Preventive medicine in action
Editorial:

It Takes A Lot Of Money

FROM TIME TO TIME stories in this magazine refer to Imperial Oil as an "integrated" oil company. This is just a way of saying in one word that Imperial is engaged in all phases of the oil business. It explores for new reservoirs, produces and transports crude, and makes and sells oil products across the country; and it conducts research to improve products and methods.

Several other oil companies in Canada are integrated. In addition there are many companies that specialize in one, two or perhaps several of the separate activities listed above. Imperial faces healthy competition in every branch of its operations both from integrated organizations and from hundreds of other concerns.

While integration may enable an oil company to operate more effectively, and afford better assurance of product supply, it also creates special responsibilities and requirements. One of these requirements is for large investments.

Two cost figures mentioned in this issue emphasize the point. Our Field Report tells that more than one million dollars was required as Imperial’s share in solving the salt-water-disposal problem in the Redwater oil field. In the article “Mons Power for B.C.” we describe the transformation of Isso refinery which cost more than $131½ millions.

Most Canadians appreciate it has taken huge sums to develop the great oil discoveries in the west. The Redwater engineering item is just one—and a comparatively small one—among the many expenditures which have enabled the western fields to grow and operate efficiently. Without such investments Canada could not have become, as it did in June, the seventh largest oil-producing nation in the world.

Refinery expansion doesn’t capture the imagination like an oil field boom. But it is providing improved refinery equipment and our oil company is building for the future just as surely as when it locates the discovery well of a new oil field.

In this growing country Canadians need not only more and more oil, but also products that can be obtained only through the science of the most modern processing methods. An oil company with the best refining equipment is in the best position to supply quality products at economic prices.

The $13½ millions spent on Isso is part of a $25 million post-war program of expansion and modernization of Imperial’s refineries. Without this investment the Company would have been handicapped in providing the services from which it makes its living.

Refinery equipment is expansion and the industry, just like an individual, has had to face rising costs of living. J. R. White, Imperial’s president, said at Vancouver that it hadn’t been gettin’ to rebuild Isso 10 years ago because of the uncertain crude supply. But, he added, if the Isso modernization had been completed then it would have cost less than $87½ millions instead of more than $131½ millions.

In refining, as in the other phases of the oil industry, it takes a lot of money to stay in business.

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More Power for B.C.

At Ioco, a rebuilt refinery is now on stream bringing additional energy to oil-hungry province

On a slope rising from the shore of Burrard Inlet, 10 miles east of the city of Vancouver, there now stands an array of new equipment that incorporates the latest developments in the science of oil refining. Towering above the surrounding units is a fluid catalytic cracking unit, the "cat cracker" of Imperial's Ioco refinery.

Ioco now is the most modern refinery in Canada and the largest in the Pacific Northwest. Its massive cat cracker is the symbol of a great additional source of power from Canadian oil that will be available to help British Columbia grow.

The cat cracker, first to be built in B.C., produces high octane gasolines needed in today's automobiles and aeroplanes. It is the major unit among the new equipment which has completely modernized and transformed the refinery.

The veteran Ioco plant had served the province since early in World War I. Reconstruction, which cost $131.5 million, has almost doubled the refinery's capacity, now 22,500 barrels a day. Ioco is virtually a new refinery and it officially went "on stream" in a ceremony on September 16.

Hon. Einar Gunderson, minister of finance in the B.C. government and representing Premier W.A.C. Bennett, threw a switch to start the plant operating under the new conditions. Other speakers included Chief Justice G. McGregor Sloan, representing the Honorable C. Wallace, Lieutenant-Governor of B.C., Ioco's superintendent E. K. Lewis, and J. R. White, president of Imperial.

The government officials spoke for a province on the march, an area of bustling growth becoming more and more important each year to Canada. Its factories, farms, forests, mines and fisheries, developed by enterprise and hard work, are pouring forth steadily increasing supplies for the nation.

