Oil for British Columbia

A major change in the source of oil for Canada's west coast has taken place with the start, in October, of regular rail shipments of Alberta crude to Imperial's Looch refinery near Vancouver.

California has been the chief source of crude for British Columbia and until recently Looch has been running on oil shipped in by tanker. Since Korea, however, California's exportable supplies available for Canada have been shrinking while the B.C. demand has grown steadily.

To assure its B.C. supply Imperial has arranged daily rail shipments of 5,400 barrels of Los Angeles oil over the 815-mile route across the mountains. This will supply more than half of Looch's present requirements and for the time being the rest will come from California.

The rail shipments are a temporary measure and will continue until the Trans Mountain pipe line is completed next year. When the pipe line is in operation Alberta will supply all of Imperial's crude oil requirements in B.C. Looch's capacity is being enlarged to 22,500 barrels a day and the expansion should be complete when Trans Mountain opens.

It is fortunate that Canadian oil is becoming available for use in the far west just at the time when the U.S. is changing from an oil-exporting nation to one that, on over-all balance, is an oil-importing area.

Current Items

Imperial has opened a purchasing office in Halifax looking toward increased purchases in the Maritimes of equipment and supplies required for Company operations in that area. Manager of the new office is O.K. Smith, formerly of the Company's general purchasing department in Toronto.

Work on the last section of Imperial's Maritimes-to-Toronto petroleum pipe line has been progressing on schedule and it is expected the line will be in operation for its full length by the time this appears in print.

A printing error occurred in the first chart illustrating the story "A Record for the Record" in the September Review. Colors in the key to the chart were reversed; actually the white bars indicated 1900 refinery throughputs and the shaded bars the throughputs for 1951. Some copies were in the mail before the error was noticed and corrected.

Seventeen tank cars have been built in Montreal by Canadian Car and Foundry Co. Ltd. for Imperial to be used on the narrow gauge Newfoundland railroads. Gauge is three feet, six inches compared with the standard four feet, 8½ inches. Shipments were made by freighter in mid-October.

As we go to press the new "cat cracker" at Imperial's Edmonton refinery is about to go on stream. The catalytic cracking unit has been completed at a cost of some $23.5 million and will increase the refinery's output of high octane gasoline. Other refinery expansion and modernization projects are under way at Stettin, Regina and Looch.
An RCAF veteran’s dream of a business of his own has come true. He bought a service station and became an Imperial dealer, one of the 10,000 independent businessmen who sell Esso products across Canada.

How George Ball Became His Own Boss

George Ball, an ex-RCAF air gunner in his middle thirties, was travelling for an automotive parts supply house when he first saw the Kawartha Garage. It stands beside Number 28 highway on the northern outskirts of Peterborough, Ont.

With the war four years in the past, George was doing well as a salesmen but, like many returned servicemen, he had dreams of owning his own business. He wanted to be his own boss; to make money, of course; and to enjoy life in a community with his wife and his home and his friends.

He had never had more than a general interest in the service station business, but the location of the Kawartha Garage appealed to him. Peterborough, surrounded by the Kawartha Lakes, is in the heart of the province’s tourist country. The hunting and fishing are excellent. George likes to do both.

His first appraisal of the station’s business prospects was not too encouraging. The Kawartha Garage was the only Imperial outlet on that well-travelled stretch of Number 28 but dealers in competing products were numerous and well-established.

On the other hand George liked the look of the fast-expanding industrial city of Peterborough, home of Quaker Oats, Canadian General Electric, Western Clock, De Laval, Outboard Marine and other progressive industries. He decided that business in the area would continue to grow and that the Kawartha Garage’s share of it could be increased.

He worked out arrangements with the owner and, in the late summer of 1949, with his savings during and since the war, with the help of the Department of Veterans’ Affairs and some money provided by a silent partner, he bought the station. That was when his dream began to come true.

George started in business with some handicaps but also with some definite factors in his favor. He had to learn the service station business from the ground up. And he had to become known in the area. Neither he nor his young wife had had any previous close association with more than a handful of the 35,000 people in Peterborough. At first they could have no personal following to help them face the strong competition.

The physical set-up of the station was good. The property which George had bought has a substantial frontage on the west side of Number 28 and is in fair depth. His purchase included the roomy one-storey white stucco garage with its office, two grease pits and equipment, and also another smaller building.

George’s chief assets were his confidence in his ability to organize and to sell, his wife who would give him active support in helping to run the station, and the fact that he had some definite ideas to start with.

Keystone of his plans was to retain the Imperial Esso franchise. This was a matter of business negotiation and by no means automatic. Imperial, naturally enough, is happy to find dealers who are competent, energetic, and good citizens, because to millions of Canadians their local dealer is “Imperial”.

The Peterborough lift locks, a popular tourist attraction. George settled in Peterborough because it is busy, thriving and has the tourist traffic of beautiful Kawartha Lakes.
A major factor in George Ball’s success has been the help of his attractive wife, Helen, who takes daily pump readings and does bookkeeping. Here she checks cash.

Because George had never sold so much as a pint of gasoline, R.B. Baker, the Company’s resident sales representative in Peterborough, had to rely on his own judgment of character and ability in sizing up the new dealer. A former Air Force man himself, Baker decided that George would make a go of things, and he has never had any occasion to change his mind.

George was now assured of his supply of Imperial petroleum products and of Atlas tires, batteries and accessories as his stock in trade. What he did with them depended entirely on his own efforts; his relationship with Imperial was that of an independent businessman who had made a contract to sell the Company’s products. All Imperial Eso dealers are independent. Four out of five own their own stations; the remainder either are purchasing their premises with financial assistance arranged by Imperial or are operating Company-owned stations which are leased to them.

Several other vital decisions were necessary at the outset. As an independent businessman, George made them for himself. Imperial would advise if called upon, but could not make the decisions for him.

He decided that the Kawartha Garage would carry a full stock of the emergency parts essential to car operation. He decided that he would offer service at any time it was needed, even if he had to stay open at night to give it. He decided that he would make his service station part of the community life.

His ideas have paid off handsomely. The road hasn’t been an easy one, and the hours of sleep George has lost in three years would make a country doctor shudder. But last year he bought out his silent partner and now he is on his own, successful by almost any standard and beholden to no one.

Last year the Kawartha Garage sold enough Eso oil to take your car around the world nearly 150 times. Repair and maintenance business keeps two mechanics busy all day and one occupied all night. And George is planning to expand.

It wasn’t all clear sailing. A problem right from the start was to obtain competent help willing to share the night shift and the turnover at first was heavy. The present staff is young, competent, and glad to be associated with a progressive and growing business.

It might be said that George has learned as much from his mechanics as they have learned from him. He had picked up a solid smattering of automotive knowledge in the Air Force, and through dealing with parts, but he has added greatly to his practical knowledge by working with his staff.

There are a number of reasons for the garage’s success, but for simplicity they can be narrowed down to two: imagination, and an understanding of what the customer wants.

“The gravy days are over,” says George, a lean and taciturn man with sandy hair and shrewd but humorous eyes. “To stay in business today you have to offer the public service and more service.”

For instance, the Kawartha Garage will pick up a factory worker’s car from the plant parking lot, service it while he works and return it in time for him to drive home. A Kawartha Garage two-man-shooter will go almost anywhere to assist a motorist in difficulty, whether he’s a customer or not.

This creates customers, George Ball feels, and his estimate that 80 percent of his business is neighborhood rather than transient would seem to bear him out.

For that other 20 percent on which its trade depends, especially in the summertime, the Kawartha Garage has special services too. George is personally acquainted with most of the hotel clerks, motel operators, and boarding house owners in the Peterborough district. He has been known to spend an hour on the telephone seeking beds for stranded tourists.

Almost invariably, the refreshed traveller are back the next morning with a grateful “Thank you” and a hearty “Fill ‘er up.”

Since George is an independent dealer in fact as well as name, Imperial acts only in an advisory capacity, but through its resident sales representative makes available many operational and sales aids, everything from new methods of estimating probable requirements to helpful hints on the improvement of rest rooms. A monthly magazine The Imperial Dealer brings him up-to-the-minute sales and promotional ideas, product information, current car servicing data and merchandising “know-how.”

Like other good retailers, George keeps a daily stock record and can quickly estimate and order the supplies he will need. For what he receives he pays in cash and customers’ credit slips which are as good as cash to George when he buys from the Company.

He buys his gasoline at Imperial’s current tank wagon price in the area. The price he charges his customers is entirely up to him. He must make a fair and reasonable profit to stay in business and to give good service to the motorist but at the same time he must meet the competition in prices of the dealers in the district.

