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ON THE FRONT COVER:

The faces on our cover are those of typical Imperial Oil employees, ranging from a geologist to an office worker. Each has a different trade, profession, or trained skill. They are a few of the many specialists who work in the Company to provide a complete petroleum service for the nation.

Almost every day since Imperial brought in Leduc No. 1 well, as described in the following pages, the Company has been asked about the significance of the new discovery. As far as possible all these requests for information have been answered and when the resulting reports have appeared in print in almost every case the publisher has remarked that the Company statements about the new well are conservative and cautious.

There is a reason for the caution with which Imperial regards Leduc in its early stages. As we go to press, the known performance is that of the single well, Leduc No. 1, although results are expected early in April from Leduc No. 2 and Leduc No. 3 has been started. The results of the latter two operations will go a long way to prove whether a new oil field has been found or whether Leduc No. 1 is merely an isolated, if brilliant, performer.

It is true that Leduc No. 1 has produced the most promising initial flow yet recorded by a well on the Canadian plains. It is true the Company hopes the area will become a major oil-producing centre.

It is also true that following the find, leases and reservations for oil rights have been secured by large and small companies on the largest regional scale in this part of Alberta until they now cover more than 6,000,000 acres in the area extending out from Leduc.

This development will lead to a major new exploration program of geological and geophysical work, structure test drilling and deep drilling. But in the rush for rights and in the attention which Leduc has received there is the danger always accompanying a new oil discovery that this activity may build public hopes to an unwarranted peak.

Imperial reports about Leduc will continue to deal strictly with facts and to that extent will be conservative and cautious. The new well is the result of patient search involving large capital expenditures by the Company. If the further tests, when completed within a few months, prove that a new oil field has indeed been discovered, it will be important to the entire Dominion. Until then the full significance of Leduc cannot be appraised.
BIRTH OF AN OIL WELL

IN ITS INITIAL SHOWINGS THE LEDUC WELL NEAR EDMONTON IS THE MOST IMPORTANT DRILLED BY IMPERIAL SINCE THE TURNER VALLEY DISCOVERY

AT EXACTLY four o'clock on the afternoon of February 13 this year a swab which had been lifting thin drilling mud out of Imperial's Leduc No. 1 well stemmed slowly up into the derrick in the crisp winter sunshine above. Some 500 persons, chilled through with cold, watched and listened. Suddenly a driller's voice, high-pitched with excitement, rang out shrill and clear as a quarterback's signal on a rugby field.

"Here she comes!" he said. "She's coming in!"

Then, moments later, as if he were reassuring himself, this veteran of a dozen unproductive wildcats added: "It's oil—oil!"

Thus Imperial Leduc No. 1, located 16 miles south of Edmonton in completely untested territory, came into production. The roughnecks on the derrick floor spun valves on the well head and turned the flow out over the pit where the rock cuttings and spent driling mud had run. Almost a mile below, in porous dolomite rock which had lain undisturbed since it was deposited on ancient sea floors millions of years ago, the great pressures of trapped natural gas and oil were seeking outlet.

As the heavy burden of drilling mud was lifted from the gas and oil they surged upward, forcing the contents of the drill hole before them. Mixed with mud they flowed out of the open end of pipe over the mud pit with a throaty roar, spraying 50 feet across to the frosted earthen bank opposite.

Soon most of the mud was out. Again the valves spun, and the stream flooded away through a three-inch steel flow line, some 200 yards on to a vertical elbow of pipe. Here, because the oil and gas were still mixed with mud, water and drilling chemicals which would contaminate storage tanks, the stream was "flared.

It hurled with great black clouds of smoke which billowed thousands of feet upward and flowed slowly away toward Edmonton. A woman in the crowd exclaimed at the spectacle. Standing near her was George Jones, veteran member of Imperial's production department, who has seen scores of oil wells come into production in Turner Valley and elsewhere.

"Lady," he said, "we don't know whether this is a real oil well yet or not. If it blows a smoke ring I'll say it may be good."

Scarcely were the words uttered when this strange phenomenon of the oil fields occurred. There was a great puff and out of the three-inch pipe and swirled a perfect smoke ring. As Hon. N. E. Turner, Alberta's minister of lands and mines, turned a valve to capture the oil and actually start production into the tanks the smoke ring spiralled up and out until it was hundreds of feet across and thousands of feet high in the clear blue sky.

Even with this spectacular performance, the optimism of the senior members of Imperial's producing department was tempered with the knowledge that this oil well had yet to prove itself over the next few months. They pointed out, too, that one well does not constitute a field—only additional drilling over a period of months and possibly years can determine whether Leduc No. 1 is little more than a puff of smoke, or discoverer of a small or large oil field. But several factors gave it national and even international importance.

Petroleum and production engineers believed that in its initial stages the well gave the most encouraging wildcat performance Canada has seen since the discovery of the Turner Valley field. Geologists and their partners in the search for oil-bearing structures, the geophysicists, were enthusiastic about the story revealed by the rock cores brought up from the producing horizons.

The oil itself was of good quality, a 38 gravity petroleum which would be welcomed by the refining men; they like a fairly light oil which will produce a maximum of the most-needed products. The well was near a large city, close to transportation facilities, and in an area of general demand for petroleum products. It was located on the western plains—as opposed to the Rocky Mountain foothills where drilling is deeper, more difficult and more expensive.

Previously the plains had given up comparatively little oil and that often of heavy, pitch-like quality, with the notable exception of the small Princess field where a good quality crude was discovered in the same formation which produced oil at Leduc No. 1. It is hoped however, that Leduc will exceed Princess both in area and production.

Finally, the oil was found at a time when Canadian demand was steadily rising and her own production of crude diminishing to the point where she had to import 89 per cent. of her domestic requirements. These imports come from sources of supply which, in many cases, are also diminishing.
All of these things added significance to Leduc No. 1, whatever its eventual fate may be. It brought unprecedented activity to the land office at Edmonton, as big and little companies rushed to hold all holdings in the general area. Great blocks were reserved, some far from the Leduc well. Imperial, which had been interested in this part of the province for some time, held large prospecting reservations in the immediate and adjacent areas. It was a foregone conclusion that there would be increased drilling activity in the vicinity of Edmonton, and that exploration in general had received a great impetus.

Already, about a mile from the first well, Imperial had spudded in Imperial Leduc No. 2 to probe the secrets of the deeply-buried dolomite. Other wells were to follow. Whether the ancient sediments far below would feed these with oil, or whether they would contain gas, water or be non-productive was a secret which nature would release only to the swirling drilling bits.

But as the Leduc well settled down to a steady, encouraging flow there was a feeling of deep satisfaction among the men of the production department which no uncertainty of the future could take from them. Vern Hunter, the toolpusher, had worked on seemingly endless wildcates that ended in expensive failure. He had earned his spurs with Imperial in Turner Valley, sharpened them on the tough drilling at Norman Wells in the Northwest Territories, and had wrought through Sackatchewan and Alberta for the company. His was the responsibility for drilling Leduc No. 1; he nursed it through a perilous spell of 28 below-zero weather, watched the careful coring, took repeated "drill stem tests" in a petroleum quire of the successively deepening formations.

