ON THE COVER:

Imperial Oil field geologists searching for oil in the Alberta foothills use many methods of transportation. Our cover picture shows assistant geologist Stanley Mountin, who is looking for a likely spot along a nearby stream to launch the canoe carried on the car roof.

Pipe line walker John Gold climbs a fence as he walks from Turner Valley to Calgary looking for evidence of leaks in the line which is under several feet of earth.

Most people spend the summer trying to keep cool but in these sunny months the oil industry on this continent is deeply concerned with the problem of how to get more heat for homes and factories next winter.

The winter demand for oil products is greater than ever before because so many people have turned to oil for heating.

There seems to be no limit to the amount of oil demanded by our mechanized civilization—each year’s consumption exceeds that of the preceding year. Experts predict that the demand for oil products will be even greater next winter than it was last. They warn that the oil supply will continue to be tight for at least another year and that last year’s problems may be repeated.

H. H. Hewetson, president of Imperial Oil, referred to this at the Company’s annual meeting. He said: "As far as Canada is concerned, being so largely dependent on importations of crude oil and products, the supply situation is hardly different from what it was a year ago when I suggested that consumers installing new domestic oil burners have dependable assurance of supply."

"I repeat this caution again for the coming winter, for while it is early yet to predict the situation next fall there are factors to be considered that are beyond our control and only when we have ample products stored away in Canada to augment anticipated winter operations can we confidently expand to some extent the home heating fuel market. I am pleased that during the last heating season we were able to care for our regular customers and our objective is to do so again this winter and this at least I feel we shall be able to do."

Oil reserves in the ground are adequate to meet North American requirements but they must be developed. How much petroleum can be obtained for the winter’s needs depends on the speed with which the industry can expand its producing, refining and distribution facilities.

Imperial’s expansion program is making progress. The Leduc field is being developed rapidly; the new Edmonton refinery is in operation; the modernization of Montreal East Refinery is almost complete; new tankers are sailing the lakes and there are many other improvements.

In the long, hot days of summer the oil industry is marking up new records in its race to make ready for the demands of next winter.
Where the Money Goes

In its accounting of receipts and expenditures the annual report tells the story of the problems faced by the oil industry in the post-war world and reflects a year of exceptional achievement by Imperial Oil Ltd.

"Talking of axes", said the Duchess, "Chop off her head!" Alice glanced rather anxiously at the cook, to see if she meant to take the hint; but the cook was busily stirring the soup and seemed not to be listening, so Alice went on again:

"Twenty-four I think; or is it twelve? I..."

"Oh, don’t bother me!" said the Duchess, "I never could abide figures!"

And so poor Alice, silenced in this abrupt manner, learned that statistics are no more popular in Wonderland than they are in our everyday world. Like the Duchess, few of us give figures the attention they deserve but we are all just as concerned with the question of where the money goes as any company president or professor of economics. No matter what our work may be, we must know the balance between the money we spend and the money we receive for our efforts.

Industries try to answer this all-important question in annual reports which show a company’s financial position and also summarize the year’s activities. If we look beyond the columns of figures in Imperial Oil’s annual report for 1947, we find that, far from being dull, it reveals the story of a great enterprise in a year of exceptional achievement.

Imperial’s report presents the financial facts that reflect this achievement. It also indicates that the Company, like Canadian citizens everywhere, was caught in the general trend of mounting costs, shortages of supplies and other difficulties.

Many companies, whether large or small, have shared the same problems. The Gasoline Alley cartoonist has summarized some of them in a lighter vein in the comic strip which appears on this page. When Sosaxx gave his accounting for the 1947 operations of his little company, he was speaking of the troubles that confront business generally. Imperial is like Wallett & Bobble in that it conducted a much larger volume of business in 1947; the largest in fact in its entire history; it made essential additions to its plants; most Imperial employees
SALES RECEIPTS, COSTS AND PROFITS OF IMPERIAL OIL LIMITED FOR THE YEAR 1947

In 1947 Imperial Oil Limited made a profit of $15,903,866 from the sale of petroleum products. This profit is made up of sales totaling $290,602,389, of which $165,903,866 is attributed to the sale of crude oil and other raw materials.

The cost of crude oil and other raw materials was $147,758,406. The cost of manufacturing and packaging was $26,915,678. The cost of freight was $29,447,882. The cost of distributing and selling was $24,544,738.

The taxes paid include taxes on property, income taxes, and excise taxes. The profit after taxes was $24,698,473, leaving an operating profit of $15,903,866.

When an individual reads that Imperial has made a profit of $15,903,866 from the sale of petroleum products it sounds like a staggering amount but it is only 6.10 per cent of $290,602,389 total dollar sales. Further, this figure must be considered in the light of the use that will be made of it: an investment in Canada’s future and the necessity of profits to carry on a business.

Profits are a sign of a healthy enterprise and need no apology; they stimulate production, provide jobs, reduce prices and raise the standard of living. In the oil industry it takes many years of profits to pay for a new plant or refinery and to conduct exploratory operations.

If there were no profits in the oil industry, the results would be just as unhappy as Mr. McIvor describes. The worker would suffer because profitless firms cannot pay good wages. The general public would suffer since investors would be reluctant to risk their money in a firm that didn’t pay dividends and so the necessary capital would be lacking to carry on the search for oil.

Today, more than ever before, risk capital is needed to develop Canada’s vast natural resources. If Canadians are to continue the industrial progress they made during the war years they must be assured of an adequate supply of oil. But the oil business is an expensive proposition. Millions of dollars must be spent in exploration and drilling before oil can even be found. When it is found many more millions must be spent in producing, refining and transportation. Imperial’s investment in plant and equipment alone amounts to over $15,000 per employee.

THE COST OF LIVING HAS INCREASED BUT THE COST OF DOING BUSINESS HAS INCREASED EVEN MORE

Compared with the immediate pre-war years a dollar spent by the housewife in 1947 bought goods worth 72c while a dollar spent by industry had a purchasing power of only 64c.