While gasoline, motor oils and greases with tires, batteries and car accessories are his basic products, George has found that he can attract more customers by selling other commodities. In the office, along with the neat shelves of catalogued parts, are a cigarette machine, a soft-drink cooler, and a candy counter. All are well patronized not only by neighborhood youngsters but by their parents who, George hopes and believes, will eventually buy their gasoline at the station they visit for their after-dinner soft drink.

This variety of stock brings to the Kawartha Garage a steady stream of people in cars and on foot, Moet,

Informal businessmen’s club meets most mornings for coffee at handy King George Hotel. Insurer agent Art Morrey, George, salesman Art Goodier, host Ray Tanner.
of course, buy gasoline, which is dispensed by George or one of his men. Along with their purchase of Eeco or Eeco Extra, drivers have the oil and water in their cars checked and get a clean windshield as a matter of routine. They are always asked: "May I check your tires and battery?"

Other automobiles may be having mechanical trouble. For them there is room in the garage for a professional investigation, and replacement parts are available if needed.

After three years in the business, George can pretty well gauge the flow of traffic past his doors. On a typical summer Sunday, for example, traffic is heavy first thing in the morning as the early-rising tourists and local fishermen head northward. Near church times, it slackens and remains slack during lunch. Then, in the early afternoon, the march of weekend families begins as the Sunday driver comes out in force. Suppertime brings another lull and in the evening, the southward trend starts, reaching its peak just before dark.

This heavy traffic on a main highway means plenty of business, which is welcome, and lots of work for George and his staff, which is accepted as part of the game.

George’s wife, Helen, helps him with one of the most essential parts of his job—bookkeeping. Early each morning she visits the garage and takes the pump readings. She counts the cash and gets it ready for the bank. Then she checks the cash-register tape.

On the tape, every item is prefixed by a number from one to seven which refers to the product or service sold: Eeco Extra, Eeco, Oil and Grease, Service Calls (including Tow Truck), Soft Drinks and Candy and Cigarettes, Labor, and Parts. From the tape George can tell just what part of his total revenue came from what source. He can then estimate future requirements and avoid high inventories.

Running a service station as busy and successful as the Kawartha Garage would take most of the average man’s time and his spare hours would be needed for sleep, but not George. He believes that while a man who spends all his time working may become a business success, he is unlikely to take part in necessary community activities.

Dealers like George Ball are in a sense executives directing businesses which gross more than many factories, and they have community responsibilities. The time is long past when a garage or service station operator was just the man in the grease-stained overalls who filled the gas tank or adjusted the distributor. Yet the old impression often remains in the public mind.

Not long ago, for example, two high-ranking RCAF officers were in Peterborough for a speaking engagement. They were entertained by the president of the local RCAF Association, a retired flight lieutenant named George Ball.

George learned that his charges liked golf and took them out to his club for nine holes. Later, as the trio sat around the 19th hole in the clubhouse, a business acquaintance came by.

The acquaintance was obviously astonished to see him.

"Why, George," he exclaimed, "I didn’t know you played golf."

The truth is that the proprietor of the Kawartha Garage doesn’t always wear overalls, grease-stained or otherwise. He hasn’t the time, because in addition to supervising the work of his staff and looking after the RCAF Association and the air cadets it sponsors, he is an active member of the Masonic Order, the Kinmen Club and the United Services Club, and a director of the Peterborough Garage Operators’ Association.

Until he purchased the Kawartha Garage, George had never belonged to any organization except those in uniform. Born in Edmonton in 1911, he moved in his teens to Ontario, where he worked in a creamery. In 1939 he joined the Army, and later transferred to the Air Force where, after a short stint on the ground, he remastered for air crew and took initial training in Toronto.

At I.T.S. he met a Midland, Ont. girl named Helen McGloin and, had he not been ordered to Mont Joli, in Quebec, for operational training, he might have married her then and there.

Instead, he finished his air gunner’s course and was...
posted overseas with No. 433 ("Porcupine") Squadron of the RCAF, flying in Lancasters. He completed 17 operations.

After the war, and his readjustment to civilian life, George toiled in northern Ontario for a year as a diamond driller, then joined the automotive supply house as a salesman.

In 1948 he married Helen McIhine.

The Balls live in a comfortable, two-bedroom house on residential Park Street. It would be nice to be able to say that they live there a calm, uneventful life, and perhaps they would if George had not invested in a tow truck.

Helen Ball can sympathize most heartily with the wives of busy obstetricians, apt to be called at any time to cope with the unscheduled arrival of some baby. Highway accidents, like babies, don't seem to care when they happen along. George was away so often Mrs. Ball confesses that in the early days she felt more like a widow than a wife.

Provincial and local police soon began calling the Kawartha Garage for towing jobs because they knew that a truck would be on the scene in a matter of minutes no matter what the hour, weather, or road conditions.

George goes on most of the towing jobs himself, though he never suffers for lack of volunteers among his staff.

Towing is a job requiring both experience and tact. Once George towed away a car involved in a minor accident after the driver assured him that the police and the other driver had been informed. They hadn't, and George was half-seriously threatened with the unusual charge of assisting a driver to leave the scene of an accident. He is more careful now.

Seeing car wrecks and injured people on the highway stunts in George a burning interest in traffic safety. He has thought of putting a sign on his tow truck reading something like "Think it over—this could be you," and he has considered the possibilities of sponsoring a local safe-driving campaign as a form of institutional advertising.

Yet George sometimes wonders if any campaign could cut the accident rate. Invariably, when a bad wreck is sitting in the yard of his garage, a stream of friendly relationships with customers is important factor in Kawartha Garage's program. Proprietor George Ball is often called upon for professional advice, given it cheerfully.

The idly-curious come by just to look at it. A wrecked car in which passengers had been killed once drew so many sightseers that a provincial policeman had to take charge of the traffic. George estimates that 5,000 people saw the wreck.

"Yet most of them will go right back out and drive as fast as ever," he says.

His towing activities led to the first step in what he hopes will be a continuing expansion. A year ago he heard of a boy and father plan for sale on another road out of the city. He bought it and now can bid for the repair jobs on any damaged vehicles he brings in. His present dream is to expand his existing garage to include the body and fender side of the business.

Expansion will probably mean longer hours, but the rewards will increase proportionately, as George philosophically realizes.

Is George Ball a typical Imperial dealer? Yes and no.

He is typical of four out of five in owning his own premises and of all Imperial service station operators in being completely independent with his success depending on his own efforts. Most dealers, like George, emphasize service to the customer and many take part in the activities of their communities.

But there are so many dealers—10,000 across Canada—with so many differences in their locations, working conditions, and customers that no one man can be representative of them all.

A dealer on the Amelius Highway has easily various problems from the man in the shiny, uptodate station selling gasoline and oil for city automobiles in Montreal or Winnipeg or Vancouver. There are stations in tiny fishing villages and in booming mining towns, on broad highways and on shady country lanes up and down the land. Canada is a vast and varied country and Imperial dealers are doing business in every corner of it, and each in his own way.

As an Imperial dealer, George is a comparatively recent arrival. Most dealers have been associated with the company far longer than his three-plus years and many stations have sold Imperial products for more than 20 years.

However, George speaks for a good many of his fellow dealers when he talks about his work.

"I don't know of any other business I'd prefer to be in," he says. "You meet all kinds of people and you know they rely unquestioningly on your judgment and decision.

"They drive up to the station in a piece of machinery worth two or three thousand dollars and when you ask them what the trouble is, they say 'Do whatever you think best.' That's real confidence."

Because of his business philosophy and his hard work George is prospering and is well-established in his community. He has the Kawartha Garage and the body and fender shop. He has a comfortable home and a good car. He has financial security and bright prospects.

Above all, he is without question his own boss.

Dr. N. W. McLeod

WINS U. S. AWARD

Dr. Norman W. McLeod, Imperial's asphalt technologist, who also serves as an engineering consultant for Canada's department of transport, has become the first person outside the United States to win the Charles B. Dudley Medal of the American Society for Testing Materials. The award was for a paper, "Application of Triaxial Testing to the Design of Bituminous Pavements."

The annual Dudley award was established in 1925 to encourage research in engineering materials and to commemorate the first president of the A.S.T.M. Dr. McLeod's winning paper was based on work he did for the department of transport with which he has been associated since 1945.

Dr. McLeod's testing investigates a fundamental method of measuring the strength of asphalt paving mixes under the load to which they are subjected in actual use. Triaxial testing recognizes that on a highway, for instance, the patch of pavement immediately under an automobile's wheel is supported not only by the ground beneath it but also by the pavement surrounding it.