Like Hunter, Jim Todd had more than his share of heart-break among the 114 wildcats wells the company has drilled in western Canada in the past 10 years. Jim Todd is a mud man. The drilling mud which flows down the inside of the drill stem, washes away the rock cuttings from the drilling bit and flows back up the walls of the hole, sealing it against the intrusion of water, gas, rock savings and other mishaps is Jim Todd's responsibility. He is a trouble-shooter extraordinary and a trouble preventer of equal proportions. Asked if the hole had given trouble, Hunter replied: "No; we had Jim Todd here."

There were the roughnecks, drillers, truckers, diesel operators, geologists, engineers and others who had worked at Swift Current and Pennant and Provoat and Coldstream and other unproductive wells that helped add up to the 100 miles of hole drilled in the search for oil in western Canada by Imperial—100 miles, a quarter of the total drilling by the entire industry. For them the moment when the oil blew was one long to remember.

It was a rare moment indeed for those who actually made the interpretations of the exploration work and say "drill here": for Jack Webb, chief geologist for western Canada, and Ray Walters, who did the basic work in interpreting the results of the man-made earthquakes which gave to the trained eye a hint of the rock formations far below; for the seismograph chiefs and their parties in the field who did the actual exploration. They led the drills to Leduc.

It was a heartening thing for Walker Taylor and Vern Taylor, manager and operations manager of Imperial's producing department in western Canada, and for bluff, hearty Charlie Visner, drilling superintendent. They were responsible for costs, and they knew the company's increased investment in exploration since Canada's need for oil became great in 1939—a total of $13,250,000 in exploration, $7,000,000 of this in drilling alone.

The Leduc well has provided promise to repay some of this investment of money and heartbreak in wildcutting. Drill stem tests, which permit any zone of rock to be tested for productivity, were made. These tests began in the sandstone which produces natural gas in the Viking-Kinsella area. At Leduc this formation produced only a little gas and some water. In the formation which geologists know as the Lower Cretaceous, however, there were showings of gas and some traces of oil. At 5029 feet there came to the surface what every geologist dreams of—saturated cores.

In dolomite rock, in pores often half the size of a pencil, was petroleum—crude oil of good quality. As they went deeper they made drill stem tests, four in all in the saturated formation. The improvised oil came up the now hollow and empty drill stem and through a temporary flow line to a barn where it sent huge billowing clouds of black smoke into the sky. Oil and gas had been produced in sufficient quantity to warrant setting permanent casing in the hole and the erection of a gas-oil separator and storage tanks.

Special cementing equipment was brought in and a seven-inch steel casing was cemented to the sides of the hole. Other production details were cared for and finally a swab, which works in principle much like an ordinary pump, started to lift the mile-deep column of drilling mud from above the oil-bearing formation.

This was on February 13. Because of the great public interest in the discovery, Alberta government officials, the mayor of Edmonton and several city commissioners and officials, the mayor and other officials of Leduc, press and radio representatives and many citizens of the adjoining area were invited to attend. Others, some from hundreds of miles away—oil men, businessmen with an eye to the potentialities of the discovery, farmers and plain John Citizens—came to watch. In spite of a number of unexpected mechanical difficulties, which the drilling crew fought like yeomen to overcome, the spectators were far from disappointed in the result.

As this article goes to press Imperial Leduc No. 1 is still giving an encouraging and gratifying production. Its future and the future of the wells being developed near it must be determined by actual drilling. In the meantime the tenacious rocks underlying the Alberta plains have given an indication they are willing to give up their much-needed oil to those who have the faith and courage to invest and persevere.

S. R. Stevens, Imperial's Alberta marketing division manager, Mayor H. D. Ainsley of Edmonton and Vern Taylor, of the Company's producing department, discuss Leduc's possibilities.
IN GOOD COMPANY
IMPERIAL EMPLOYEES AND MANAGEMENT CO-OPERATE TO ACHIEVE GOOD WAGES, GOOD WORKING CONDITIONS AND SECURITY

In 1938, John Brown, a typical employee of Imperial Oil, retired after 42 years of service in the Company. With his first annuity cheque in his hand, he will look forward to a secure and comfortable old age, made possible by his share in the Company's Thrift and Annuity Plan.

John will remember that he first joined Imperial as a refinery worker in 1938 when he was 23 years old. He had been at work a year when war broke out and was one of 2,240 Imperial employees who volunteered for military service. When he enlisted, the Company gave him a bonus of a month's salary and because his service pay was less than what he had been earning as a refinery worker, the Company made up the difference through all the time he was in the Army in Canada and overseas.

In the Army, John often thought of the future and decided he would return to Imperial after his discharge. He had married; he was anxious to set up his own home; and he knew his position would be waiting for him.

When John was reinstated, he found that he had the standing of eight full years with the Company. His service included all the time he had been away.

Imperial benefits plans help to make happy homes for employees.

not just the little more than a year-and-a-half he had actually worked in the refinery.

In 1947 John could be any one of many Imperial employees. He will still be a typical employee at his retirement in 1989 and it is safe to predict what his memories will be of the years between. His story will be something like the following:

As a veteran, John received special help in his new job and soon mastered it. He worked hard because he realized his efforts were appreciated. Over the years promotions gradually took him closer to the top. His wages were good and he had the additional satisfaction of knowing that Imperial pays wages as high or higher than those generally prevailing for comparable work in the locality.

A five-day week, eight-hour day, and an annual vacation with pay gave John ample leisure for community activities, to play his favorite game of golf, or to relax with a book.

Through all his working years John had a feeling of security because he knew that he and his family were protected by benefit plans that would help in almost every emergency. If he should die at an early age, his widow would receive insurance; if serious illness struck the family, there would be help in paying the hospital bills; funds would be ready to care for him in his old age. Moreover, the benefit plans were something he helped to build with his own contributions, adding to those made by the Company.

Because of the Hospital and Surgical Benefit Plan, John was able to have the best medical care for his son when the latter had to undergo a serious operation. He himself was sick in 1964 and special cheques arrived promptly all through his illness.

John always had a definite sense of being a part of the organization for which he was working. He had representation through his Joint Council, of which he later became a delegate. His feeling of "oneness" with the Company also increased through the plan by which he became an employee-shareholder.

As a delegate elected by his fellow employees to the Joint Council and later as a management representative, John saw at first hand just how fully employees and management in Imperial Oil co-operate. He began to take an interest in all Company matters, an interest which he will continue as an annuitant.

At the Joint Council sessions, employees and management come to have a better understanding of each other's problems. John realized that efficient competent operation is necessary to maintain good wages and satisfactory working conditions and was therefore anxious to do his part. At his retirement John could feel that he had been a good employee and that he had worked for a good employer.

The spirit of co-operation between employees and management which impressed John Brown has been
characteristic of Imperial ever since its organization in 1889. Early in its operations the Company recognized that a happy and contented employee is more valuable than one whose mind is clouded with fear because of insecurity or misgivings about management.