THE PURCHASING POWER OF CONSUMER’S DOLLAR

* 1947

37.5

$1.00

THE PURCHASING POWER OF INDUSTRIAL DOLLAR

* 1947

64.2

$1.00

A profit of 96c/100 of one cent per gallon

LABOR

CONSTRUCTION

RAW MATERIALS

MATERIALS

MARKETING

TAXES

PROFITS

4.42%

8.07%

6.10%

10.33%

9.42%

3.07%

8.07%

9.42%

10.33%

6.10%

4.42%
The success of Leduc is a source of great satisfaction to the Company. It will benefit the country as a whole by helping to reduce oil imports and thereby conserving valuable U.S. dollars. At the Company’s annual meeting, held in Edmonton, Imperial’s president, H. H. Hewes, told shareholders that “over the next four years we estimate that Leduc will replace $126 million to $150 million worth of crude which would otherwise have to be bought with U.S. dollars. That is indeed a real relief in a difficult situation and is of benefit to every Canadian.”

The discovery of oil at Leduc will also mean cheaper petroleum products for the prairies in the near future. It does not mean, however, that the Company can relax in its efforts to find new sources of oil. Since oil taken from the ground cannot be replaced, there must be a never-ending search for new fields and Imperial is actively engaged in exploratory activities in many parts of the country.

In terms of actual gallons of petroleum products manufactured and sold, 1947 was a record year for the Company. The total sale of all petroleum products amounted to 47,405,761 barrels, an increase of 20 per cent. over 1946. Refinery facilities were operated at the highest possible rate and approximately 2,600,000 more barrels of crude oil were processed than in the previous year. Despite this fact, the Company still had to import 6,367,743 barrels of refined products to meet the demand.

To help quench Canada’s oil thirst, Imperial has been expanding its facilities and replacing worn-out equipment as quickly as building supplies become available. At Montreal East, a fluid catalytic cracking unit 195 feet high, the first of its kind in Canada, is nearing completion. The Edmonton refinery, which was moved from Whitehorse for re-location at Edmonton, started operations in July and will be in full use by the end of the year. A pipe line was laid between the Leduc field and the railway point of Nisku; two ocean-going tankers were bought, two lake tankers were launched and additional tank cars were obtained. During the war of course, restrictions were placed on all building and so the Company had a considerable backlog of work.

This expansion naturally required a tremendous outlay of capital (the figure rose from a little over $4 million in 1939 to over $20 million in 1946 and to nearly $24 million in 1947). Plans for expansion had been made before the end of the war but with building costs and raw materials greatly inflated, the Company had to revise its budget upward.

In normal times, the money set aside to replace worn-out equipment would be sufficient; but today, with prices doubled and even trebled, it is totally inadequate. It is as though a farmer bought a tractor before the war for $800 and then set aside $80 a year to buy a new one when the first was worn out. But today, the tractor that cost him $800 ten years ago, is valued at $1,500 and he will have to make up the difference from his savings or borrow the money.
The development program carried on last year will be continued. Scientific research will be intensified to bring better products at minimum cost to the Canadian public.

While the success at Leduc has given encouragement to the Canadian oil industry, more Leducs are needed if this country is to continue to expand and grow. Reasonable profits, coupled with sound business practices and stable governmental regulations will ensure the development of Canada's natural resources.

In talking to his associate Skojevic said: “We've all got to pitch in and do an even better job than in 1947. I hope so can.” Imperial’s directors believe that the Company has the opportunity to all phases of its business.

**Fuels of the Future**

The synthetic production of petroleum is still too costly to be practical for today's needs but it will serve later generations.

Every year more petro-producers raise their voice in the land to declare the world is running out of oil. Recently, because demand for all products has sky-rocketed beyond the capacity of the industry's transportation, refining and other facilities, these prophets have been crying more noisily than usual. This situation has aroused special interest in the work of scientists who are experimenting with substitations for crude-oil as a source of gasoline and other fuels. Their success with syntheses has been publicized to the point where the public may make the mistake of thinking if the entire annual output of crude-oil was replaced by a synthetic fuel none of the petroleum products would be available.

The truth is that synthetic production of petroleum still stirs uneasiness because of the experimental stage. This is in spite of the facts that science can produce substances for crude-oil and that the process has been improved step by step, so that if the world ever ran short of natural-petroleum-syntheses will come to the rescue.

But at present there is still plenty of crude oil. Oil fields are diminishing slowly as the oil is taken from the earth and new fields must be discovered and they are becoming more difficult to locate but today's great exploration program is finding new deposits. The present situation is not due to any lack of oil in the earth. It has developed as the result of the combination of an unprecedented demand for all products coupled with the above difficulty of the petroleum industry to obtain enough equipment to produce, process and transport oil products in such vast quantities.

The erection of synthetic plants would not solve the present petroleum problems of supply. Syntheses, however, will provide fuels in the future and is important in this connection because of considerations of national defense. Since the war research workers in the United States have been applying newly developed techniques to the process discovered 20 years ago by two German scientists working in the Kaiser Wilhelm laboratories.

Franz Fischer and Hans Vogel had spent years in trying to find a practical way to make gasoline from coal. The result of all their work may be expressed in a relatively simple chemical formula showing how carbon monoxide and hydrogen, derived from coal or natural gas, can be converted into suitable equipment to products similar to those obtained from crude-oil.

Because North America was well supplied with oil before the war interest in this synthesis process was mainly academic on this side of the water. Recently, however, the United States, traditionally an exporter of oil, has had to import more petroleum than it exports and until the demand exceeds the supply.

In peace-time this situation can be remedied as material becomes available to increase the supply of crude-oil funds domestic and imported. Long time, money, effort and materials will be required to find new sources of crude and construct the facilities to process it, then would be involved in operating elaborate syntheses plants.

If another war should develop, however, the United States and Canada might be cut off from their supplies of imported oil and accordingly an important part of the oil industry's plans for the future.
Much work has been done to find improved catalysis, and as a result synthesis plants using newly developed catalysis produce a good yield of high-grade gas oil which does not require further conversion processes to make it suitable for today's motor cars. The action of a catalyst is little understood, in spite of years of research. Suffice it to say that nothing would happen if the catalyst were not used.

Construction of synthesis plants calls for a huge investment of both of money and materials. A study of costs reveals that an investment of $35 to $45 million dollars would be involved in building a plant to synthesize 10,000 barrels per day of liquid oil products from natural gas. This investment would be doubled if coal was used as the raw material. And one such plant would supply only four percent of Canada's current oil requirements. As present, the Canadian oil industry is spending large sums with considerable success in searching for oil. The expansion of the oil field at Tadoussac will eliminate the costly importation of crude oil and products to the Prairie. Thus the development of synthesis plants or other substitutes sources appears more practical.