Oil plays its part in all these activities and B.C. leads Canada in the amount of petroleum it uses. Every day one and one-half gallons of oil products are used by every man, woman and child in the province: nearly 50 percent more than the national average.

For this reason, the change at Ioco is of provincial and national importance. British Columbia is proud of its dramatic hydroelectric projects. But oil, like water, is a source of energy and Ioco actually is a new "power plant" for the province. The 22,500 barrels of oil products it can make each day contain one-third more energy than will be produced daily by the great new Kitimat hydro project at its ultimate capacity of 1,670,000 horsepower. Ioco's output in a year will contain 14 percent more energy than all the coal produced in B.C. and the Yukon in 1952.

Above all, as J. R. White said at the opening ceremony, Ioco is "the physical evidence of a new circumstance, the assurance of a dependable and economic supply of petroleum to energize the expanding B.C. economy." He declared that western British Columbia will be in the soonest position it has ever enjoyed for a dependable supply of high-quality petroleum products.

The rebuilt refinery stands as a direct result of the discovery of the great oil fields in Alberta six years ago. For the first time Ioco's supply of crude will all come from Canadian sources.

An assured supply of crude coupled with a definite market is the basic factor that decides whether or not a refinery will be built. This factor was present when the original Ioco took shape some 40 years ago.

"At that time", Mr. White said in his speech, "it was apparent that large reserves of crude oil existed..."
in California, and that there would be exportable supplies on which we could draw to supply a British Columbia refinery by low-cost ocean carriage.

Construction of the first plant began in April, 1914, on the Burrard Inlet site. Now 10 miles from the city, the property was chosen for the refinery because it was at some distance from Vancouver—the B.C. land boom was at its peak and land prices sky-high. Tom Montgomery, Imperial's veteran refinery-build-er, now retired, liked the location on the edge of one of the world's finest harbors. There was a sandy beach, a steep wooded slope, and then a mile from the shore—a deep lake to provide fresh water.

Clearance of the heavy second growth of hemlock, spruce and cedar was a huge task. Dynamited stumps were made the land "look like a battlefield." The work went quickly and before the end of 1914 the first refinery in the western provinces was ready for action. Its opening was delayed until January 25th, 1915, because German raiders in the Pacific captured the tanker carrying the refinery's first supplies of crude.

Ioco's original capacity was 1,000 barrels a day but the refinery grew with the growth of B.C. and capacity ultimately rose to 15,000 barrels daily. For the times, the refinery was one of the largest industrial plants in the Canadian west. Big tankers anchored off its piers, large storage tanks clustered round the refining stills and coils, employees lived in an attractive town-

site specially built because a considerable distance lay between Ioco and the then built-up area of Vancouver.

IOCO'S PRODUCTS HELPDED TO BUILD B.C.

From the refinery came the products to back Imperial's marketing in B.C. "The Company had been a pioneer in supplying oil, sending some products from Winnipeg to the eastern part of the province as early as 1913—two years before the last spike was driven to complete Canada's first transcontinental railroad. By 1896 an Imperial warehouse had been established in Vancouver and the first divisional sales office was opened in 1902. Vancouver had Canada's first service station, devised in 1908 by the late C. M. Rolston, then manager of Imperial's B.C. marketing division.

Ioco inherited this pioneering tradition. Supplies were taken out of the refinery to outposts along the rugged B.C. coast. Oil products from Ioco helped in every phase of development in the province.

But a change in the crude oil supply halted the refinery's growth.

"Some years ago it became apparent that California, so long a surplus producer of crude, could not continue to serve her own vastly expanding needs and also supply export demand for crude," Mr. White explained at the recent ceremony. "This meant that British Columbia faced the prospect of being re-
moved from the orbit of economic dependable supply. In other words, it had lost its attraction as a refining area.

"This being so, we could not justify further expansion and modernization at Ioco and had to weigh ourselves to a declining position as manufacturers and depend increasingly on supplies of imported products. In fact, looking down the road, the more pessimistic of us thought we could see the time when Imperial Oil would become altogether importers and distributors of products because we had no interest or relations in California on whom we could depend for crude.