When Imperial was first organized it was relatively simple to maintain close personal contact between employees and management. But there was danger the old intimacy would disappear when the Company expanded from activities in a comparatively small area to operations across Canada with thousands of employees. In December 1918, steps were taken to solve this problem with the organization of a department responsible for industrial relations. From 1918 to 1944 the principle function of this department was the administration of the Annuitant and Benefits Plan. Since 1944 it has been known as the Department of Employee Relations.

The president himself is in active control of employee relations, with a full-time director as his chief adviser and a staff of specialists to administer the various functions of the department. Much of the work consists in long-term planning, shaping policies for approval by the president and board of directors, and developing the means by which approved policies are established and administered by the operating departments.

Activites of the present department are broad in scope embracing: research, development, and administration of all pension and other security plans; job evaluation, salary and wage co-ordination; Among the most important functions are the study and development of personnel and labor-relations policies and supervision of the Company's training scheme. The executive development program provides means whereby men showing special talent can obtain the necessary experience. In accident prevention work the objective is safe working conditions in all jobs. Under the Company's new medical set-up, a complete record will be kept for each employee of the medical history of each employee from the time he was born. Periodic check-ups will be made and if anything is found wrong, the employee will be informed and advised to see his own doctor for correction. These records are strictly confidential.

Oil is essential to the country's economy and the business has become highly complex. Perhaps no other industry calls for wider variety of trades, special skills, or intensive professional training. Thus the Company is concerned with problems affecting geologists, drilling crews, pipe line men, sailors on tanker ships, refinery workers, research chemists, physicians and engineers, truck drivers, marketing men, office workers and all the other varied assortment that make up Imperial's personnel list. Moreover, the fact that Imperial Oil operates across Canada and in Newfoundland means that regional differences require careful study and research so that all groups may receive necessary consideration.

Imperial is anxious to attract the best type of employee for all jobs and to reduce labor turnover to a minimum. It acts on the principle that industrious and ambitious workers are attracted by progressive management, opportunity for advancement, good wages and sound benefit plans.

All prospective employees are personally interviewed and every effort is made to place each employee in the job to which he is best suited. Central employment offices review applications for work and refer those that appear to be within the departments requiring additional staff. Acceptance of any applicant, however, is at the discretion of the head of the individual hiring department.

At joint council sessions, employees and management come to have a better understanding of each other's problems. The Company's first joint council was organized in December 1918.

Various reforms and improvements were brought about within the Company, not by agitation, strikes and bitterness, but through willingness on the part of both management and labor to work together and meet each other half way. Because of co-operation on both sides, Imperial has had no major difference with labor in its entire history.

As a policy, the Company tries to satisfy the legitimate needs of its employees, which may be summed up as a desire for: justice, status and good working conditions, security and opportunity. No employee or prospective employee of Imperial is discriminated against for membership or non-membership in any church, union, society or fraternity.

Imperial employees have full democratic representation to serve their best interest through their joint councils and they are at liberty to choose any other form of bargaining agency to represent them.

The joint council system is an adaptation of a formula in the development of which Canada's Prime Minister, W. L. Mackenzie King was associated in his days as a young sociologist working with labor problems in the United States. Imperial's first joint council was organized in December 1918 to maintain personal contacts between the employees and management after a period of great expansion. As of January this year there were 61 joint councils in the Company: six in the manufacturing departments, 41 in the marketing divisions, one in the producing department and 13 in the marine department. Others are in the process of formation. There are also four joint councils in the Canadian affiliates of Imperial Oil. In 1946, employees at the400 refinery elected to be represented by the United Oil Workers Union, Local No. 3, and the Company has recently negotiated an agreement with them.

Every year those Imperial Oil employees represented by joint council elect their delegates by secret ballot. Each council deals with the problems of the unit in which it is operating.

Every year those employees represented by joint council elect their delegates by secret ballot. The Company appoints an equal number of delegates and the combined body becomes the joint council.

Each council is concerned with the particular interests and special problems of the unit in which it operates. To a considerable extent each council has developed its own methods of conducting business and no standard written constitution for joint coun-

APRIL 1947

Joint Industrial Council
PLACE BALLOTS HERE
All aspects of employment, wages, and working conditions are matters for determination by the council. If an employee has a grievance, he can have it settled promptly through a procedure instituted by the joint council.

Through the machinery started by good employee relations and the aid of the joint councils, Imperial has over the years been able to pioneer in improving working conditions in the Canadian oil industry and in introducing employee benefit schemes.

In paying good wages and salaries, Imperial has been a leader, setting a standard for the oil business that has been fair and equitable and well above the national industrial average.

Imperial adopted the eight-hour day in 1919 and in 1922 the forty-hour week was established for its employees. In 1936 a national employment commission survey revealed that a majority of Canadian employees worked on schedules of from 45 to 48 hours a week and that 31.7 per cent. of all industries the weekly average was 49 or more hours.

While vacations with pay for "white collar" salaried personnel have been in effect for quite a few years in most Canadian industries, men working on the hourly wage basis did not have vacation privileges until comparatively recently. However, Imperial provided vacations with pay for wage earners 10 years ago. A survey made in 1928 revealed that in 303 representative industrial firms an average of only 54 per cent. of the employees were granted paid vacations. In recent years, paid vacations for wage earners have become much more widespread and in some provinces are now a legal requirement. All Imperial employees, wage earners and salaried personnel alike, are entitled to two weeks vacation with pay annually after one year of service with the Company, and three weeks with pay after 15 years' service. Imperial Oil provided vacations with pay for wage earners ten years ago.

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Imperial had a retirement plan in operation as early as 1919 and an informal program existed for many years before that date. Even in 1947 such plans are not general in Canadian industry although there has been a marked improvement in the last ten years. In 1957 it was estimated that at least 70 per cent. of the wages and salary earners worked for companies that had no formal pension projects for their employees.

The Company’s pension plan has evolved from the annuity plan of 1919, which was replaced by the 1932 plan to which was added the 1939 Thrift Plan. The present Thrift Plan has a three-fold purpose, embracing annuity, savings and stock purchases. Basically, it provides that when an employee attains a specified percentage of his salary (from 3% up to 7% of the salary) earned up to 65% of the salary is matched according to the employee’s contribution. Over 8,500 employees subscribe to the Plan and since 1939 to the end of 1946 there have been employee deposits of more than $7 1/2 million dollars to which the Company has added more than $5 million.

The Annuity Plan as revised January 1, 1946, retains pension credits previously accumulated and now provides a pension, additional to that provided under the Thrift Plan. This is sufficient to ensure in total a yearly pension equal to 3% of total salary or

Eighty-nine years of age, Walter H. Bill of Halifx is the oldest Imperial employee. He retired in 1942 from Halifx refinery. The Company had a retirement plan in operation as early as 1919 and before this there was an informal program.

Imperial Contributions to Employees' Security Have Totalled, since 1919, More Than $25,000,000

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wages earned during the years in which the employee participated in the revised program. In 1946 nearly $800,000 was paid out under the annuity plan.