Another problem presented by the operation of synthesis plants in Canada is that, in addition to making gasoline and diesel fuel, the synthesis process produces appreciable quantities of chemicals known as oxygenated compounds. They are valuable chemicals that are not presently produced in Canada and are being imported for further synthesis to other products. The costly equipment required to recover the chemicals would be heavily justified in view of the limited demand for them in Canada.

We must not overlook Alberta's tar sands as a potential source of fuels for this country. As early as 1894 various interested parties have been trying to find a way of extracting the hundred billion barrels of oil contained in them. The oil is in such a heavy tarry state that it will not flow to wells drilled in the sands. In fact, it is so thick that it must be removed by mechanical means.

A certain measure of success has been obtained in mining the oil-coated sand and washing the oil out with hot water. A process using water of 150° F. has been used. Once separated the oil can be refined by conventional methods. In the meantime, it is known that such oil has a high sulphur content of about 5%, and it is necessary to remove the sulphur and other light fuel. The major portion emerges as a heavy fuel oil. Since there is plenty of coal and oil water at Fort McMurray, the obvious process is to produce heavy fuel. The demand in the Prairies is essentially for gasoline, tractor and diesel fuel. A heavy investment in special equipment would be required to increase the yield of the more desirable products.

When sources of crude oil show signs of running out, Canadians may want to look at the possibilities of consumption in the East in competition with products manufactured from crude oil.
Everything Shipshape

Imperial’s new lake tankers pass their operating tests with flying colors

"Ship to be ballasted to draw 14 feet six inches aft and 13 feet six inches forward on Friday, April 9, and turned with her bow pointing seaward", the Collingwood Shipyards order read.

The order had been carried out, and at 8:30 the following morning all was in readiness. The Imperial Collingwood was to be put through her paces in a day-long trial run on Georgian Bay off the port whose shipyards had given her birth.

As a manufacturer checks the operation of a new automobile model, so the men aboard the tanker were there to submit such parts as her compass, steering, and engines to rigid tests to make sure all were in good working order so that the new ship could soon begin her appointed task of transporting oil for Canada on the Great Lakes.

As shipyards and Company men boarded the canal-sized tanker, her blue-and-white Imperial Oil house flag was snapping at the mainmast and a plume of steam waved at her smokestack. She lay alongside the freighter Exeterton, dwarfed by the big ship’s hull. In addition to her crew of 30 men, she carried 50 others who would check her performance.

The 2,500-deadweight-ton tanker was commanded by trial captain Floyd Boult, boss rigger of the ships' yards. He pulled the whistle lugged and steam blanketed the funnel as the whistle sounded. Then he ordered the lines cast off and the ship slowly gathered way with the engines at “slow ahead”. The Imperial Collingwood was off, nosing slowly through the narrow channel leading to the docks at her home port, passing the spar buoys marking the channel’s safe bounds, and on into the bay, blue under a bright sun and gentle north-easterly breeze.

Once deep water was under the tanker’s keel the first operation was “compass adjusting”. Veteran lake captain W. W. Inkster, was in charge of this test. The ship carries two compasses—a Sperry gyrocompass and the older and more familiar magnetic or standard compass.

The steel of a ship’s hull and superstructure affects the accuracy of the compass needle, and magnets are placed near the compass to compensate for this influence. The magnets counteract the “pull” of the ship itself, and the needle will point to the magnetic north. The test was not concerned with the gyrocompass, which would be adjusted later.

Besides the gyrocompass, the wheelhouse has other navigation aids, an echo sounder, to give the depth of water under the ship’s keel and record it on a strip of paper; a ship-to-shore telephone; a radio direction finder and a telephone which connects the bridge with the captain’s cabin, the chief engineer’s cabin and the engine room.

The ship was held on a straight course by keeping the harbor beacons of Collingwood in line dead astern, with the engines turning the propeller at 85 revolutions per minute. Capt. Inkster worked on the deck above the wheelhouse where the magnetic compass is installed. Its reading is visible to the wheelman through a periscope.

Once the compass was adjusted, the new tanker turned off for speed trials over a measured mile. The mile is marked by buoys set afloat, and the ship follows a course parallel to the shore line. Timing is done with a stop watch.

Binoculars scanned the shore to pick up the beacons as the Imperial Collingwood, now at “full ahead”, steamed along the coast on a southeast course. Finally the beacons came into line abreast and the stop watch commenced its ticking. Six minutes and three seconds later the beacons marking the end of the mile were in line and the watch was stopped. The ship heeled as she turned in a tight circle for another run, this time heading northwest.

In the wheelhouse, Frank Coutts, chief engineer of the ships’ yards, Peter Duncan, Imperial’s naval architect, and Fred Thomas, hull inspector, busied themselves with slide rule calculations.

The tanker was designed for a speed of 8 1/2 knots. They thought she had done better. She had. She was clocked at 9.92 knots for the first run, with the propeller turning at 109 RPM. The second run was slower—the slide rules gave her speed as 9.40 knots. The third brought her up to 10 knots even. The fourth and last was 9.45, which made her average speed 9.69 knots.

While she headed north with the engines still at “full ahead”, the chief steward, Adolph Nolans, turned to feeding the 80 men aboard. On the menu was tomato juice, to be followed by tasty ham or tender roast beef, and then apple or raisin pie and coffee, tea or milk.

The pie had been a problem. The chief steward had been a little doubtful about pies being delivered to the ship, so, at midnight the preceding night, he turned to in the galley and baked 18 pies. At 5 a.m. he went to his bunk for a few hours’ sleep. Compliments about the food made him forget his weariness.

The trial run is quite different from the ordinary passage on a ship. Hence, the Imperial Collingwood’s captain C. H. Dyson had little to do. The shipyards still owned the ship and Capt. Boult was in charge during the trial run. On its satisfactory completion, the ship would be transferred to Imperial.

Capt. Dyson’s career with Imperial goes back to November 11, 1918. On that day he joined the Irocoe and in the succeeding years has commanded the Royolite, Acadiane, Irocoe and Sarnolite. He has been captain of the Windsprite for the past 14 years.

