 29,499 | 31,285 | 36,052 | 30,773 | 6·1 | 6·3 | 6·5 | 5·3 |
| **Canada** | †427,658 | **440,835** | **461,166** | **461,038** | 88·3 | **88·0** | **82·9** | **79·2** |
| Portions Sold for ALL OTHER Purposes (Amounts upon which Tax or part of the Tax was Refunded) For tractors, stationary engines for light or power, rail motor cars, air and water craft, industrial uses, etc. | | | | | | | | |
| N.B. and P.E.I. | 1,135 | 1,240 | 2,618 | 1,266 | 0·2 | 0·3 | 0·5 | 0·2 |
| Nova Scotia | 665 | 576 | 3,013 | 1,869 | 0·1 | 0·1 | 0·6 | 0·3 |
| *Maritimes* | *1,800* | *1,816* | *5,631* | *3,135* | *0·3* | *0·4* | *1·1* | *0·5* |
| Quebec | 6,570 | 6,476 | 5,791 | 5,382 | 1·4 | 1·3 | 1·0 | 0·9 |
| Ontario | 14,019 | 16,352 | 24,224 | 24,197 | 2·9 | 3·3 | 4·4 | 4·2 |
| Manitoba | 2,066 | 4,668 | 8,165 | 11,841 | 0·4 | 0·9 | 1·5 | 2·0 |
| Saskatchewan* | 10,185 | 11,638 | 22,970 | 45,382 | 2·1 | 2·3 | 4·1 | 7·8 |
| Alberta | 12,818 | 11,080 | 18,732 | 14,954 | 2·7 | 2·2 | 3·3 | 2·6 |
| *Prairies* | *25,069* | *27,386* | *49,867* | *72,177* | *5·2* | *5·4* | *8·9* | *12·4* |
| British Columbia | 9,208 | 8,173 | 9,317 | 16,410 | 1·9 | 1·6 | 1·7 | 2·8 |
| **Canada** | †56,666 | 60,263 | 94,830 | 121,301 | 11·7 | 12·0 | 17·1 | 20·8 |

†Provisional. *Estimated.

‡These data are quoted from the Dominion Bureau of Statistics' annual reports on *The Highway and the Motor Vehicle in Canada*. The amounts recorded for each province were reported directly by the several provincial Tax departments to the Bureau, and are to be interpreted subject to the provisions effective each year in each province, particularly as to amounts sold, but subject to refund. For this reason the yearly gallonages under each purpose-use are not comparable, and are more or less estimates. Moreover, they do not include fuel evading the Tax levy.

## PETROLEUM COKE

This hard, dull residue of distillation, apart from being an excellent fuel for which it is considerably used in domestic and industrial heating, is also a valued component of electric batteries, carbon lamps, crucibles, and other articles of manufacture. Coke known to have been used in Canadian plants for this last purpose has been omitted from the tonnages shown in the following table, which records only the amounts sold or used for fuel. A large tonnage is also exported annually for use as material.

The Ontario total shown under DOMESTIC HEATING includes a large quantity of a patent fuel manufactured at Toronto, and marketed as *"Petro-Blox."* These are dry, machine-pressed, packaged blocks (each 3 by 3 by 4 inches and weighing about 2 pounds) compounded from crushed petroleum coke (between 90 and 95 per cent), binder, and water.

Tonnages reported under INDUSTRIAL HEATING were largely consumed as fuel in refineries.

TABLE VIII

**Petroleum Coke, Calendar Years, Short Tons**

| Area | Fuel for Domestic heating† | Fuel for Industrial heating‡ | **Total short tons** | Inventory Dec. 31† |
|---|---|---|---|---|
| Maritimes | 383 | Nil | **383** | Nil |
| Quebec | 759 | 1,456 | **2,215** | 9,456 |
| Ontario | 48,286 | 13,170 | **61,456** | 5,871 |
| Western provinces | 5,402 | 12,945 | **18,149** | 10,658 |
| Canadian | 44,798 | 27,571 | **72,369** | 16,137 |
| Imported | 9,834 | Nil | **9,834** | 9,848 |
| **Total, 1933** | **54,632** | **27,571** | **82,203** | **25,985** |
| Total, 1932 | 57,634 | 36,189 | **93,823** | * 42,023 |
| Total, 1931 | 32,439 | 47,757 | **80,196** | 53,160 |

†As reported by coal dealers, distributors, and importers; inventory includes stocks nt refineries. ‡Consisting mostly of amounts used in refineries as fuel. *Revised.

~~Casey, John M. Petroleum~~
Fuels in Canada; Deliveries
~~for Consumption, Calendar~~
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