The employee receives his pension immediately on retirement. The Thrift Plan pension is guaranteed for a minimum of five years so that if the employee dies soon after retiring, his beneficiary receives the pension until the end of the five-year period.

Participation in the Thrift Plan is entirely voluntary. When an employee decides to join, a minimum amount equal to six per cent of his earnings (obtained in equal parts from his contribution and that added by the Company) must be allotted to the purchase of an annuity. Beyond that, other amounts may be assigned at his request to the savings portion of the fund to accumulate as cash savings or be used in the purchase of Imperial stock if he desires. Like John Brown, over 5,000 employees of Imperial are shareholders of the Company. When the employee stock purchase plan was launched in 1920, it attracted wide attention in the business world.

These are the main points about the Thrift Plan. If an employee leaves the Company for any reason, all cash, stock, and annuity policies to his credit in the Thrift Plan are turned over to him.

While he worked for Imperial John Brown had no fear that his wife and children would be left destitute if he should die suddenly. This was because the Company’s Death Benefit plan and Group Life insurance arrangement would supplement his savings. On the death of an employee who has been with the Company for a year or more, the dependents receive a Death Benefit payment which will equal from three months to a year of his salary, depending on the length of service in the Imperial. The employee’s death does not pay a cent for Death Benefits protection. All such payments are a Company contribution and since 1919 have totalled more than $1,500,000.

For still further protection the employee can take out group life insurance under the Company’s plan, at low cost. This plan was inaugurated in 1930 and any regular employee is eligible after three months’ employment. If application is made within five months from starting work it is accepted regardless of the worker’s age, physical condition or occupation. Later applicants must pass a medical examination. The maximum purchase of the insurance depends on the employee’s earnings and he pays only 60 cents a month per $1,000 insurance coverage because the Company also makes a large contribution. Since 1939 the Company has expended nearly $800,000 for the Group Insurance Plan.

The employee may receive help from two sources if he has some form of illness or accident. First, if, after working with Imperial for a year, he falls sick or is injured, he comes under the Company’s Sickness and Accident Benefit Plan, all cost of which is paid by the Company. Then, through the Hospitalization and Surgical Benefit Plan, he may receive further assistance for himself or members of his family when it is needed.

Through the Sickness and Accident Benefit Plan, employees receive payments during sickness for varying periods up to a maximum of one year depending on length of service. These payments also are made for accidents off the job and special benefits supplement the allowances provided by Workmen’s Compensation when an accident occurs at work. Last year the Company paid out over $17,000 in disability benefits.

The Hospitalization scheme was introduced in 1944 and is a form of insurance to which the employee and the Company both contribute. It pays for the hospitalization of the worker or his dependents for 40 days up to $4,000 a day, with a maximum allowance of $40 for special services required for hospital treatment. A further allowance for surgical operations may vary from $150 to $150 depending on the operation. For this protection the employee, upon his own choice, may contribute from 40 cents a month to a maximum if it is simple up to $1.45 if he is married with several dependents. A special coverage is provided for Saskatchewan employees to co-ordinate with benefits provided in that province under the Saskatchewan Hospitalization Act. To keep the plan operating the Company makes a larger contribution than the employee, and since the plan was introduced has supplied approximately $485,000 while employees contributed almost $365,000.

All these security measures have a sound economic base in addition to that of the humanitarian reasons which led to their development. Through the retirement system, channels of promotion are opened up for ambitious young employees as the senior men retire. With the other plans, this attracts better workers, reduces labor turnover and improves morale.

Many other factors contribute to good working conditions in Imperial. Among them are the carefully developed training programs described in an article elsewhere in this issue.

Many of Imperial’s executives have risen from the ranks. An outstanding example is the case of Tom Montgomery, presently retired from the Company, whose life story appeared in the October, 1946 Ro-
OTHER COUNCILS

A picture of the newly-formed joint council at Gander, Nfld., was not available in time for publication. Other joint councils which are also in process of formation are not pictured in this series.
HE SELLS SURFACES
FRANK A. HOGAN IS THE VETERAN HEAD OF IMPERIAL ASPHALT SALES FROM COAST TO COAST

In ancient days when seven kings and seven
As of chieftains ruled the Krome's clear, this material
that was heard above the din of the battle of the
were crossed by the first car, the Airof, and ever since it has echoed down the centuries of time as
indomitable spirit of the Irish leaves its imprint.
It is often said (by the Irish) that there are two
kinds of people in the world — the Irish and those
who wish they were Irish. Whether that is the case
or not wherever you go on the face of the earth
from Alaska to Australia, from the Harbors Bay Coast
to the Klyde River — you will find Irishmen.
Imperial Oil Ltd. has the largest of men of Irish de-
cent and Frank Anthony Hogan is an outstanding
example. He has been associated with asphalt, its
production and sales for nearly 41 years, 31 of them
with Imperial. For 27 years he has been manager of
Imperial’s asphalt and road oil department during
which time the company has sold and delivered over
4,000,000 tons — more than 27 million barrels of
asphalt products from B.C. to Newfoundland.
Frank is one of those transplantated sons of Erin
with a big frame, shouldeless energy, a quick mind and
a quicker tongue which, though lacking a bit of
grace, has a pleasant flow as he had been taught on
the Blurry Stove. His straightforwardness and drive
have won him as loyal friends across Canada.

The transplantation of Frank and his family began be-
fore he was born when his parents came to the United
States from Tipperary County, Ireland. His father
was born in Tipperary and his mother in Clongherian.
The Hogan clan began as a 15th century family des-
cended from an uncle of King Brian Boru. They were
settled at Ardfinnan, Tipperary, and a branch was
also located in southwest County Cork. Later the
name also became usual throughout Munster.
Frank was born on Nov. 8, 1896 in Sycamore,
Illinois, where he grew up and was educated. He studied
civil engineering for two years at the University of Michi-
igan before graduation. While still a student he spent one summer holiday working be-
neath the sidewalks of New York when the Manhat-
tan subway was being built. But when he chose his
life's work, he decided it would be best to do with "sur-
faced", and he started with the Barber Asphalt Pav-
ing Co., Philadelphia, for seven years, followed by
three years with the Warner Quartzite Co., New York.
In 1916 he joined Imperial Oil helping in the con-
struction of Montreal East refinery, the first refinery
in Canada to produce asphalt. He became head of
the company’s asphalt and road oil department in June,
1919 and moved to Toronto.

Since then Imperial’s asphalt business has expanded
due to such an extent that today six of its seven re-
fineries — all but Norman Wells on the fringes of the
Arctic — are making bituminous (asphaltic) products.
Four refineries followed Montreal East by beginning
asphalt production in 1921; Brantford in 1929; and then
the others. And all the while Manager Hogan and his
department were merchandising the asphalt as fast as
it could be turned out. Last year was the biggest
in the asphalt department’s sales history and 1947
portends to be even bigger.
During the first World War Mr. Hogan was on
loan to the Imperial Munitions Board (producers of
the Department of Munitions and Supply) to super-
intend construction of the Beaumont airport, 28 miles
to Hamilton, Ont. In World War II, through his
department Imperial supplied the asphalt for run-
ways at approximately 100 Canadian airports of the
British Commonwealth Air Training project. Impe-
rial asphalt also surfaced the big U.S. naval base at
Argentina, N.F.