In the engine room chief engineer A. W. Adams was busy controlling the flow of power from the oil-fired boilers to the tanker’s 1,200-horsepower engine, and in looking after her auxiliaries.

With the engine turning at 100 revolutions, the Imperial Collingwood headed north. A small ice
field still lingered in the lee of Christian Island, so the tanker gave it a wide berth and swung south.

Soon another test came: "as we proceeded". Capt. Boult moved the engine room telegraph to "full astern" and the ship lost headway as the 12½-foot propeller gradually brought her to a stop, then sent her backwards.

Then the men aboard tested the steering. Gracefully she swung to port and to starboard as her helm was put down "hard a-port"... "midship"... "hard a-starboard". The tight circles of her wake gave a good indication of her manoeuvrability.

Control next passed from the bridge to the stem, for a "hand steering" test. The wheelman on the bridge has his strength augmented by the power of steens, but on the stem two big wheels swing the rudder by manpower. The two wheels mean that four men can grip their spokes if the steam gear breaks down and hand steering becomes necessary. The tanker passed this test as she did all the others — easily and without fuss.

As the afternoon wore on, the wind went down with the sun. The bay became glassy. The tanker moved nearer shore for her last test — anchor trials. Steam hauled into the anchor winch. Chief officer W. G. Thomas stood by with a lead line. The tanker slowed. Down went the line with its lead weight.

"Thirty-six fathoms", Bill Thomas called to Floyd Boult on the bridge.

"We'll take her in a bit", tried captain Boult said.

"We want about 30 fathoms for the trial."

The ship nosed about. The line went down into the blue depths again, touched bottom at 32 fathoms.

"Good enough", said Capt. Boult, and gave the order for starboard anchor to be dropped. The First Mate moved to the winch.

"Give her four shots", was the order from the bridge. Bill Thomas released the brake, and four 15-fathom lengths of heavy chain rumbled through the bow anchor pipe. Then the port anchor was let go.

"Give her another shot", came from the bridge, and another length of chain ran out.

Then the steam was put to work, and slowly the chain came up, with mud from the bottom on the lower lengths and anchor. As the mud appeared, it was washed off by hawser in the bow. Soon the anchor was snug in the anchor pockets.

Seventeen days later, it was the Imperial London's turn for testing. She manoeuvred in Nottawasaga Bay off Collingwood under grey skies which sent down rain showers accompanied by an east-northeast wind which kicked up waves described in Capt. Boult's report as "light chop".

She performed just as well as her sister ship, logging an average of 9.38 knots over the measured mile, with her propeller turning a few revolutions slower than the Imperial Collingwood's did on this test. The results were approximately the same — both ships were about a knot faster than the design indicated they would be.

At the end of April, the Imperial London cleared Collingwood bound for Buenos Aires, there to take on her first cargo of petroleum products. She was in charge of Capt. W. V. Matthews, and the engine room was under Chief Engineer John Maxwell's care.

The new ships, like the rest of the fleet, will have little rest this summer, for the demand for oil is too pressing. Canadians need these ships to bring them the oil and oilseeds required to keep homes, factories and transport fuelled and lubricated, and to store up oil supplies against the time when winter closes navigation on the lakes.
Trinkets from Tusks

A Canadian at Whitehorse in the Yukon Territory finds a unique livelihood in carving ivory jewelry from the remains of prehistoric animals.

Ivory carving is an industry of the tropics; it is also an industry of the far north. Today, in Whitehorse, Yukon Territory, an enterprising Canadian, Jack Elliott, has built up a profitable business carving ivory objects from ancient mastodon tusks.

The mastodon, an animal akin to the elephant, roamed the earth in prehistoric times. About 20,000 years ago, in an age known as the Pleistocene or Ice Age, it became extinct but its remains have been found in many parts of the world, often in a surprisingly fine state of preservation.

As a small boy, Jack Elliott had heard about these prehistoric creatures and his curiosity was aroused. In the process of growing up he forgot about them and it was not until later that his interest was revived.

He was in Vancouver, in 1916, when a friend persuaded him to take a trip to Whitehorse. Jack, a recently graduated ship's engineer, had decided upon a career in China but he agreed to make the voyage "just once." While the "just once" turned out to be a series of trips over several years, it was on this first voyage that Jack was to find his life's work.

At one of the ports of call, he noticed five enormous tusks lying beside a small wooden house. He inquired about them and was told that they "weren't good for anything and wouldn't even burn." The owner said Jack could have them and although he didn't know then that they were mastodon tusks, he decided to take one back to the ship. He picked up the smallest—a mere 200-pounder—and nearly killed himself trying to haul it aboard.

As a captain on one of the Yukon steamers, running between Whitehorse, Dawson City and the Alaskan coast, Jack met miners and dredgers who frequently came upon quantities of mastodon remains during digging operations. He bought tusks and bones from these men and also did some searching on his own. Then, during off-season when the boats were tied up for winter, he would fashion novelties out of the ivory for his own amusement.

China was forgotten in the excitement of the North and the hunt for mastodon remains.

Skeleton of a prehistoric mastodon, an animal akin to the elephant, have been found in many parts of the world. Specimens like the above are on display at some Canadian museums.

Carving ivory objects from ancient mastodon tusks, once a hobby with Jack Elliott of Whitehorse, Yukon Territory, has now become a profitiable business. The jewelry is instantly recognizable because each piece has a real gold nugget set in the center.

After a few trips, Jack Elliott's ivories were in such demand that he left the sea and turned his hobby into a business. He settled in Whitehorse and now has a store on the main street across from the Whitehorse Inn. While he doesn't export, his jewelry has been seen in many far-away places. It is instantly recognizable because every piece has a gold nugget set in the centre. This particular form of ornament has become identified with the name of Jack Elliott.

Mastodon skeletons are usually found about 60 feet below the surface of the earth. The tusks may be anywhere from eight to 15 feet in length and weigh from 200 to 300 pounds. The ivory has a rich mellow color that is generally admired.

Some people think that a day may come when the spread of civilization may cause the disappearance of the elephant in Africa and that it will be to these mastodon deposits that we may have to turn as the only source of animal ivory.

Fossil tusks have been found in many parts of Canada but not in large numbers except in the Klondike region. But in Siberia, mammoth and mastodon tusks were so numerous that a flourishing ivory trade existed for nearly two and a half centuries, from 1692 to 1923. It has been estimated that an average of 70,000 lbs. of ivory was exported annually during these years.