The design of asphalt pavement for airports has recently become an acute problem because of the very high tire pressures required for the landing wheels of jet aircraft. These are currently as high as 200 pounds per square inch and may reach 400 to 600 pounds per square inch in the future. Dr. McLeod's work is expected to have a wide application in dealing with this problem and should provide a more rational understanding of how pavements behave under load.

Dr. McLeod was born in Ontario and grew up in Saskatchewan, where he became a research engineer with the highway department before joining Imperial in 1938. He holds degrees in science from the universities of Alberta, Saskatchewan and Michigan and in 1946 won the U.S. Highway Research Board award for a paper on airport runway evaluation.
Submarine Pipe Line

Down below the fishes, Imperial's new products line now runs underwater for one mile to reach Hamilton. Laying the pipe was a complex amphibious operation.

On a hot Sunday in August pipeliners began one of the longest water crossings ever attempted in Canada. In three days the one-mile gap across Hamilton Harbor was bridged and two six-inch-diameter pipe lines were bedded safely in the bay silt, 60 feet below the water surface. By the first week of October, oil products were arriving in Hamilton through this submarine section of Imperial's 188-mile Sarnia-to-Toronto products pipe line.

Starting early in August approaches to the crossing at Aldershot, on the north shore, and the Hamilton area on the other, were dredged. Thirty-foot lengths of half-inch steel pipe were welded into 1,200-foot strings, painted with asphalt enamel, and then wrapped in insulating glass-fibre matting to guard against corrosion. In sheltered, picturesque Willow Cove, starting point of the crossing on the Aldershot shore, 10-foot twin pontoons were assembled.

Lined up ready to go, half-inch thick steel pipe stretches into the distance. The pipe was welded into strings 1,200 feet long. Five strings were used in each bay crossing.

Two-way radio linked the two shores and three tugs on the bay. At the water's edge, Assistant Superintendent Bill Norris guided the pipe as it began its one-mile trip.

Ten hours after entering the bay at the Aldershot north shore the line reached the Hamilton side (above) in the main harbor.

Side-boom caterpillars lifted the heavy pipe off the ground onto a roller system of mounted airplane wheels. As the wheels turned the pipe rolled smoothly down to the water.

A two-inch steel cable, hitched to a steam winch on the opposite shore, was lashed to the round plug in the lead string. It pulled across 6,000 feet of pipe each trip.
In Willow Cove, where crossing began, twin 18-foot pontoons were attached to every 200 feet of pipe. The line hung from 28 pontoons.

As the pipe line was hauled from the water into its permanent ditch, every available pipeliner helped steady the cable and the line was secured shackled to steam winch on the harbor shore.

To the Harbor Bed

Sunday, August 24, the first string of pipe was hoisted off the ground by side-boom caterpillar tractors and loaded onto a carrier system of twin airplane wheels. The wheels, carrying 40 pounds of pressure, were mounted on fixed axles, at intervals about 30 yards apart. The cut-booms carried the pipe forward and the wheels acted as conveyor rollers.

As it rolled forward over the wheels the pipe looked like a long black serpent wriggling towards its rendezvous with Lake Ontario.

At the water's edge, a two-inch steel cable was lashed to the plugged end of the first string. The cable stretched across the bay to a large steam winch on the harbor shore. The winch pulled the pipe into, and through, the water. The pipe was supported several feet below water level by twin pontoons, spaced every 200 feet.

When the end of the first 1,200-foot string neared the water's edge it was halted. A second 1,200-foot string was welded to it. It took five strings to make a line joining the two shores. As the crow flies it was 5,300 feet between the two shores, but to allow the pipe to arc down to the harbor bed, 6,000 feet of pipe was used in each crossing.

When the pipe reached the harbor shore it was trailed by a line of 28 bobbing pontoons. A few hours later the floating line was pulled into a double "S" position to provide "slack loops" and the floats were chopped loose. Free of the pontoons, the line dropped to the harbor bed. The winch cable was taken back across the bay by tug ready to pull the second line across.

When complete, each weld was checked with a lead-encased atomic camera containing radioactive iodine. The device was used in this capacity for the first time in Canada by physicist Paul Larsen.

Channels for the pipe at the approaches to the north and south shores had been dredged before the crossing started. Its work done, the big suction dredge swings idly at anchor.

Responsibility for wrestling the twin pipe lines across the bay rested on the broad shoulders of quiet-voiced "Friday" Davis, water crossing specialist from northern Oklahoma.

Pipeliners who for hours had been shuffling it out under a hot sun took their ease when the first line was safely across the bay.
A Fortune In Dried Leaves

By there was ever an Horatio Alger in Canadian agriculture it is the flue-cured tobacco-growing industry. Its story is strictly a rags to riches fantasy.

In less than 30 years it has grown from an insignificant sideline to Ontario's largest single cash crop — $64 million last year — and has made Canada self-sufficient in cigarette tobacco. About 99 percent of the tobacco used in Canada today to make cigarettes is grown here. The only tobacco imported is a lttle leafy and perique for blending.

It has been the base of sizeable personal fortunes made by some Canadian farmers with a gambler's instinct, and by several hundred European immigrants who landed in Canada with little more than an aptitude for hard work and unlimited faith in this country's future.

A government revenue producer Canadian tobacco is in a class by itself. Cigarette taxes have contributed an annual average of $200 million to the national treasury for the past three years. It has cut out imports of American tobacco, saving some $50 million a year in U.S. funds, and, until the British market collapsed this year, brought in about $10 million annually from exports.

The tobacco industry is a large employer. In the cigarette factories alone it provides year-round employment for nearly 11,000. As a crop it is the livelihood of some 3,500 farmers. During harvest it supplies work— at up to $100 a week — for thousands of transient workers who pour into the Ontario tobacco fields from many parts of Canada and the U.S.

It is at harvest time too, that the oil industry gets into high gear to help the farmer with his tobacco crop.

From the middle of July until late September, Imperial farm agents spend sleepless nights and restless days. They have a round-the-clock job delivering millions of gallons of oil for the fires which keep the all-important kilns at the high temperatures needed to cure tobacco.

In the early days these kilns were fired by wood or coal, but as the industry has grown, more and more tobacco farmers have converted to oil. According to some estimates 80 percent of the kilns are now fired with oil. Other assessments are even higher. Each year as the tobacco farmers acquire more capital, more of them convert to oil. Several oil burner companies are now marketing burners specially constructed for the tobacco kilns.

In the curing season, when life is hectic, oil provides a steady, reliable heat at the tobacco crop's most critical point, ensuring a well-cured harvest. In the old days the curer had to be constantly on hand to stoke the kiln fires or check the draft. Now he has to

Tobacco leaves mature from the bottom up. Bottom leaves are known as sand leaves. In a farm field near Delhi, Ont., this picker skillfully and quickly plucks the sand leaves.
Tobacco is not seeded in the field but is in a greenhouse. It is grown in specially prepared beds of peat or peat substitutes and black dirt check temperatures only every four hours or so. A temperature variation is quickly controlled by the movement of a fan. Some farmers have thermostats to control the kiln's heat, and check the kilns but once or twice a day.

In the tobacco fields, gasoline-powered planters, tractors, and other equipment have speeded up operations and made those areas efficient. This wide use of mechanized equipment and the starch scientific acts indicates the present flourishing state of live tobacco farming. It was not always thus.

Flue-cured tobacco had a slow start in Canada, yet after World War I, at that time the country's tobacco production was one of the major sources of pipe and cigar tobacco grown in Quebec. As tobacco consumption grew, and a larger area in an area now known as the Old Belt, in the southwestern Ontario counties of Kenes and Kincardine. The Old Belt accounts for 90% of the country's tobacco production and is considered the most productive area in the world. The area is located in the southern part of the province, near the southern border with the United States.

Flue-cured tobacco is the most common variety grown in Canada, and is known for its high quality and mild flavor. It is grown in a variety of soil types, from sandy loams to clay soils, and is typically harvested in the fall. The tobacco leaves are cured in a kiln, where they are dried to a specific moisture content. This process is known as "flue curing," and is what gives the tobacco its characteristic flavor and aroma.

The tobacco leaves are harvested in the fall, when they are fully mature and have reached their peak flavor. They are then bundled together and hung in a curing shed, where they are heated slowly to achieve the desired moisture content. The leaves are then dried further in a kiln, where they are hung on racks and heated to a specific temperature. The drying process takes several weeks, and is monitored closely to ensure that the leaves are cured to the desired quality.
plants ready for the fields. The seedlings are planted by machine. It takes three people to operate a single planting machine, and five to operate the large powered double planters.