In the six months of 1941, when Mr. Hogan was in
charge of sales, 44 per cent of Imperial asphalt was
shipped in package. Today 36 per cent goes by tank
cars. For the first three or four years of Canadian pro-
duction asphalt from Montreal was shipped all the
way across Canada to Edmonton, to take care of part
of Alberta’s road construction. Subsequently the
western refineries began manufacturing the product.
Mr. Hogan and his eight field men whom he calls
"the backbones of the department" cover Canada
from coast to coast. The night air is: K. D. MacDonald,
Toronto; E. L. Paterson, Vancouver; John N. Mc-
Lean, Winnipeg; Russell C. Lye and W. Harry At-
tiltair, Hamilton; Gilbert E. Peterson, Peterboro;
Rinal Dagnino, Montreal and O. B. Biringer,
Halifax. Some of them — "the boys of the old brigade"— have been with Mr. Hogan 25 years or more.

Imperial products have made bituminous pave-
ment or surfaces for highways in the Okanagan Val-
ley, the Caribou Trail, Red River Valley, national
parks such as Banff and Keenebosa, provincial roads
in the prairie provinces, sections of the Sfraguen
highway through Northern Ontario’s mining country
and stretches of the scenic Goose roads and Nova
Scotia’s beautiful Annapolis Valley fruitlands.
There is a big backlog of work to be done on Can-
ad’s highway and road systems which has been ac-
complished since World War II began in 1939.

Mr. Hogan remarks.
Canada’s official highway mileages up to the end of
1944 totals 1,053,930. Of these 2,518 were paved with
congestion and Mexico have been paved
concrete and 16,224 were bituminous types. Since
1944 hundreds of additional miles have been paved
or are in the course of preparation. "This means that
a total of about five per cent. of all highways in the
Dominion are now paved," explains Mr. Hogan.
"The road for asphalt is unlimited and will be gov-
erned only by crude supply and production in com-
ming years, with transportation by land and trucks
and cars and trucks increasing every year. In a normal year we have 1,000 tank cars in asphalt service.

Construction of prairie province highways with
asphalt started on a large scale in 1938 in Alberta and
Montisoba, he recalls. On secondary prairie roads oil-
ing was found excellent for gravel pavement and
with a resultant benefit to surrounding

Inside the extensive use of asphalt in Canadian
road construction, one-third of Imperial’s bituminous
output goes into the manufacture of asphalt roofing
materials and siding and aiding for the 12 major manufacturing
concerns from Vancouver to Halifax.
"Ten per cent. of the company’s total is used for
specialties such as floor covering, mastic type
toilets, electric wire and cable insulation. Half of
Calgary refinery’s asphalt production goes to make
binders for liquid coal briquettes.

Despite his lifetime in the asphalt business, Mr.
Hogan is not taking any laurels personally. "Canada
is a big country," he says bouncingly. "Supplying the
products she needs is routine daily business. It's a
steady grind."
REPORT ON REINSTATEMENT

HOW IMPERIAL HAS CARRIED OUT THE PROMISES MADE TO ENLISTED EMPLOYEES AND TO WAR-TIME WORKERS

IMPERIAL OIL, now has reached the last stage of its program for the reinstatement of World War II veterans. Of its 2,173 enlisted employees who survived the war, 82.4 per cent, returned to the Company and only 28 men still remain in the armed services or receiving hospital care.

The reinstatement program is the result of careful plans which began in the tragic days of 1939 when Hitler's hordes were pouring over the border into Poland. As soon as war broke out the Company recognized the need of a policy to help its employees who would enlist to fight the Nazi

Thus, on Nov. 1, 1939 – less than two months after Canada declared war and nearly two months before our first army units reached Britain – G. Harrison Smith, then president of Imperial, announced that regular employees who enlisted would retain their status with the Company and jobs would be waiting for them on their return.

This policy was defined two years before parliament passed the Reinstatement in Civilian Employment Act of 1943 which made such guarantees general across Canada.

Right from the beginning, Imperial's plan went beyond the provisions made by the government, for the Company created a Special Defence Payroll. Each regular employee enlisting for active service who had one or more year's employment with the Company by Sept. 1, 1939 received a bonus of a month's salary on enlistment. Where service pay was less than that being earned with Imperial at enlistment, the Company made up the difference.

The special defence payroll helped 959 employees and the cost was $1,908,291.86. The Company also arranged for continued participation by those employees in its employee benefit plans, such as group life insurance, hospitalization and thrift plans. These employees also qualified for annuity credits and death benefits.

During the war, Imperial's operations were as much those of a "war industry" as the manufacture of munitions, and employment rose from 7,471 in 1939 to a peak of almost 11,000. When victory for the United Nations was in sight in April 1945, Imperial's full reinstatement program for veterans, also designed for wartime employees, was announced by the Company's late president, R. V. LeSueur. As carried to fulfillment under H. T. Hewson, now presi-

dent, the program has five points, providing for:

1. The reinstatement of all enlisted employees who desired to return to the Company.

A total of 2,249 employees enlisted with the navy, army or air force. Of these 76 men were listed as killed, or missing or totally disabled. 1,791 were reinstated and the balance, other than the 26 still in the armed forces, did not apply for reinstatement. Many of the latter took advantage of government re-establishment credits to go into business for themselves. The figures include 21 women who enlisted and 11 who were reinstated. (Dan Cupido, no doubt, influenced some of the others.

The majority of those who did not rejoin the staff had less than one year on the job. A large group who enlisted had 10 to 15 years' service.

Government legislation (as clarified Jan. 11, 1945) provided for reinstatement of those employees with three months or more service with a company prior to enlistment. However Imperial reemployed veterans who had been with the Company less than three months before enlistment. In some cases, the men had had only one month's employment.

2. The hospitalization of all veterans who were physically handicapped through service

Of the reinstated personnel, 70 or 3.9 per cent returned with war disabilities. Upon medical advice and in accord with their own wishes and capabilities, they have been placed in the most suitable positions available. In addition, 30 partially disabled veterans who had not worked for the Company before joining the armed forces have been taken on the payroll.

3. Training to assist veterans on their return

Two years ago Imperial Oil adopted an extensive Canada-wide program of supervisory and employee training within the industry. This has helped new and old veterans to keep abreast of petroleum developments.

A total of 961 – more than 50 per cent of those reinstated – have been placed in different jobs than they were filling before enlistment or call up. A majority required instruction on the job to qualify for the position to which they were transferred.

In addition, more than 100 employees were granted leave of absence to continue their education in universities, government-sponsored technical courses or matriculation courses leading to university.

4. The continued employment where possible of persons employed during the war

The Company's largest contribution to reconversion and national stability was the decision that as far as possible employees hired during the war would be retained in spite of the priority given to enlisted employees returning home.