Some of the ivory carving work of the craftsmen of ancient Crete, Egypt, China and India is unequalled to this day. The Chinese especially had an appreciation of the intrinsic beauty of ivory.

In the Arctic regions of North America, the Eskimos were carving heads of seals and other real-
istic figures out of mastodon and walrus tusks, over a thousand years ago. With the coming of the white man the art died out but there are encouraging signs that it will rise again. While the work in Jack Elliott's shop is done by machine, an attempt is being made in other parts of the country and in Alaska to revive the beautiful hand carving of the past.

Scientists would, of course, like to keep all good specimens of prehistoric animals for museum pieces. Jack Elliott has sold some skeletons and collections of bones to several American museums and on oc-

casional palaeontologists have come to Whitehorse when he has had a particularly big find. While skeletons of mastodons and mammoths are on exhibit at most Canadian museums, museum officials feel their collections are still far from complete and are anxious to obtain all the specimens they can.

Like anything else taken from the earth, the supply of mastodons remains limited. Jack Elliott estimates that in five years the tusks around Whitehorse will be exhausted but in the meantime he is continuing his unusual trade in this unusual town of the north.

Ivory carvings in Jack Elliott's shop are all done by machine. Here, a tusk is sliced and the decayed pieces discarded.

Field Report

Leduc oil wells, shut down after the Atlantic Oil Company's No. 3 well went wild early in May, resumed production on a restricted basis on June 5th. Wells drilled into the D3 strata were permitted to produce an average of 120 barrels a day and D2 wells were allowed 40 barrels daily by the Alberta Petroleum and Natural Gas Conservation Board.

Atlantic No. 3 had been giving trouble since March. In May it began gushing oil and gas over a 10-acre area around the wellsite. As a result the Conservation Board assumed control of the well on May 13th and officially halted production of other wells so that the Imperial Oil pipe line to Nisku could be made available to handle exclusively the oil from the wild well. At its peak the well gushed about 15,000 barrels of oil and 50 to 75 million cubic feet of gas a day.

Measures to bring Atlantic No. 3 under control included drilling two relief wells to relieve pressure and pumping water down the nearby Imperial Leduc No. 48 well.

The reason for re-opening the field was that most of the pits which held the "wild" oil had been pumped out. Atlantic No. 1 and No. 2 wells had been acidized and volumes up to 9,000 barrels a day could be pumped back into these two wells.

The wild well did not interfere with drilling activities in other parts of the field and by the end of May Imperial had 55 wells completed, 10 drilling and one dry hole. Other operators had brought in 17 producers and had seven dry holes.

In the Woodbend area a few miles north of Leduc, Imperial had three producers and two wells drilling. Other operators were drilling one well. Altogether Imperial is employing 18 contract drilling rigs in the Leduc-Woodbend area.

At Lloydminster on the Saskatchewan-Alberta border the Company had two wells producing, one drilling and three standing, waiting for pumps, tanks or other equipment.

Imperial owns six rigs on wildcard sites in Alberta to which two new rigs are being added. One new rig will drill Imperial Spirit River No. 1 well near the town of Spirit River in the Peace River district 250 miles north of Edmonton. The other new rig will start operating in July.

Meanwhile, at the end of May, progress was being made in drilling Imperial wildcard wells at Eyot, Volmer and Clyde; and also N.P.A. Muskog, in which the Company has a one-fifth interest. Imperial Tosfield No. 1, another wildcard, was abandoned after reaching a depth of 8,000 feet, and the rig was moved to a new location to begin drilling Imperial Armera No. 1, 25 miles southeast of Leduc town. Early in June the well at Fedorah, Alberta, was abandoned.

In southwestern Ontario, Imperial's exploration and development program continues. The Becher field, near Wallaceburg, now is producing about 175 barrels of oil and 1,000,000 cubic feet of gas a day. Since our last Field Report, an additional well has been completed as an oil producer and is awaiting acidizing. Another was brought in as a small gas well. A third is testing and appears capable of producing about 25 barrels of oil a day. Well No. 14 was a dry hole and wells Nos. 30 and 31 now are drilling.

Two additional gas wells have been completed in the Kimball field, 12 miles north of Becher. Well No. 9 was a dry hole, No. 10 is drilling and No. 11 is rigging up.

In the Staples field, near Tilbury, the discovery well came in as a gusher and looked promising, but production dwindled and water became an increasing handicap. The well now has been shut in. Imperial Staples No. 2, completed as a pumper, also went to water rapidly and has been shut in.

In the Dante area, four miles north of Bothwell, Imperial has a new oil producer, Imperial Dante No. 2. This well now is pumping steadily and producing 25 to 40 barrels a day. Two more wells are drilling in this area.

Imperial also has four wildcard wells drilling in Ontario. They are located in the Whitebread, Corunna, Wheatley and Electric areas.
The Lobster

Lobster trapping is a colorful multi-million dollar industry off the shores of Canada's Atlantic coast.

Two lobsters in extreme sizes lie on a wooden planks to pose for a picture. The little fellow near the top weighs about an ounce and a half; his big companion weighs about twelve pounds.

Lobster fishing boats tied up at the Little Entrance to Cariboo harbor. In the background are sheds for storing fishing gear.

The cold breath of an easterly wind, bared on Atlantic drift ice, rocked the fisheries patrol boat gently as she forged through Northumberland Strait at half speed. In a few hours the lobster fishing season would open, and the three men on the patrol were there to see that no fishing craft left the shore before the official deadline—5 a.m. on May 1.

The first hint of dawn found the patrol boat off Pictou Harbor, with Gull Rock light winking ahead, and Pictou Island on the starboard bow.

The skipper consulted his watch in the glow from the binnacle.

"Four o'clock", he muttered to the wheelman.

"The boys ashore'll be warming their engines any time now."

He rang the engine room and the 50-foot craft picked up speed as the throbs of her diesel quickened.

Ashore, the fishermen were making last-minute preparations for the race for the best fishing grounds.

Their boats, hauled up during the winter, now were sleek and gleaming with new paint. The engines, many of which once powered a motor car, were tuned to give the last fraction of a knot in speed.