The planter is a two-wheeled wood and steel framework with a small plow underneath, a water tank mounted above and two seats behind it close to the ground. Planters sit on the seats. The machine operates a small furrow in the earth and automatically applies water to it. The planters at the rear alternately place seedlings in the furrow. As the machine moves along it closes the furrow and the operation is complete.

Throughout the ripening June sun the fields are constantly tended, the soil hoed and worms pluck by hand from the tender leaves. Early in July the plants' flowering tops are pulled off, whereas on stake-like tendrils called suckers springing off the stalk at the leaf joints. To ensure that the tobacco leaves are not removed. Crews of men and women go down the rows snapping off the little stems. At this time of year the plants lack the lusty full-leafed plants look like a dense miniature green jungle.

By the middle of July the trickle of transient labor entering the tobacco belt for the harvest has become a flood. From Ontario and Quebec, and sometimes the west, they descend on Delhi, Tillsonburg, and Simcoe, swelling these centres to three and four times their normal population. From the southern United States come about 1,000 tobacco canners to operate the kilns.

At the end of the season, the harvested leaves are loaded onto trucks and transported to the kilns. The leaves are then cured, a process that takes several weeks. The leaves are hung on racks and allowed to dry slowly, removing excess moisture and achieving the desired level of ripeness. The curing process is critical, as it affects the quality and flavor of the final product.

The harvested leaves are then loaded onto trucks and transported to the kilns. The leaves are hung on racks and allowed to dry slowly, removing excess moisture and achieving the desired level of ripeness. The curing process is critical, as it affects the quality and flavor of the final product.

The cured leaves are then dried further in the kilns, where they are subjected to higher temperatures to drive off any remaining moisture and preserve the tobacco's flavor. This process can take several days, depending on the size of the kiln and the quantity of tobacco being processed.

The cured tobacco is then harvested, baled, and shipped to the market. The bales of tobacco are carefully packed and weighed, and then transported to warehouses where they are stored until they are ready to be processed into various forms, such as cigarettes, cigars, and pipe tobacco.

This process is carried out in stages, with each stage carefully monitored and controlled to ensure the highest quality of tobacco. The tobacco is harvested, processed, and cured in a series of stages, with each stage carefully monitored and controlled to ensure the highest quality of tobacco.
In the early days kilns were fired by wood or coal, but as the industry grew, more and more tobacco farmers have converted to oil. Oil furnaces provide a more constant heat slightly to allow air to circulate. The temperature is raised up until by the fourth day it is about 150 degrees. There is no set time to "fill out" a kiln. It is a matter of waiting for the tobacco to dry out.

The excess checks the condition of the tobacco by reaching inside the partially-opened vents and feeling it with his fingers. When the leaf stem is so dry that it snaps, he knows it is ready.

The kiln ventilators are then opened wide enough to allow moisture to enter and soften the cured leaves. Otherwise, this would just polarize. Sometimes the air is not damp enough to supply the necessary moisture and steam is played on the leaves.

When the tobacco is pliable the kiln is emptied and the leaves steamed in a barn. The kiln then is ready for another load. A kiln may be filled five or six times in a season.

Curing is the most important and trickiest operation of the harvest. If the temperature in the kiln is just right the tobacco may have a poor color or it may burn and its value be reduced considerably. The flame in the oil unit must not go out.

At any hour of the day or night, Imperial farm agents may be called to make a run out to one of the tobacco farms to replenish the fuel supply. At the height of the season the farm agents' tank trucks are usually idle long enough for servicing. Then they are back on the road again. A flight with a nip of bile in the air is almost sure to bring a spate of urgent phone calls for more fuel.

During the curing and harvesting the tobacco farmer has to sell his crop. In the early days of the industry there were no regulations governing growing or marketing and the price of tobacco began to slip as the supply increased.

Today the 23-member board of the Flue-Cured Tobacco Marketing Association of Ontario — 13 growers and eight buyers — regulates tobacco acreage, makes growing regulations and sets prices. Farmers don't have to join the Association, but only about 75 tobacco growers out of 3,300 are not members. Membership practically guarantees that buyers will purchase their crop. Free-lance buyers run the risk of being passed by the buyers, particularly if the demand should go down, as it has this year.

Tobacco acreage slumped this year — from 100,000 to 90,000 acres — because of loss of export markets and drop in cigarette consumption resulting from high taxation. English cigarette manufacturers regard Canadian flue-cured as hot in the world, but dollar shortage has forced them to cut their purchases from 45 million pounds last year to an expected $15 million pounds this year.

The control of the Marketing Association over its members accounts in part for the high prices paid for tobacco farms. The "tobacco fidglet" are not allotted to the farmer, but to his land. If his farm is sold, it is handed over complete with the right to grow a specified number of acres of tobacco.

During the growing season buyers have visited the tobacco farms to get an idea of the quality of the crops. When the crop is cured the buyers make the rounds again, sampling the stacked tobacco. This post-harvest visit is the "buyer's grading". It gives the tobacco companies a final chance to judge the grade of tobacco for sale.

Canadian tobacco is not sold in mass auctions as in the U.S. crop. The unintelligible jabber of the auctioneer is missing in the Canadian deal. In its place is a quiet dicker between farmer and buyer in the barn. Sometimes late in September the Marketing Association sets the marketing data, usually for a week in October. Advised of the date all farmers remain home awaiting the arrival of the buyers. Buyers who have already appraised the crops usually come ready to offer the farmer a price for his entire crop. This price is based on an average price agreed upon by the Association earlier in the year.

The crop sold, the tobacco is taken from the barn, steamed to make it moist, and then stripped from the drying sticks. It is graded for color, length of leaf and texture, and then packed off to processing plants at Delhi, Plympton and Leamington.

In next and final appearance is as a neat, white, tightly-folded cigarette ©

WHAT WONT THEY THINK OF NEXT?

Until fairly recently there was an element of danger lurking in the pipe pits at Imperial's warehouse in Edmonton.

The Edmonton area, with its big oil fields of Leduc and Redwater, uses large quantities of heavy pipe. All of it has to be unloaded from railroad cars and moved to adjoining platforms. The danger came when the rolling pins, for one reason or another, bounded back unexpectedly, sometimes plunging workers' feet. Anyone who has ever rolled a loaded barrel over rough ground and past obstacles knows how this happens.

In the spring of 1949, a warehouse employee named Lorne Hore thought of a simple gadget to prevent pipes from bumping or rolling back. It was merely a counter-weighted safety catch, a piece of metal which passed down to let the pipe roll over it and then flipped back to hold the pipe steady.

There was nothing new about the principle, but there was everything new about its application to pipe-handling. Anyone could have thought of it — but Lorne Hore did.

He had one made and when it seemed to work both totes and time, he sent drawings and a description to the people who run Imperial's Coin Your Ideas plan. They liked the idea well enough to give Lorne $100.

The Coin Your Ideas plan exists because Imperial realizes that the man or woman on the job often has the best ideas for improvements in the work of the oil industry. Through this plan, Company employees are encouraged to submit suggestions and receive a fair award for those that are deemed practical.

Lorne Hore's $100 was what the CVI people call an Initial Award. If, after a full year's trial, an idea proves to be of greater and more lasting value than was originally estimated, a sizable Supplementary Award is sent to the employee.

Consider Imperial's safety catch. It takes six men — a crane operator, a sacker and four laborers — to unload a car of pipe. In one year nearly 30,000 tons of pipe were unloaded at Edmonton warehouse that's more than 550 miles of it, ranging from 2½ inches to 10½ inches casing. When the safety catch was introduced, it saved up to an hour in the handling of a car because the man could work without worrying about bumping pipes. The catch has been adopted in all Company operations of a similar nature.

In December of 1950, Lorne Hore received a Supplementary Award of $150 for his device.

The next development came that year when the CVI committee met to consider their annual Capital Awards. Each year the committee studies all the suggestions made during the past 12 months by Imperial employees to decide which four are the best of the year and thus eligible for one of the Capital Awards of $500, $300, $200 and $100.

Last year Lorne Hore won a Capital Award of $200, making a total of $350 which his simple safety idea has brought him so far.

In a company like Imperial, the advantages of a sound and comprehensive Coin Your Ideas plan are several, over and above the cash payments that go into the pockets of the individual employee. The plan pays off sometimes in dollars and cents savings in materials and labor, more often in methods which make a job easier or safer.
It is usually difficult to estimate the actual cash value of an idea, even where financial savings are its main result. The CYT officials say it is possible to calculate savings on from 15 to 25 percent of the successful suggestions. On the equally important remit, most of which concern the welfare of employees, the advantages are hard to estimate in dollars and cents though they may be just as real.