The Company's employment rolls jumped nearly 3,000 during the war. As of Dec. 31, 1946 there were 10,572 on the payroll of the Company and its affiliates in Canada, over 2,000 of whom were hired on a "temporary" basis but whose employment has now become permanent within the limits of business.

5. The employment, where possible, of veterans who have not previously worked for the Company

In recent years, Imperial has employed 1,337 veterans who were not former employees. Of these new personnel 987 are still with the Company. The newly employed veterans included 291 who had enlisted straight from school and had never held a full-time civilian job. Twenty-one veterans have been newly employed, four of whom never had a commercial job before.

Summary

Imperial Oil has fulfilled the promises made to veterans and has gone beyond government requirements for rehabilitation and readjustment.

Imperial today has 2,582 World War II veterans on its payroll. One thousand of them never worked for the Company before. Besides this, retirement of older personnel, expansion of business activities and a return to the pre-war 40-hour week enabled the Company to keep on some 2,000 "temporary" war-time workers. Imperial will continue to do its utmost to protect the interests of veterans and those on the home front who backed them up.

With a stop watch, Jim, now an inspection lab technician, is seen timing the flow of a light petroleum product in a viscometer.

BACK TO IMPERIAL

Pvt. J. I. B. Laws left his job at Gannett refinery to join the RCAF in 1940 as an AC 2.

He served five years, had two tours of "ops" and won the DFC and Bar. His bombing targets included Hamburg, Frankfurt, Garmisch, Stuttgart and Cologne. Like many another Imperial Oil man, Jim has returned to the refinery. Away for four years, he brought an English bride home with him.

IMPERIAL OIL REVIEW
THE CINDERELLA PRODUCT

PETROLEUM COKE IS BLACK AND DRAB BUT IT HELPS TO MAKE CLEANING METALS AND IS THE BASIS FOR IMPORTANT INDUSTRIES

Perhaps it is a far cry from the sparkle of the diamond, the shine of nickel plating and the gleam of aluminum to the drab, black, porous product of the refinery known as petroleum coke. Yet the humble coke is a substitute for the diamond in some of its uses, and on the whole is far more valuable to industry because it helps to produce nickel, aluminum, special steels, chemicals and many other indispensable materials.

Most of us, when we think of coke at all, think of it as a fuel. We know that when it is used in homes the householder has no ash disposal problem. In the metallurgical industries coke is widely used as a fuel because its high degree of purity reduces the possibility of contaminating the metals being refined.

But petroleum coke is much more than just a fuel—it is almost pure carbon, and carbon has many useful properties. It conducts electricity, is highly resistant to the action of chemicals, does not melt, and, in chemical combination with other materials, forms the basis for entire industries.

The importance of petroleum coke in industry is revealed in a war conservation order issued in 1942. One list contained no less than 34 separate applications, many of which can be subdivided into several specific uses.

Besides its use as fuel, coke is used in the manufacture of electrodes; in molded shapes for electrical and chemical purposes; as self-lubricating piston rings, bearings and valve parts; in the refining of various metals; in the manufacture of calcium carbide from which acetylene gas is made; and in the production of abrasives and heat-resisting materials.

In the average home there are sure to be some articles in which there is coke or which coke has helped to produce. The common flashlight battery and the dry batteries used in radios are examples. Carbon or graphite, which in many cases is made from petroleum coke, composes part of the “innards” of these batteries.

Petroleum coke is made in this unit at Barns. Cutting tools, lowered from the derricks above, remove the coke from the drums.
Chlorine is separated from common salt by the action of an electric current that passes through graphite electrodes, called anodes, immersed in a salt solution. In this way we obtain a by-product of chlorine that is used in the manufacture of plastics, and in the bleaching of cotton. Coke-based electrodes, or anodes, have a similar relationship in the treatment of other raw materials from which we get caustic potash, chlorates and many other chemicals.

Graphite has the interesting property of being self-lubricating—"it oils itself"—and thus finds many special applications where lubrication of moving parts is difficult or impossible.

For the same reason piston rings for compressors handling gases which must not be tainted by lubricating oil are made from coke. Meters to measure the flow of gasoline, gases, and chemicals often have moving valve parts moulded from carbon made from petroleum coke.

The refining of nickel at the Port Colborne plant of the International Nickel Co. of Canada uses large amounts of coke. A mixture of nickel oxide and coke is heated in furnaces. The oxygen of the nickel oxide unites with the coke and leaves practically pure nickel for further refining.

Remember the old acetylene lamps for bicycles and motor cars? Such lamps are no longer common, but acetylene itself continues to be useful both as a chemical and, compressed in cylinders, for welding and cutting of metals. Acetylene gas is made by a chemical reaction when water comes in contact with calcium carbide. Calcium carbide, in turn, results when coke and lime are united chemically by the heat of electric furnaces.

Shawinigan Chemicals Ltd. operate what may be the largest carbide plant in the world with a capacity of 200,000 tons a year. In 1948 they produced 340,000 cubic feet of acetylene gas as a raw material for the production of chemicals.

Another important use for coke is in the production of abrasives for grinding wheels, whetstones and coated paper or cloth for sanding. Just before the end of the last century, Dr. E. G. Acheson was searching for an abrasive that would be better than emery, garnet and sandstone. The hardest known substance is the diamond, which is pure crystalline carbon, and Dr. Acheson attempted to convert ordinary carbon into a form and hardness approaching the diamond.

He made a small and crude electric furnace from an iron bowl. Filling this with a mixture of powdered coke and clay, he inserted an arc light carbon into the mixture and connected the wire to the bowl and the carbon rod. A strong current was passed through the coke-clay mixture and the clay was melted. Several hours later he shut off the current, cooled the fused material and broke it open. The result seemed disappointing, until he observed some tiny crystals on the end of the carbon rod.
PERSONALITIES IN THE NEWS

O. C. Wheeler Appointed A Vice President,
International Petroleum Co. Ltd.

"Jimmie" Wheeler joined International in 1921 as an assistant field geologist, and until 1939 was engaged in various types of exploration and development work in Colombia. In 1939 he became a member of the geological staff in Toronto, and was appointed chief geologist in 1937.

Mr. Wheeler was made assistant chief geologist of Imperial Oil in 1942 and chief geologist in 1944. In the following year he became a director of International and relinquished the Imperial appointment.

Walter S. Reid Elected A Director,
International Petroleum Co. Ltd.

Born in Scotland, Walter S. Reid was in the mining industry in Peru when he joined International Petroleum some 25 years ago. He has served continuously in Peru and Venezuela, and is well known throughout the oil industry in South America. For a time he was vice president in charge of public relations for the Standard Oil Co. of Venezuela. He was executive representative of International Petroleum in Peru before his election as a director of the Company.

Otto B. Glenn Receives 40-Year Service Button

Born in Petrolia, Mr. Glenn moved to Sarnia at an early age. In 1904 he joined Imperial Oil in the yard labor department, and a year later was moved to the cooper department. After seven years in this shop he was transferred to the pipefitters department, and in 1917 moved to the process department. In 1920 he returned to the pipefitters where he is presently employed. Mr. Glenn is an ardent sportsman, and in common with many old-timers at the refinery has a fund of stories about the plant's history.