There were no traps aboard the fishing boats; just lines and buoys for markers. The line first laid across a section of sea bottom establishes the fishing rights there for the season, and later if other lines are laid across the first one they may be cut legally. That was why speed was essential—to get that first line laid on the best section of lobster bottom.

The boats' hulls are high in the bow—to break the steep chop of Northumberland Strait waves—and low in the stern—so that lobster traps can be hauled in with a minimum of effort. There are no deck houses on the hulls and the fishermen are exposed to whatever weather comes—bright sun or cold, slanting rain.

Some of the fishermen operate alone, but others have a "helper".

Suddenly, as if to spite the high-powered automobile motors, a single-cylinder marine engine coughed into life. Its putt-putt had scarcely steadied when it...
was drowned out by the roar of four, six, and eight-cylinder engines. The fishermen were ready to leave the shore.

On the petrol boat, the hands of the skipper’s watch reached five o’clock. Within minutes the fishing boats were shooting by, bows high and wakes glowing white in the growing daylight.

As the sun rose, the Strals became dotted with buoys, each with its distinctive markings, indicating where each fisherman had laid his lines. The boats were coming from shore piled high with traps. Some fishermen would put more than 600 traps on the bottom; others would fish “bull trawls”—lines of about 10 traps.

The skipper of the fishermen petrol boat took the wheel and the deckhand slipped below to brew a hoist tea in the galley. Her night’s work had ended, but the petrol boat’s hours during the fishing season would be as irregular as those of the fishermen, who rise long before dawn and land their catches by mid-afternoon. Now that the season was open, two months of hard work lay ahead.

But the fishermen had already put in long hours of toil—hours spent making traps and knitting heads (the net-like part of the trap); of collecting flat stones to keep the traps on bottom where the lobsters crawl. Hours more had gone in making marker buoys, in overhauling engines, in caulkling and painting boats, or even in making new buoys.

Now they were ready to put their gear to use—to trap the lobsters with a herring as bait. A lobster trap is built of laths; laths in its floor and laths nailed to semi-circular hoops to form the rounded top. The ends are made of netting which funnels into a wooden ring.

Lured by the herring, the lobster crawls up the netting through the ring and into the trap, but the ring is a few inches off the floor and he cannot raise himself high enough to crawl back through it. The fisherman removes the trap from the fisher through a hinged opening in the top.

Pulling hundreds of traps, day after day, in fair weather and foul, is hard work. Traps usually are pulled by hand, but power winches are coming into use. In addition to lobsters, the fishermen also makes the unwelcome catch of starfish, crabs, aipny sea urchins and various forms of marine life in his traps. Once emptied, the traps are re-baited and returned to the sea bottom again.

Lobsters above nine inches in length usually are classed as “market” and are shipped alive. The smaller ones, between seven and nine inches, are “cannery” and are shelled and put into tins at the canneries. Lobsters less than seven inches in length must, under fisheries regulations, be returned to the sea for further growth.

From the days of the early settlers, lobsters were caught by men in boats propelled by oars or sail. When gasoline engines in fishing boats were introduced about 1910 the effect was revolutionary, for no longer was the fisherman dependent on the va- grant wind or the power of his own arms. Few sails were left by 1915 and soon they passed into limbo. The gasoline engine increased the fisherman’s scope of operations, for he could operate farther and further from shore.

About the same time the production of canned lobster was increased with the introduction of a tin can which could be sealed by a machine and did not depend on slow hand soldering.

A third milestone in the Canadian industry came about 1929, when the federal government became concerned with regulations for the industry. The regulations soon resulted in an improvement in the quality of canned lobster.

Live shipment of lobsters began in 1924, when a rail consignment was delivered in Boston, Mass. Since then this phase has developed steadily and now shipments are made by air from Maritime ports, and from Newfoundland both diectly by sea and through Pictou, where refrigerated trucks pick up the live lobsters and rush them to market.

Fishermen know the lobster as a most cantankerous and ill-tempered sea-dweller who likes neither man nor his fellows. His powerful claws can cause

MEN OF THE LOBSTER INDUSTRY, L. W. Hobbs (left) is a veteran packer and has also been an implant oil agent for many years. G. H. Glowe (right) works on the Lobster Fleet.

Eddie Broun (left) is another veteran lobste...
**Keeping the lobster alive**

Once caught, the lobsters are kept alive in crates or trays, sunk into salt water beneath big floats or "cars".

Fisheries regulations provide that lobsters less than seven inches long must be returned to the sea for further growth. Lobsters of doubtful size are checked with a measuring gauge.

The lobsters are then cleaned and sorted. The heads and tails are removed, and the meat is separated from the shell. The meat is then stored in salt water to prevent spoilage.

The next step is to age the lobsters. They are placed in tanks where they are allowed to grow before being sold for consumption.

The lobsters are transported to the processing plant in refrigerated trucks. Once there, they are cooked and prepared for sale. Some are smoked, while others are boiled or steamed.

The lobsters are then packaged and shipped to stores and restaurants across the country. The lobsters are also exported to other countries, including Japan and China.

The lobsters are a valuable resource, and their conservation is crucial. Efforts are made to ensure that the lobsters are not overfished, and measures are taken to protect their habitat.

With proper management and conservation efforts, the lobster population can thrive and continue to provide a valuable resource for the fishing industry and the economy.
Canning the lobster

In the canning factories, the lobster is boiled, the meat is extracted from the shells, and packed in cans by men and women working at top speed.

As the fishing season nears its end, the canning factories become surrounded with crates and trugs which the fisherman have brought ashore. The canning factory is at Little Entrance, N.S.

The end product of the canning factory is in these trays of shining tins. Just out of a steam retort where they were cooked under pressure, the hot trays are stacked in a shed until they cool.

On arrival at the cannery, the lobsters are thrown without ceremony into a tank of boiling water and cooked for about 20 minutes. Here Ovville Ffite takes a batch from the tank.

The hot lobsters are dumped into cold water and here Cornelius and Arthur Othlas, counsels, separate the claws and tails from the bodies. Cotton gloves give their hands protection.

Mary Boston passes the cans and Donald Bullock, roughs them through the retort. The cans are cooled in a steam retort. The final step is labelling and packing for shipment.

The lobsters are washed and handled. A team of workers separate the meat from the claws and tails. The meat is then prepared for canning.