Some of Imperial's highest prize-winning suggestions have resulted in very substantial savings. Notable among these have been recent ideas of three refinery men. Tom Ward, a topping and coking unit operator at Saruis, won last year's top award of $750 for a refinery time-saving devise, two Montreal men, A. P. Perrott and John Mastrove, earned $500 and $340 respectively for suggestions both of which had essentially to do with making use of heat which otherwise would have been wasted during refinery operations.

Imperial's Coin Your Ideas plan was introduced in the marketing department in 1937 and became Company-wide under a national committee in 1947. It makes the submission of an idea as painless and foolproof as possible.

All that's necessary is for an employee to write out the suggestion in as much detail as possible (a special form is available, but it doesn't have to be used) and either place it in a suggestion box or mail it to the secretary of his area committee. There is no need to obtain permission from a superior, or even to consult one.

The suggestion is considered by the area committee and, if it is felt that the idea will contribute in any way to the over-all welfare of the Company or its employees, an initial cash award of $10 or more is made. (Awards of $100 and up must go to the departmental committee for final decision.)

Last year the CYT people reviewed just a shade under 2,000 suggestions and awards were over 600. In other words, better than one idea out of every four was thought worthy of adoption. The others were ruled out because they were so obviously not original, or perhaps already were under consideration or were not practical. Often an apparently excellent idea adopted elsewhere just hadn't, for one reason or another, a practical application in Imperial's operations.

The 600 successful suggestions last year resulted in awards totalling $14,833 in sums ranging from $10 to $760. Ideas came from almost every department in the Company.

Prize-winning ideas ranged from suggestions for a new kind of paper to a more specific method of moving coke from a coke drum. They included the new device for fastening drag chains to oil trucks which was designed by route salesman Ernie Morris of Regina and Art Poitras' new holder at Redwater for storing go-devils, devices used for cleaning pipe lines.

There was hardly a facet of the Company's widespread operations that wasn't the subject of at least one suggestion. Among the ideas from the marine department was that of 2nd Engineer A. K. Daley of the Imperial Leduc who suggested the installation of a new kind of lifting gear on oil tankers. Office workers, too, cashed in, sometimes in pairs like Maureen Fraser and Allen Beacom of Halifax and sometimes singly like Mrs. Mary MacIver, a statistical record clerk of Vancouver, who devised a scheme for handling customer payments after the cashier's wallet was lost.

Three-quarters of the ideas that are turned into cash through the program are of the sort that might have occurred to anyone in the department concerned.

Take the simple safety idea suggested by D. K. Jeffrey, then a unit operator at Calgary refinery and since promoted to a shift foreman's position at the refinery in Edmonton.

Mr. Jeffrey had observed that when the alkylation unit had to be shut down, two or three men had to scurry about opening and closing valves. His idea was to combine these various operations so that one man, by turning one master shut-off valve on the unit's control instrument air supply, could bring the entire operation to a halt. The merit of the suggestion has since been demonstrated in actual practice.

No one knows why some people get ideas and others don't, but responsible officials have been looking for the answer since 1893, when the first organized suggestion scheme was started by a shipbuilding firm in Scotland. Through the pooled experience of around 10,000 companies on this continent who have suggestion plans, certain facts have come to light.

One is that more ideas come from people who are being frequently moved from place to place, or who take new jobs, than from those who have been doing the same thing for a long time. Another is that most suggestions are hatched because someone is looking for a way to make his job easier. Lastly, most ideas must be allowed to pop into the head; anyone who sits down deliberately to think up an idea seldom gets results.

The real trick is to be alert enough to recognize an idea when you have one. No one can work at a job day after day without having notions for improving it, but in most cases the thought just moves into the mind, stays there briefly unrecognized, and quietly steals away again. Frank Smith of Halifax made a passing thought pay. He got an idea for solving the problem of cleaning refinery towers while watching his wife vacuuming a rug.

The Coin Your Ideas people feel that the best ideas come out of an ingenious employee's constructive study of his own particular job. They don't care where any legitimately evolved ideas come from. They simply want to be convinced that it is a better way of doing something than the way that something was being done before.

It has been noted that one successful idea in an office, plant or field operation will invariably set off a flurry of ideas. There's nothing like the sight of a crisp new award cheque to start brains functioning.

Amazingly few of the ideas submitted by Imperial people are of the frivolous "Let's fire the Bee" or "Let's build a swimming pool" type though a number of the suggestions certainly seem trivial enough at first glance.

For example, a burner mechanic at Lennoxie cashed in on a tiny washer. He suggested it might remove a troublesome clutch noise in Essex boilers. It did.

What happens to the award money is of course the lucky employee's own concern.

Coin Your Ideas cheques have been used to buy baby's clothes, to help pay off mortgages and furnish homes, or for luxury items—everything from new bats to memberships in golf clubs.

A man at Calgary refinery used his award for model railroad parts. Another made the mistake of keeping the cash in his pocket for a little too long. Thanks to his wife, the new suit he had planned became eventual by a necktie. "It was a darn good necktie," he confesses.

No matter how trivial or how important the suggestion, no matter how large or how small the award (or what happens to it), the obvious fact is that the Coin Your Ideas program has, in the four years of its Company-wide adoption, done a lot for Imperial people and for Imperial. A good suggestion is one of the few things in the world which benefits everybody.

Everyone has ideas. Some people, in fact, have a great many of them. In the central committee's files are records of some employees having submitted five, seven and even nine successful ideas.

Prize-winner of them all, though, is R. E. Smith of Regina refinery. In six years, Mr. Smith has won 19 awards.

In the elated words of another, first-time winner: "How long has this been going on?"

Contemporary ad.
Imperial Oil 1952

Fellowships

Four more Canadian university graduates have been given grants to continue advanced research at the universities of their choice. Worth $1,250 annually, the fellowships may be held up to three years.

D.M. Fawcett

R.A. Burwash

P.M. Cornell

Robert Kroshof

Research in geology, biochemistry, economics, and theoretical physics will be conducted at one Canadian and three U.S. universities by this year's winners of Imperial Oil fellowships. The four young Canadians, two from Alberta and two from Ontario, have been awarded fellowships each valued at $1,250 annually, which may be held for up to three years of postgraduate study at any qualified university.

The winners are David MacInnes Fawcett of Edmonton, nominated by the University of Alberta; Ronald Allen Burwash, also of Edmonton and a nominee of the University of Alberta; Peter McCaul Cornell of Fort William, nominated by Queen University; and Robert Kroshof of Kingston, also nominated by Queen’s. All the 1952 winners are working toward the degree of doctor of philosophy.

Each year since 1946 four Imperial Oil fellowships have been awarded; two to selected graduates in chemistry, physics or engineering, one in geology, and one in economics, industrial relations, or business administration. Their object is to assist graduates of Canadian universities to conduct postgraduate research in the field of their choice. Holders of fellowships need have no connection with Imperial and are under no obligation to the Company.

For the first time since the fellowships were introduced, one has been given to a former Imperial Oil scholarship winner, D.M. Fawcett, whose father is Harry Fawcett of Alberta marketing division, received an undergraduate scholarship in 1947 and studied at the University of Alberta. He received numerous honors, including the Governor-General’s Gold Medal, and graduated as a B.Sc. last year. He is working in the nuclear research biochemistry laboratory of McMaster University where he intends to use his fellowship while continuing research into the synthesis of thyroid hormones in the body.

R.A. Burwash graduated in 1946 from the University of Alberta with a B.Sc. After two years as a teacher at Athabasca High School, he returned to the University to study geology, obtaining his M.Sc. in 1951. A winner of the Strattonia Trust scholarship in physical education, he also holds the degree of B.Ed. His research will be at the University of Minnesota, studying the nature of the pre-Cambrian formations underlying the plains of western Canada.

P.M. Cornell holds a B.A. and M.A. from Queen University, where he was awarded the W.W. Near scholarship in political and economic science, a special University scholarship, and a fellowship in the humanities. During the war he attended the Canadian Services College, Royal Roads, after winning a Navy League scholarship. He has continued his association with the Navy, acting as executive officer of the Kingston Naval Division and commanding officer of Queen’s University Naval Training Division. Married and the father of one child, he plans to do research at Harvard University on the effect of resource development on the balance of payments in international trade.

Robert Kroshof specialized in physics during his undergraduate years at the University of California and at Queen’s. Born in Toronto, he received his B.A. in 1951 from Queen’s and his M.A. a year later. During summer vacations, he worked in Canada and the United States as an assistant in nuclear physics and oceanographic research. He plans to continue his studies in theoretical physics at Princeton University in New Jersey.