Charles W. Hunt Appointed Assistant Marketing Co-Ordinator, International Petroleum Co. Ltd.

Charles W. Hunt, who has had extensive experience in oil marketing in South America, served at various points in Chile as branch manager of the West India Oil Company and was for two years sales manager of that company. He was then transferred to Buenos Aires in the Argentine where he was sales manager of the West India Oil Company for six years. He returned to Santiago, Chile, to serve for two years as president of the Standard Oil Company, Chile.

Earl G. Dolbel Awarded M.B.E.

Formerly a crew member of the Imperial tanker M S "Canadolite", 4th Officer Earl G. Dolbel has been awarded membership in the Order of the British Empire. The award was made in recognition of the part he played in maintaining high-spirits and confidence when, along with his companions, he was interned in Germany when the "Canadolite" was captured. Mr. Dolbel, born in Gaspé, has been a resident of Verdun, Que. for many years.

THEY LEARN WHILE THEY EARN

IMPERIAL EMPLOYEE TRAINING MAKES JOBS MORE INTERESTING
AND PROVIDES NEW OPPORTUNITIES FOR SELF-DEVELOPMENT

The man with the slightly graying hair came home one evening, slammed the back door, scowled at his wife, barked at the children, shooed the cat and started upstairs.

"For goodness' sake!" exclaimed his bewildered wife. "What is the matter?"

"Classes started at the refinery today — why, I haven't been in school for 20 years," her husband replied, leaning heavily on the bannister, his face disconsolate.

The "little woman" hid a smile and went back to the kitchen to prepare supper.

The next night it was entirely different. The husband came home whistling, kissed his wife, patted the cat, and enquired of his son: "You're studying chemistry, aren't you, John?"

"Yes, pop."

"Well, I need a little help. If the atomic weight of carbon is 12 and ... ."—and so on, through supper and the evening. School had caused him to look at his job almost with the eyes of a chemist or an engineer and what he saw so fascinated him that he brought his subjects home with him. The "book learning" that he was afraid would "show him up" turned out to be something he "should have done years ago."

The school was a war-born necessity at Imperial's Sarnia refinery when the big Polymer Corporation plant for the manufacture of synthetic rubber was being built by the government on adjoining land. Imperial had promised to help the new national enterprise in many ways and had organized St. Clair
Processing Corporation Ltd. to operate many of the rubber processing units which are similar to those used in petroleum refining.

St. Clair needed skilled operators and Imperial provided them on loan. Hundreds of men had to be trained; those leaving the refinery staff had to be told about synthetic rubber; the newcomers replacing them had to learn about oil.

Almost overnight Sarnia refinery became a kind of university, providing courses ranging from first aid to rubber synthesis. About a hundred technical men, key personnel for the new rubber plant, studied subjects that would be post-graduate work in many universities. Other refinery people as well as a number of "greenhorn" received training in safety, fire fighting, combustion instruments, elementary rubber synthesis and petroleum processing.

In groups of 50 the men attended school eight hours a day for three weeks. Some of them had last studied 20 years before, but they soaked up knowledge like a sponge absorbs water. They listened to lectures in a classroom made from a large laboratory; they watched practical demonstrations at the refinery units; and they wrote examinations.

The refinery "university" was a success. The rubber plant was the first in North America able to convert petroleum gases into crude synthetic rubber ready for shipment to the tire factories and other rubber processors. Organized training proved its worth and Imperial decided to have more of it.

Of course ever since the Company had been formed Imperial had conducted some employee training but it was not organized and had no long range plan. In 1943 the manufacturing department established schools in all refineries and courses in petroleum processing, mathematics and more recently blueprinting were made available. In 1944 training became a function of the newly established department of employee relations and co-ordination of training on a Company-wide scale began.

All of Imperial's seven refineries—from Imperialon, across the bay from Halflax, to Norman Wells north of the 65th parallel—now have classrooms equipped for educational and other films and for special demonstrations. Courses assist producing, manufacturing and marketing personnel in self-development, in the improvement of Company products, and in securing better relationships between supervisors and men. To date almost half of Imperial's 10,000 employees have participated in one or more of these courses.

Training has taken three main trends: (1) supervisory training on Company time; (2) employee training on Company time; and (3) employee educational courses, taken on employee time either between shifts or in the evenings. Supervisory training is a story in itself to be told later.

Employee training given on Company time, includes those courses designed specifically to meet some production need, to provide skilled men for units under construction, or to improve the general efficiency of the working team. One of the most successful courses in this category has been the Preventive Maintenance Course for pump operators. It has been introduced at Imperial, Montreal East, Sarnia, and Calgary refineries, as well as in units of the Royalite, Madison, and Valley Pipe Line companies in the producing field in Turner Valley.

Literally thousands of pumps are used in operations at these plants and operators are taught to realize that a pump is to equipment what a heart is to your body—a very vital part.

The men show a decided interest in the courses and demonstrations which are extremely practical. This pays dividends through a reduction in pump failures for Imperial has found that when a worker makes a mistake it is more often because of a lack of understanding of the operation than because of negligence or carelessness.

Montreal East, Sarnia and other refineries report very good results from the pump maintenance courses.
After the course the man remembers how overspeeding a pump uses up three times the proper amount of steam with only 2 or 10 per cent. increase in flow. They see the need for using the correct lubrication in the right container at all times. They remember that bearings ride on a film of oil only 8 to 10,000ths of an inch thick and loss of oil for a matter of seconds will cause damage. When unusual noises arise in motors, the man on the job is qualified to judge the sound and act accordingly, whether it is a "whistle" a "hum" or "bumping".

Before courses could be given, instructors had to be trained in the basic fundamentals of imparting knowledge to others. Last year more than 87 instructors received Job Instruction Training under the Canadian Vocational Training plan and they, in turn, presented the 10-hour course to 907 employees who may be called upon to give instruction "on the job". This year will see J.I.T. extended to many more employees in the producing and manufacturing departments and, to a lesser extent, to employees of the marketing department.

Jab Safety Training is another government-sponsored course given employees on Company time. It is an extension of the J.I.T. course and stresses the importance of "instructing a man on the safe way of performing an operation." After 10 hours of instruction employees hold 15-minute follow-up meetings at regular intervals at which they examine each step of some job operation, note the safety hazards involved and arrange safety instruction to meet these hazards. This develops a high degree of "safety-consciousness".

The pump course, Job Instruction Training, and Job Safety Training, are given on a department-wide basis. In addition, special courses, such as the welding course at Sarnia, are offered by individual units on Company time to meet local needs. Perhaps the most outstanding of these was the 8-hour Process Training Course given at Montreal.

East refinery. Forty-three employees attended lectures for two weeks to obtain information useful to them in the operation of the new equipment and utilities being installed under the refinery's modernization program.

Company-sponsored classes attended by employees on their own time are designed for men and women who are anxious for self-improvement, particularly those who did not have a chance to acquire an extensive formal education. Some courses deal with the various broad phases of petroleum processing and others teach practical operations.