Gertrude Bond, Teresa Jones and Matilda Fallerine remove the meat from the lobsters "arms" with small picks, while others handle the claws and tails. After removal, the meat is washed.

After washing, the lobster meat is weighed by Mrs. Lucy Fallerine. She places a required number of claws and tails in a can; adds salt meat until it balances the six-ounce can on the scale.

The meat is vacuum packed and sealed. The cans are then sterilized in a steam retort, ensuring the preservation of the delicious lobster meat for later consumption.

The canning process is a testament to the efficient and well-organized operations that ensure the quality and safety of the canned lobster products.
Teaching Turnabout

The Canadian exchange plan gives teachers an opportunity to gain a first-hand knowledge of other provinces and countries.

To know now other people live and what they think has always been of concern in teachers who are anxious to do their jobs more competently. Now through an arrangement known as "Teacher Exchange" opportunity is provided for Canadian teachers to broaden their experience and knowledge.

Under this plan a teacher from each of the provinces in Canada may exchange his or her job with a teacher in another province for a short period of six months. The Alberta Education Association recently on the values of teacher exchanges he said: "When the teacher in Nova Scotia undertakes to describe the beauty spots of British Columbia, the oil fields and wheat fields and beet fields of the prairies, the mineral wealth and manufacturing capability of the central provinces, he should be able to say, 'I know at first hand what I am talking about. I have been there. I have seen those things.'"

F. K. Stewart, secretary of the Canadian Education Association, which arranges the exchanges, says, "We feel that teacher exchange is an interesting and broadening experience for the teacher and a practical means of strengthening the power of education for Canadian unity and for international goodwill."

"To be eligible for exchange, a teacher must be at least 25 years of age, have at least five years' successful teaching experience, and be in good health. The applicant must be adaptable to new conditions and have "the outlook and attitude of one who regards teaching as a profession.""

"Each province has its own qualifications for teachers," says Mr. Stewart, "and normally a teacher would have to qualify in whatever province he or she planned to teach. The exchange system, however, permits teaching in another province and enables the teacher to gain experience with other educational systems and so broaden his knowledge and aid in advancing the teaching profession."

In the 1947-48 school year now closing, 39 teachers have made interprovincial exchanges. 64 have exchanged with teachers in the British Isles and four are teaching in the United States. For the 1948-49 term 10 teachers have applied for interprovincial exchanges, 15 for the United Kingdom and 24 for the United States.

Typical of the teachers on "exchange" are Miss Margaret H. Rogers of Montreal, presently teaching grade three in Carleton Elementary School, Vancouver, and Miss Wilma J. Russell of Vancouver who is teaching grade four in Joan Avenue school, Montreal.

When Miss Rogers took over her duties in Vancouver, she and other exchange teachers were given an official welcome at the city hall. Many activities were included to give the exchange teachers an opportunity to see as much of British Columbia and her citizens have been provided by organizations such as the League of the Empire. These have included a three-day trip through the Cariboo River valley.

Of her teaching experiences Miss Rogers says, "The teachers have been extremely helpful and the whole environment has been beneficial. We work quite hard, but I have found some time to devote to golf and swimming."

In Montreal, Miss Russell said, "The exchange has broadened my viewpoint. The educational standards are about the same in Vancouver and Montreal. The people have been very charming and very hospitable."

Miss Russell has spent two days in Ottawa during which she attended the debates in the House of Commons. Before returning to British Columbia she plans to extend her knowledge of Canada by a trip to the Maritimes.

Imperial Oil has been able to assist the exchange teachers. A Canadian Education Association pamphlet carries the following paragraph: "In recognition of the value of teacher exchange as a force for Canadian unity, Imperial Oil Ltd. has generously donated $5,000 to help defray travelling expenses of teachers going to exchange positions in other provinces of Canada or in Newfoundland. The Canadian Education Association will use this money to provide humanities on their expense of not less than $5 to exchange teachers."

The $5,000 contribution will be for the 1947-48 exchanges. For the 1948-49 interprovincial exchanges the Company contributed another $5,000. In addition to assisting in the travelling expenses of those in Canada, part of this sum was used to send Christmas food parcels to exchange teachers in Britain. 

Miss Margaret Rogers of Montreal has a year in Vancouver under the Teacher Exchange Plan. Here she and another member of her class pause before a tableau in Vancouver's famous Stanley Park.
Personalities in the News

F. G. Hall Elected a Vice-President of Imperial Oil Limited
Frank G. Hall, director in charge of marketing, has been elected a vice-president of the Company. Mr. Hall was born and educated in Ontario and joined Imperial Oil as an office boy in 1912. After wide experience in the marketing department he became assistant general sales manager in 1935. Subsequently, in addition to his regular work, he took over the duties of co-ordinator of sales and vice-chairman of the marketing department. In 1945 he became general sales manager and a year later was elected a director of the Company. During the war Mr. Hall served on a number of advisory committees which assisted the oil controller in supplying petroleum products for Canada’s war effort.

M. L. Holdier Elected a Director of Imperial Oil Limited
At Imperial Oil’s annual meeting, M. L. Holdier was elected a director of the Company. Mr. Holdier, who is manager of Imperial’s producing department, has had long experience in the oil industry. After graduation from Stanford University in 1926, he became a research engineer in the gas field. He became chief engineer in 1938 and in 1938 moved to New York as head of the production research and engineering department of the Standard Oil Development Company. He remained in this position until 1945 when he was appointed executive assistant to the producing department of Standard Oil Company (New Jersey). He joined Imperial Oil as manager of the producing department in 1946.

Leonard H. Griffiths Dies
Leonard H. Griffiths, manager of the Manitoba marketing division for the past 15 years, died suddenly after a short illness.
Born in Briston, Hampshire, England, Mr. Griffiths served in the Boer War and was awarded both the King’s and Queen’s South African Medals. He came to Canada in 1903 and in 1919 joined Imperial Oil as a warehouse clerk in Vancouver. Following a number of station appointments in British Columbia, he was transferred to Toronto in 1927 as assistant sales manager, Ontario division. In 1929 he was made special representative of the general sales department for western Canada and a year later became manager of the Manitoba marketing division.