Fellowship winners were selected this year by a committee headed by Dr. E. Holt Gurney, former chairman of the Ontario Research Foundation, and including Dean J.S. Bille of the faculty of applied science, Queen’s University; Dr. H.P. Graham, professor of chemistry, McMaster University; Dr. Leon Lortie, Institute of Chemistry, University of Montreal, and Professor J.C. Cameron, head of the department of industrial relations, Queen’s University.

Three members of the committee are appointed by the National Conference of Canadian Universities and two by Imperial. Fellowship applicants are nominated by their university and selected by the committee on a basis of scholastic standing and aptitude in the chosen field of research. Winners may go to any university they wish in Canada or elsewhere. Although the results of the research may lead to important discoveries, Imperial waives all rights to any patents which fellowships holders may obtain as a result of their work.

The fellowships were originally worth $1,000 a year, but last year the amount was raised to $1,250 to provide additional help to the winners, particularly to the married men, because of the increase in the cost of living and of university fees. At present 11 winners, including the four described above, are carrying out research aided by Imperial fellowships.©
Imperial Oil 1952

Scholarships

Imperial Oil undergraduate scholarships were won this year by the 11 young Canadiens shown here. Each grant is worth $625 a year and may be held up to four years at the Canadian university of the student's choice. The scholarships are open to children or wards of employees, annuitants or deceased employees of Imperial Oil or its Canadian subsidiaries.

The winners are: John M. MacLean, son of A.L. MacLean, marketing department, Halifax; Maureen Donohue, daughter of P.J. Donohue, Montreal East refinery; Marcel G. Dagenais, son of Emilien Dagenais, marketing department, Montreal; Gordon D. Kelly, son of Capt. T.D. Kelly, marine department, Toronto; Terrance M. Hobin, son of J.H. Hobin, Sarnia refinery; James W. Park, son of J.G. Park, Sarnia refinery; Robert J. Rose, son of the late J.A. Rose of Sarnia refinery; John F. Griffith, son of J.S. Griffith, marketing department, Regina; Ralph J. Schneider, son of J.P. Schneider, marketing department, Regina; F. Patrick Blake, son of E.R. Blake, marketing department, Calgary; and Frederick F. Beck, son of A.F. Beck, producing department, Calgary.

John Griffith is a brother of C. Stuart Griffith, who is studying at Regina College of the University of Saskatchewan under an Imperial Oil undergraduate scholarship won last year.

The scholarship awards were introduced in 1948 to assist employees' children to obtain university educations. At present 37 children of Company employees hold scholarships but two have deferred their studies until 1963. This year's winners were selected by a committee of educators consisting of Dr. Lottie, Dean Ellis, Dr. Graham and Prof. Cameron of the Fellowship Committee, (see page 25) along with P.K. Stewart, executive secretary of the Canadian Education Association.

Glass Can Be Tough

Thin strands of glass fibre play many roles in modern life, resisting fire, frost, rust, moisture and even time itself.

Three Ontario factories process glass fibre. Here a Gorlitz workman tests glass "scrims" used for strengthening paper.

DEMONSTRATIONS which would fascinate any housewife have been carried out recently by a group of grown men before consumer organizations and other meetings.

Their equipment is an ordinary oven and a quantity of a new-fangled insulating material; their ingredients, an unbaked apple pie and a brick of ice cream (flavor unspecified).

Following directions of their own devising, the experimenters heat up the oven. In it they place the pie and the ice cream, the latter carefully wrapped in the insulating material.

Half an hour later they open the oven door. The pie is baked to a turn. They remove the wrapping from the ice cream. The brick is as firm and cold as it had been in a refrigerator.
Glass keeps the ice cream cold in the oven. Of course it’s not just ordinary glass—it’s an insulating “wool” made of glass fibre for which the technicians at Fiberglas Canada Ltd., are constantly finding newer and more fascinating uses.

Fiberglas Canada, a comparative newcomer to the Canadian industrial scene, began its present expansion in 1946, after nearly six years of turning out war materials exclusively. Since then the original plant at Oshawa has grown to three—a second at Guelph, and a third at Sarnia where it is possible to make use of the fuel and power available from Imperial Oil and Polymer Corporation.

The story of glass fibre is intriguing. For some 6,000 years men have been taking sand and limestone and soda and melting them together to make ornaments, containers for liquids and, since the third century A.D., window panes. But glass fibre is a comparatively new development.

We have been long familiar with glass... and with its most obvious characteristics: brittleness, hardness, fragility, and non-conductivity of heat.

A few decades ago, an enterprising scientist made a surprising discovery. He found that if molten glass is stretched out into very thin strands—some of them 15 times slimmer than a human hair—the resulting fibre has the flexibility of rubber and at least the tensile strength of steel.

This was an engrossing laboratory phenomenon, but had it any practical use?

It had. It gave promise of supplying the answers to a number of knotty problems which had been bothering other industrial scientists.

For example, manufacturers of electric stoves were being unwillingly generous with their heat. They wanted it to stay in the oven and cook things, but unfortunately it was straying all over the kitchen because a satisfactory insulation had not been developed. Most of the materials they tested either burst into flame, smouldered, or turned into powder.

Glass fibre changed all that. As an insulator, it not only retains heat as well or better than anything else, but being inorganic is wholly fireproof.

Refrigerator-makers had a similar problem, but in reverse. They hated to think of their fine cooling units turning the whole house into a glorified fur storage vault. Fire-resistance was not a problem here, of course, and other insulating agents would do the job, but glass fibre does it so well that it is now used in 90 percent of all new Canadian refrigerators (and stoves, too).

Glass fibre wool keeps heat in or out, as required; it can do the same thing with sound. Made into acoustical tile and other products, it deadens sound in radio stations and in homes, in factories and offices. Used in the fuselage of transport aircraft, it combines two happy faculties of keeping sound out and heat in.

Exponents of another comparatively new and rapidly expanding industry—plastics—have long dreamed of employing their product in the manufacture of such things as boat hulls and auto bodies. Unfortunately, as every parent knows who has ever stepped on a plastic toy, the gaily-colored stuff is extremely brittle and shatters easily.

Glass fibre research experts, in their search for new uses for their product, have supplied an answer to the plastic men’s dream: a foundation upon which plastics can be laid and molded into a substance resistant to shock.

In this foundation material the fibres are either left intact and woven into cloth or broken into short lengths of “wool” and incorporated into the plastic.

Fluorescent boat hulls made from glass-fibre-backed plastic have color molded in, can’t absorb water, won’t rot, never need painting or caulking, are virtually punctureproof and weigh approximately half as much as a comparable wooden hull.

The RCAF has built crash boats of the new substance. A glass-fibre-reinforced plastic automobile body has recently undergone exhaustive tests and proved satisfactory.

Of particular interest to the sportsman, a fishing rod of plastic and glass is the hottest seller in piscatorial circles. For strength, light weight, and flexibility, its fans claim it is better than the finest bamboo.

Let’s go back a moment to where we spoke of glass being fire-resistant. In Boston one night in 1942, fire started in some draperies in a night club known as the Coconut Grove and 449 people died from burns, suffocation, or2

The appalled authorities deplored the fact that virtually everything in the club had been highly inflammable, and warned night club owners that a repetition of the tragedy could occur unless something was done. But what kind of a night club could you have without fancy furnishings and draperies?

Once more, fibre glass turned out to be the answer. Decorations made of the magic inert material are just as pretty to look at as the most inflammable flammables, but they’re as hard as barbed wire as a firefighter’s asbestos suit.

Glass fibre is now being used for fireproof rescue suits, incidentally. After prolonged exposure to the hottest of gasoline-fed flames, temperature inside the unit remains below 130°.

How is fibre glass made? How do the same materials which have been used to make a tumble on a night club table also find themselves in the drapes hanging from the ceiling? How out the stuff of which window panes are made become refrigerator insulation?

The secret lies in two things: the mixing and heating of the ingredients, and the way the glass is drawn from the molten state.

First step is mixing the ingredients—two types of high-alumina-content sand, limestone, borax and feldspar, plus two further ingredients developed through modern research—in a vast hopper known as a “batch car”. From there they proceed via conveyer to the two-story-high furnaces where they are melted under carefully controlled temperatures. The furnaces at the Sarnia plant burn a million and a quarter gallons of heavy fuel oil every year.

The fate of the molten glass differs now, depending on whether it is to become long lengths of “yarn” for weaving and other purposes, or one- to three-inch fibres for incorporating into “wool” mats. Even in the latter case the processes may differ if the short fibres are not of the kind manufactured at Sarnia or are for Amosco and Coromat made in Oshawa.