Blueprint reading and sketching, and slide rule instruction, are examples of the practical courses. Blueprint reading, often called the universal language of industry because, with the exception of a few marginal or inserted notes, these drawings can be understood by a trained workman whether he is English, French, Spanish, or any other nationality. Knowledge of the slide rule, too, improves the worker's efficiency because through its use he can rapidly perform multiplication, division, and other mathematical feats which otherwise would take a long time to figure out on paper.

At Montreal East refinery, where business is transacted in both of the official languages of Canada, employees can attend classes in conversational English and French. Here, too, all training is presented in both languages.

Care is taken to avoid duplication of existing educational services. Where possible, training co-ordinators work closely with local technical schools and many useful subjects are thus made available to employees. At Sarnia, for example, sheet metal layout and introductory mathematics courses are presented to the employees at Sarnia Collegiate and Technical Institute. The petroleum processing course, on the other hand, is held in Company classrooms.

Apprenticeship training for mechanical department employees has been carried out at Imperial Oil refinery for several years in co-operation with the Nova Scotia department of vocational training. Under the apprenticeship contract, the student works at his trade in the refinery and attends technical school classes two half-days a week on his own time. The apprenticeship lasts for four years. As he progresses, the apprentice receives annual pay increases and finally emerges with a wage equal to that of a journey mechanic. Extension of the apprenticeship training to process workers is being considered.

Marketing divisions have special forms of training, among them a course for burner mechanics. Office educational meetings have been widely held at which employees outline their individual duties to present a full picture of office activities for their fellow workers. Similar meetings have been organized for fruity employees of the producing department and of the Royalite, Madison Gas, and Valley Pipe Line companies. Talks are given on refining, marketing, and other phases of Company operations and these are sometimes followed by a refinery tour.

At Buhler, apprenticeship training is carried on in co-operation with the government. Here H. M. Beaton instructs Gordon Shawell and Vernon Semple, two machinists' apprentices.

Tanman, Bruce Sparks, 23 years with Imperial Oil, tells Tom Hugel, writer's helper, how to follow a blueprint. Training in blueprint reading and sketching has been very successful.
THE PRINCIPAL oil product of early Canadian refineries was kerosene, and the lamps it fed, by giving more light, widened the field of nocturnal activities. In keeping with that tradition, the industry still "burns midnight oil" to keep Canada supplied with many petroleum products.

Men engaged in producing, transporting, refining and marketing crude oil and its products work day and night shifts to bring oil from the ground, curtail to a refinery, process it and deliver its derivatives to the consumer.

The fact that the petroleum industry is concerned in processes that cannot be interrupted is the main reason for continuous operation in many phases. Just as the tankers cannot pause for the night on the ocean or lakes, or the tank cars stop on route on the railway lines, the massive equipment at the refineries must remain in constant use and, in a sense like the furnaces of the steel industry, cannot be allowed to "cool" or shutdown except for periodic inspection.

Although the equipment works day and night, the men who control it have eight-hour shifts. Imperial was the first oil company in Canada to adopt the eight-hour day for refinery workers and tanker crews, and gives constant attention to improving working conditions where possible.

Costa of petroleum products to the consumer are less because of full-time operation, for the capital investment in plant and equipment remains the same whether used 12 or 24 hours a day and whether the production is at half or at full capacity. Also, no time is lost unproductively in starting and stopping operations when the units run continuously—a further saving which is reflected in cost and price.

Drillers, working in three eight-hour shifts, keep their bits grinding over deeper day and night until the job is finished and they have a productive well or a disappointing dry hole.

Tankers too work around the clock. As soon as they berth—their hours vary—fresh cargo is loaded or unloaded from the tanker.

Refinery units work 24 hours a day, turning crude oil into a wide variety of products. Here a production control engineer checks a clip with the guard before going through the gate.

Trains of tank cars roar through the night to deliver crude oil and its products. Here a man checks the valve of a tank car as crude oil moves through the maze of refinery equipment to emerge as more than 650 different products, each meeting testing safeguards quality. Sample boys work on shift throughout the night to keep inspection laboratories supplied with samples.

Continuous production keeps lights burning on the crude distillation towers at the topping and coking unit, in which the separation of crude oil into hundreds of products commences.

Imperial Oil burner mechanics in the larger Canadian cities are available day and night to answer householders' calls for emergency service. These repair experts soon have the burner working again, eliminating the danger of an overnight freeze.
PLOWMEN RETURN

CANADA'S CHAMPIONS ARE BACK FROM BRITAIN WHERE THEY VISITED MANY AGRICULTURAL AREAS BUT FOUND PLOWING MATCHES CANCELLED BECAUSE OF BAD WEATHER

Canada's champion plowmen, winners of the International Plowing Match sponsored by the Ontario Plowmen's Association, are back in the Dominion with new agricultural ideas gathered on a six-weeks' tour of the British Isles.

In the group were George Frederick (Fred) Timbers, Stouffville, Ont., who won the Easo Open Tractor Class at the International Plowing Match; Alex Lindsay (Sandy) Black, Guelph, the Easo runner-up; Floyd Alexander (Pat) Beckley, Stouffville, Salada gold medalist for horse-drawn jointer plows in the Trans-Atlantic Class; James Austin Nairn, Munro, Ont., Salada silver medalist; Clark Young, Unionville, Ont., treasurer of the Ontario Plowmen's Association and George Thomas Waldie, Stratford, Ont., manager of the group and an O.P.A. director.

Behind them now is an itinerary which took them from Toronto to New York, across the Atlantic on the Queen Elizabeth to Southampton and on to London. There they saw historic landmarks of the Empire's capital and the scars which Nazi bombers had left on the city.

Their itinerary listed such agricultural showplaces as the King's farm at Windsor, the cattle sale at Reading, the Chivers fruit farms at Cambridge, Yorkshire farms, Edinburgh's proud castle, Perth's Aberdeen Angus cattle and Glasgow's famous draught horses held their interest.

Storms which swept Britain hampered their movements and heavy frosts caused the cancellation of plowing matches at Workington, Lancashire, and at Belfast in which they were to have competed. However they had opportunities to observe every phase of British agriculture.

After visiting Ireland they returned to Scotland at Stranraer, where they inspected a dairy herd. Later they inspected some of the small farms in Ayrshire before returning to London.

The trip for the six men was made possible by Imperial and the Salada Tea Company of Canada Limited. The two companies paid for the trips of the champions and their manager. The Ontario Plowmen's Association sponsored Mr. Young's trip. While abroad Mr. Young wrote a series of weekly articles for Canadian papers.

Imperial has been actively interested in agriculture ever since the Company was formed in 1880. In the early years Company organization was developed to meet farmers' needs for kerosene and it was expanded when the internal combustion engine brought power to the land.

The trips to Britain were awarded to the Easo winners in recognition of the Company's alliance with agriculture, so that champion Canadian plowmen might observe at first hand the farming methods which have kept the British Isles fertile for so many hundreds of years.

Enroute to an exploration site in western Canada this care drilling unit stops to take on gasoline and oil.
Spring