J. E. Akitt Appointed Manager of Manitoba Marketing Division
J. E. Akitt, formerly manager of Saskatchewan marketing division, has been named manager of Manitoba division to succeed the late L. H. Griffiths. Mr. Akitt was born in Winnipeg, Ont., and educated at Guelph, Ont. During World War I, he enlisted with the 115th Battalion. He joined Imperial Oil in 1923 as a salesmen in St. Bonaventure. In 1924 he was transferred to Edmonton as supervisor of service stations and construction and the following year went to Calgary as city agent. He became Saskatchewan sales manager in 1941, and in 1945 was appointed western coordinator of farm sales development at Regina. In 1947 he became Saskatchewan divisional manager.

A. A. Turner Succeeds J. E. Akitt in Saskatchewan
A. A. Turner was recently appointed manager of the Saskatchewan marketing division. Born and educated in Minnesota, Minn., Mr. Turner joined Imperial Oil in 1922 as a commission agent at Payndale, Sask. He advanced through various sales positions to become manager west and operating at Winnipeg in 1941. In 1943 he was appointed general manager of Maple Leaf Petroleum Ltd., with headquarters at Calgary. Two years later he was made Saskatchewan sales manager.

W. C. Garbutt Appointed Manager of British Columbia Marketing Division
W. C. Garbutt, formerly manager of Ontario marketing division, has been appointed manager of the British Columbia marketing division. He succeeded Roy M. Petterson, who is ill health and is taking an extended leave of absence before returning to the Company to act in an advisory capacity. Mr. Garbutt joined Imperial Oil in 1919 and the following year went to Saint John, N.B. as chief accountant. He served in a similar capacity at Hamilton before going to Vancouver as chief accountant. In 1928 he became district manager at Vancouver and a year later was appointed merchandising coordinator. In 1942 he was named sales manager for British Columbia and held this position until his transfer to Toronto in 1945.

J. G. Dunlop Named Manager of Ontario Marketing Division
J. G. Dunlop, manager of the Maritime marketing divisions since 1939, succeeds W. C. Garbutt as manager of Ontario marketing division. Mr. Dunlop joined Imperial at Ottawa in 1934 as a sales clerk. He served in various capacities in the Ottawa office, becoming assistant sales manager in 1941. In 1948 he came to Toronto as sales manager of the Ontario division. He was transferred to Halifax in 1949 as manager of the Maritime marketing division. Mr. Dunlop is a past president of the Halifax branch of the Navy League of Canada. For his war service with the League he was made an Officer of the Order of the British Empire.

W. W. Shattuck Returns to Halifax as Manager of Maritime Marketing Division
W. W. Shattuck has been appointed manager of the Maritime marketing division to succeed J. G. Dunlop. Mr. Shattuck was born in Halifax and joined Imperial Oil in 1929 as a stock boy at Imperial Refinery. He later transferred to the marketing department and after a number of promotions became assistant manager of the Nova Scotia division. When the Maritime division was formed in 1937, he was made divisional engineer and three years later was appointed assistant manager at Saint John, N.B. In 1944 he became merchandising coordinator in Ontario division. In 1948 he was appointed co-coordinator of eastern retail sales. He later was assistant to the co-coordinator of the general sales operating department.

IMPERIAL OIL REVIEW
L. T. MacNaughton Takes Over Special Duties

L.T. MacNaughton, formerly superintendent of Ioco refinery, is on special assignment with International Petroleum Co. Ltd., co-ordinating engineering problems.

Born in Mitchell, Ont., "L.T." MacNaughton received his early education in London, Ont. He graduated from the University of Toronto as a mechanical engineer in 1921 and the following year joined Imperial Oil. In 1929, he was transferred to Colombia as refinery engineer at Barranca Bermeja, becoming superintendent in 1933. In 1937 Mr. MacNaughton returned to Canada as assistant manager at Montreal East refinery and in 1946 was appointed superintendent at Ioco refinery.

Charles Scrymgour Appointed Superintendent of Ioco Refinery

Charles Scrymgour, former superintendent of Montreal refinery, has been appointed superintendent of Ioco refinery succeeding L.T. MacNaughton. Mr. Scrymgour was born in England and came to Canada in 1914. Joining Imperial at Halifax in 1921 as a junior engineer and draftsman he later became superintendent of the Halifax refinery. He was also concerned with construction for the marketing department in the Maritime. In 1946, after 25 years at Halifax, Mr. Scrymgour was transferred to Montreal as superintendent of the refinery.

E. Keith Lewis Appointed Superintendent of Montreal East Refinery

The new superintendent of Montreal East refinery is E. Keith Lewis, a Nova Scotian. Mr. Lewis began his career with Imperial in 1933 as an industrial engineer at Halifax refinery. In 1942 he was transferred to Sarnia as process refinery foreman. In October of the same year he joined St. Clair Processing Corp., as one of the specialists needed for the Canadian production of synthetic rubber. After the St. Clair company was merged with Polymer Corporation he remained for a time as production manager but returned to Imperial Oil at Sarnia late in 1946. After taking the advanced management course at the Harvard School of business administration, he was appointed supervisor of the production control group of the engineering and development division in June last year.

A.C. Bloy Retires After 40 Years’ Service

Albert C. Bloy, who retired this spring after 40 years’ with Imperial, came to Canada from England in 1907. The following year he joined the Sarnia refinery staff and was assigned to marine work. In 1916 he was transferred to International Petroleum Co. as a trainer in charge of refined and lubricating oil at Tulsa, Okla. In 1925 he returned to Sarnia and worked at the acid recovery plant. During the war years he was inspector of the plant security department and continued his association with that department until his retirement.

Thomas J. Miller Receives 40 Year Button

This year Thomas J. Miller of the marketing department completed 40 years’ service with Imperial. He joined the Company as a clerk in the Winnipeg office on December 19th, 1907, soon after his arrival from Belfast. He advanced through different clerical jobs at Winnipeg and in 1917 was transferred to Calgary as chief accountant. Subsequently he was chief accountant at Winnipeg and at Montreal and was later appointed supervisor of accounting for the eastern marketing divisions. In 1944 he became co-ordinator of the newly-formed marketing accounting department at Toronto, which position he held until February 21, 1967, when he was appointed to special duties in the marketing department.
Bound for Canada with crude loaded at Coripito, Venezuela, the big "T-2" type tanker Imperial Quebec steams down the tropical San Juan River.