Because “wool” manufacturing accounts for the 70 percent of the industry’s output, let’s first look at the way they handle the glass at Sarnia.

From the melting tanks, the molten stuff runs out onto a heated sheet which is punctured with hundreds of small holes, through which the glass is blown. As it droops, jets of steam blow it and break it up into the desired fibrous material. Still dropping, the fibres harden and are sifted by the same large fans used to carry them to another conveyor belt. In their pro-
For example, in the home, glass fibre may be in boxes, insulating in the filter of the air-heating system, and in the lining of the water heater and oil furnace. It may produce the fireproof curtains and draperies.

King-sized curtains are the curtains used to protect baseball diamonds against sudden rainfalls. The newest ones, made of glass fibre, can be exposed indefinitely to the heaviest rains without becoming waterlogged.

The potentialities of glass fibre when used to reinforce plastics have already been mentioned. They are much greater in these times of shortages in wood, steel and aluminum.

Factory skylights and partitions, when made of ordinary glass, have long been peculiarly subject to breakage, whether from sandlot baseballs or careless feet. A substance made of plastic and glass fibres now on the market is virtually impervious to both. Not only is it hard to break (it leaves no jagged edges if it does break) but also it is the most heat resistant of all non-flammable materials.

Glass fibre now goes into the manufacture of "scrim" which reinforces paper, especially that intended for wrapping goods for export shipping. This is a comparatively new but growing use for the fibre and it involves an ingenious production method.

Scrim is a wide-mesh material not unlike coarse mosquito netting. It is made by drawing upward a large number of coarse glass fibre threads to form the "warp" and superimposing on them cross threads made of the "wool" or "fill". The warp and the fill are stuck together by hot asphalt.

In this stage the scrim is a large web-like cylinder which must be cut into two halves to be put on each side of the paper manufacturer. The cutting is done by flames of propane gas which hit the scrim cylinder as it draws up. The hot propane flame cuts — or melts — the fibre more readily and cleanly than would sharp knives.

A somewhat more specialized use for glass fibre is for insulating the latest type of electric motors. Here an insulating material is required which can withstand moisture, heat, corrosives, vapors, liquids and gases, dust, vibration and time itself. Glass fibre in this tough role promises better and more efficient motors.

Of all the myriad uses being found for glass fibre, the most interesting to the oil industry are those concerning pipe lines.

The greatest threat to long life for buried steel pipe is not rust or accidental breakage, but electrochemical reaction just exactly the opposite of that by which steel is plated with silver or chrome. In other words, instead of being built up the metal is gradually eaten away, as pickles go into solution and are absorbed into the surrounding soil.

To combat this costly wasting away (about half of the total investment in a pipe line is in the pipe itself) it has long been the practice to coat the pipe with asphalt or tar before it is laid. This went a long way toward solving the reaction problem, but asphalt and tar themselves are liable to shipping from pipelines during the laying process and are difficult to apply evenly. A glass fibre wrap was devised which now is in general use wherever pipe lines are being laid.

During the building of this Interprovincial line from Edmonton to the head of the lakes, and then northward in constructing Imperial's new products line from Sarnia to Toronto, machines wrapped the pipes with Cormonat and at the same time coated it with hot tar. Cormonat is a wide tape compound of glass fibre wool strengthened with longitudinal cords of glass fibre yarn. The result was that the glass fibre bonded with the tar and served as a binder to assure a smooth and impervious coating.

This produced the most generally satisfactory oil-carrying pipe yet devised, but already researchers in the United States are experimenting with something which promises to be even better: pipe made from our old friends, plastic on a glass fibre base. So far, they haven’t succeeded in making pipes of a greater diameter than eight inches, and even at that maximum size the coat is considerably greater than for steel pipes. But if past performances are any criterion, the "bags" in the new pipe will eventually be eradicated.

In the future, oil and oil products may well travel through pipes for which "electro-chemical reaction" is merely a forgotten phrase.

Oil pipe lines like Interprovincial and Trans Mountain use glass-fibre to wrap stages before laying it in trenches. Glass minimizes chemical reaction, preserves and protects
PERSONALITIES IN THE NEWS

J. F. Barrett Heads Law Department

J. Flavelle Barrett, solicitor for Imperial for the past six years, succeeds J.W. Hamilton (now a director) as counsel and manager of the law department.

Mr. Barrett attended Upper Canada College and the University of Toronto, graduating with a Bachelor of Arts degree in 1936. He studied law at Osgoode Hall and received his call to the Ontario Bar just as war broke out in 1939. During the war he spent five years as a pilot in the RCAF. He served overseas and when discharged in 1945 as a squadron leader, won the Air Force Cross.

After a year in private practice he joined the Company’s law department in his native Toronto and in June, 1951, was transferred to Calgary as division solicitor for western producing. Mr. Barrett left that position to take up his present duties in Toronto.

E. D. Kingsbury Becomes Assistant Comptroller

E.D. Kingsbury has been selected to be an assistant comptroller and fill the vacancy created by the promotion of J.H. Spencer to comptroller.

Toronto-born and educated, Mr. Kingsbury holds the degree of bachelor of commerce from the University of Toronto. Upon graduation in 1934 he joined Imperial’s tax and statistical department. During World War II he served as a navigator with the RCAF and returned to the Company in February, 1945, as a corporation tax accountant and analyst. In July, 1951, he became assistant comptroller of taxation and held this position until his present appointment.

A. A. Turner now B.C. Division Manager

A.A. Turner, who had been management development co-ordinator since mid-summer 1951, has succeeded W.C. Garbutt as manager of the British Columbia marketing division. Mr. Garbutt is chairman of the B.C. field co-ordinating committee and will assist in certain employee and public relations activities for the marketing department in British Columbia.

Originally from Mississauga, Ont., Mr. Turner joined Imperial in 1921 as commission agent in Saskatchewan. He held various positions in that province until 1941 when he was appointed manager, cost and operations, in Manitoba. Two years later he transferred to an affiliated company in Calgary. In 1944 he returned to Imperial as Saskatoon sales manager, and in 1948 was appointed manager of that marketing division.

Robert Wyseman, 40-year Button

Robert Wyseman has been with Imperial at Sarnia refinery for 40 years. A Scotman by birth, he joined the Company on April 1, 1912 and was assigned to the boilermaking department. He enlisted in the infantry in World War I and spent four years overseas. After discharge in 1919 as a pay sergeant he was reinstated at Sarnia in the piping department. He is now in charge of the refinery’s stationary department, a position he has held since 1934. He is an avid boxing fan and was a boxer himself in his younger years.

W. J. A. Hyndman, 40-year Button

W.J.A. Hyndman of Ottawa began his 40 years’ association with Imperial as a dock driver with the Queen City Oil Co. which then operated the Company’s marketing branches in Ontario. In 1915 he enlisted in the 77th battalion, served overseas and returned to Ottawa in 1917. The same year he was transferred to Brockville as a sales agent and during the next 15 years held various positions there. He returned to Ottawa in 1932 where he now is warehouse clerk.

J. E. Akitt, Regional Sales Co-ordinator (East)

J.E. Akitt and C.E. Tilton, regional sales co-ordinators of the marketing department, have exchanged the areas under their direction following organizational changes in that department. Mr. Akitt is now co-ordinator for the east and Mr. Tilton for the west.

Originally from Orillia, Ont., Mr. Akitt spent his first 25 years with the Company in western Canada. His first position was as salesman in Saskatchewan in 1915. Six years later, he transferred to Edmonton to supervise service stations and construction. Another transfer in 1937 took him to Calgary as city agent. In 1941 he became sales manager for Saskatchewan and later western co-ordinator of farm sales development. In 1947 he was made manager of Saskatchewan division and the next year moved to Winnipeg as Manitoba division manager. In June, 1950, he came to Toronto as western regional manager.

C. E. Tilton, Regional Sales Co-ordinator (West)

Charles E. Tilton joined Imperial in 1934 as an automotive engineer after experience with the British government and the automotive industry. He is a graduate in civil engineering from the University of Toronto.

In 1936, Mr. Tilton transferred to general sales as assistant to the manager of the lubricating department. He became manager of lubrication sales in 1945 and held this appointment for three years. He then spent two years as assistant manager of Ontario marketing division and was appointed eastern regional manager in 1950, holding this position until his recent change to supervision of the western area.

W. T. O’Neill Retires

After more than 40 years’ service with Imperial, W. T. O’Neill of Imperial’s refinery has retired. Born at Point Edward near Sarnia, Mr. O’Neill started to work in the Company’s filling and shipping department at Sarnia in 1910. He was transferred to Fort William three years later in charge of receiving and shipping but returned to Sarnia for a few months before going to Halifax in 1918. Mr. O’Neill has performed varied tasks for Imperial. Among them was his assignment during the post war at Goose Bay where he took charge of aviation gasoline storage and drum reconditioning at the big airport.

James Gleason, 40-year Button

James Gleason of Montreal East refinery has been with Imperial for more than 40 years. He was born in Oil Springs in southwestern Ontario near the site of Canada’s first oil well. At the age of 19 he started his first job with the Company at Sarnia. As a boilermaker he travelled extensively for Imperial until he was transferred to Montreal East refinery in 1919. He held a number of positions until, in 1946, he became foreman at the cracking unit. Mr. Gleason is a member of the Champsi Cottage Club in Montreal and a keen bowler.

H. T. Lucas, 40-year Button

H.T. Lucas, who transferred with the comptroller’s department to Toronto from Sarnia last October, completed 40 years’ service with Imperial this year. Born and educated in Sarnia he joined the traffic department there in 1912. During World War I he served overseas for two years. Upon discharge, he was reinstated at Sarnia and held various clerical positions until appointed accountant in 1944. He served in the stock audit department until receiving his present appointment as attest accountant in 1950. Mr. Lucas is an amateur color photographer.

NOVEMBER 1952
The problem: how to get at the oil half a mile under the lake.
The answer: directional drilling at an angle from a rig on dry land

Some of Imperial's crude oil is now coming from 3,200 feet beneath a prairie lake and 900 feet offshore. The well, Imperial Joseph Lake No. 10-12V, is the Company's first to extract oil from under a lake bed in Canada.

Oil has been taken from beneath lakes before, of course, and from under some river beds. One example is the great oil field of Lake Maracaibo, in Venezuela, where wellheads are built on pilings - the wells go down through the water and deep into the formation below it.

But Imperial "Joe Lake" No. 10-12V has its wellhead on the shore and was drilled by a process known as "controlled directional drilling" - the well went down and then off at an angle to reach the oil.

This use of directional drilling was one of many oil activities in Canada in recent months. In the late spring, summer and early autumn exploration and production of crude reached new peaks although a shortage of steel slowed development in some areas.

The Joseph Lake drilling cannot be considered a major new development but it was unusual because of the problems involved.

Joseph Lake is some 25 miles southeast of Edmonton and oil was discovered in the area in 1949 by Imperial jointly with other companies. Some 80 wells, producing from the Viking sands, were drilled near the lake and this year Imperial officials decided to try to reach oil under the lake itself.

They had two choices: they could either sink a well through the bottom of the lake from offshore, or they could drill from the shore. The former would involve building a complicated wellhead on pilings; the latter meant directional drilling.

Directional drilling isn't new. From the time man first began seeking oil in the earth he has encountered obstacles to drilling straight down. So over the years he has evolved directional drilling as one effective way of meeting these difficulties and has developed it into a science.

In Canada this drilling method received greatest attention in the summer of 1948 when Leduc's notorious Atlantic No. 3 went on a rampage pouring out uncontrolled oil and gas which finally caught fire. Atlantic No. 3 was a problem for all the operators in the Leduc field and production from all the other wells had to come to a halt. Imperial did not own the wild well, but on request a Company expert was loaned to supervise the fight. When other methods failed, two "recoil" wells starting 700 feet away were drilled at an angle toward the rogue. Both ended at a depth of 5,397 feet directly beneath Atlantic No. 3 and one actually broke into No. 3's shaft, a remarkably accurate drilling achievement.

The well caught fire just as the drilling was being completed. But the fire was choked off quickly by sending acid, water, mud, cement and other materials down the two relief wells to plug the original shaft.

Directional drilling shut off Atlantic No. 3 but the same kind of drilling brought Joseph Lake No. 10-12V into production.

The well was spudded in on May 21st of this year, at a spot as close as possible to the lake's edge. For 900 feet the drill went straight down. At that juncture, a piece of equipment known as a "whipstock" was lowered to the bottom. The whipstock is a long, narrow wedge and is set at an angle in the drill hole to deflect the drill in a desired direction. In the case of Joe Lake No. 10-12V the angle was 2½°. After drilling another 100 feet at that angle, a whipstock was again lowered, to deflect the bit another 21½°, and so on. There was a deflection every 100 feet so that the shaft, although started vertically, was travelling southwest at an angle of around 30° from the vertical when it struck oil on June 5th.

Men who know the oil business think that directional drilling is roughly three times as difficult as vertical drilling. The main difficulty is in maintaining the proper direction of the shaft, in two planes.

To solve this problem, the drillers use an ingenious device called a "multiple shot survey instrument", which is a metal case containing both a compass and a plumb bob, plus a camera that can photograph their readings at any given moment.

The instrument is lowered into the drill hole and photographs are taken at measured intervals. From an examination of the pictures drillers can learn in what direction the shaft is proceeding and at what angle.

The information thus gleaned at Joe Lake No. 10-12V was plotted to such good effect that the final location was just 10 feet from its target, a margin which makes no practical difference at all.
In the words of a veteran driller, the job was “the longest deflection in the shortest time in western Canadian drilling history.”

Imperial Joseph Lake No. 10-12V is a success, now producing on pump like other wells in the area. Whether further wells will be drilled directionally from the show or from pilings on the lake is being discussed. The new well will lead to other developments of the field.

Extension of some other new fields has been affected by the steel strike in the United States. The strike caused a shortage of steel casing needed to line the walls of producing oil wells. Accordingly, during the summer months, there was a substantial reduction in the amount of development drilling by the industry as a whole. Only 95 development rigs were active in western Canada during July compared with 131 rigs operating in May. This situation slightly improved in August and September.

On the brighter side, exploration operations in western Canada are continuing to expand and the activities are growing almost every month. By the end of August 184 geophysical crews and 69 geological parties were spread from British Columbia to Manitoba and up into the Northwest Territories. Of this total Imperial was operating 23 geophysical and seven geological parties—the majority being located in Alberta. Six of the Imperial crews were working in Saskatchewan, two in B.C. and two in the N.W.T.

The number of exploratory drilling rigs operating in August was 129, up 11 from the June figure. Imperial had seven exploratory rigs in action, down one from the peak in May.

The discovery of oil at Sturgeon Lake in the Peace River district by Amerada Co. increased activity in that area. From the beginning of the year to the end of August oil companies exploring in western Canada have made 50 indicated oil discoveries and 59 indicated gas discoveries. Of the oil finds 32 are classified as new field discoveries and the other 18 are extensions of existing fields or new pools adjacent to them. Over 370 wildcat wells failed to find oil or gas in commercial quantities and were abandoned.

During the same period Imperial had an indicated new pool discovery at Morinville and an extension find at Camrose, both in Alberta; and two new field gas finds in Saskatchewan.

Recently the Company has undertaken further projects in Manitoba. Last year Imperial drilled three wells in the province all of which were failures. Further geological and geophysical work was carried out and in September the Company started drilling a wildcard near the town of Virden in the western part of Manitoba. By the end of that month the drills had reached down 2,200 feet. Two other Imperial wells are being drilled in Manitoba, called Haskell No. 12 and No. 13, in the Daly field. They are the Company’s first field development wells in the province:

Alberta crude production leaped ahead as soon as navigation on the Great Lakes opened in April and during the week ending June 17 averaged a record 317,531 barrels daily. Since then daily average production has remained about 200,000 barrels.

The steel strike did not seriously affect work on the 711-mile Trans Mountain crude oil pipeline in which Imperial has an interest. At the time of writing 259 miles of pipe have been laid and it is expected that between 330 and 400 miles of the most difficult section in the mountains will be completed before winter.

The first Alberta crude ever shipped to a B.C. coastal refinery reached Imperial’s Iona plant near Vancouver on October 1st. To meet the problem of dwindling supplies from California, about 3,400 barrels were delivered by rail as the first of a series of daily shipments that will continue until the Trans Mountain line is completed next year. This is the beginning of a new era in which west coast consumers will be able to obtain gasoline, fuel oil and other petroleum products refined from this Canadian crude.

Driller G. Bussey at right keeps watchful eye on his fellow roughnecks, E. Martin and D. Alexander as they run back another stand of drill stem into the well at Joseph Lake.

High on Jackfish Mountain in the Peace River country, a rodman locates his position for a surveyor on a distant hill. Both belong to one of the Imperial field exploration groups.
Scene during the construction of Imperial's new Sarnia-Toronto products pipe line. This section is in the tobacco country northeast of Woodstock.