"Then, only six years ago, came Leduc and in its train a series of fast-moving events that have set up a number of milestones in Canada's economic and industrial progress. The new Ioco is the latest of these milestones."

The Leduc discovery and subsequent development of large prairie reserves did not affect the B.C. supply situation in the first few years. The story of that development now is history how Imperial started a refining industry in Edmonton; how Alberta oil spread out into the prairie markets, later moving as far east as Ontario when the Interprovincial pipe line was built to provide economic transportation.

During that period of growth across half a continent, Ioco's aging pipes and stills carried on, independent of this new Canadian source of crude.

War in Korea put new and heavy demands on the oil resources of California, which became a main supplier to U.N. fighting forces. As a result, it became increasingly difficult for Canadian purchasers to find adequate supplies there. So B.C. refiners looked over the mountains into Alberta at the still growing oil industry there and what they saw started the wheels turning toward another phase in the Canada-wide expansion of the industry.

The first obstacle to overcome was the high cost of moving the Alberta crude through 718 miles of foothills and mountains to the coast. As in the case of the eastward movement three years earlier, a pipe line was the answer.

The Trans Mountain Pipe Line Company, an independent corporation, was formed with backing from a number of companies, including Imperial. Eighty-six million dollars of financing was arranged, a route was selected and a 200,000 barrel-a-day line was soon under construction from Edmonton to Vancouver.

That undertaking was started in the spring of 1952. On April 22, 1952, Imperial signed a contract with Canadian Bechtel Ltd., of Vancouver, for construction of a new refinery at Ioco. The two projects progressed together and reached completion about the same time this fall.

Even before the pipe line was completed, Imperial found it necessary to use Alberta crude oil to supplement available supplies from the tightening California sources. In October last year, a 30-car tank train left President J. R. White was one of the speakers to salute refinery at official opening. Superintendent E. K. Lewis is next right
Crude Oil crossed the Rockies in October, 1952, to make up import shortages. For a year tank cars brought 5,000 barrels daily to Ioco.

Leduc with about 5,000 barrels of oil from that field. Every day for almost a year—until the recent completion of the Trans Mountain pipe line—a special train of tank cars has pulled into Ioco to add 5,000 barrels of Leduc oil to the daily stream.

That costly, emergency measure is ended now because of the new pipe line. Also ended are the long years of tanker shipments of California crude northward along the Pacific coast. The pipe line can move Alberta crude economically and in sufficient quantities to meet all the B.C. refineries' needs and a good deal more besides. Thus, development of crude export business is probable with reversed of the cross-border flow of oil expected for the first time in the history of west coast oil commerce.

Export of crude will not begin immediately but the pipe line has brought about a fundamental change in the entire B.C. oil supply situation. It is a change of far-reaching importance to the Pacific Northwest. For even, it means the refinery is no longer dependent on uncertain California supplies. It means, too, that for the first time in its history, Ioco products will be all-Canadian.

This is a major development in the Canadian oil industry because of B.C.'s position as the heaviest consumer, per capita, of petroleum products in Canada. The province also varies from the national average in the way it uses petroleum products. Canada as a whole has less than one half of its petroleum in the form of gasoline. In B.C. that figure accounts for about 35 percent of the total consumption.

This means a heavier demand for the group of oils which are used in heating units and diesel engines, and for bunker, used in industry and marine services. The busy seaports in B.C. make the last exceptionally busy. These unusual requirements do not coincide with what modern refineries normally manufacture from crude oil so some imports of heavier products will be necessary even with the new Ioco equipment in operation.

The Ioco equipment has been planned to serve the B.C. market as completely as possible, now and in future. The new catalytic cracking unit was designed to process 7,000 barrels daily. The new equipment also includes an atmospheric and vacuum distillation set-up. The vacuum distillation process enables the refinery to distill heavier parts of crude oil without having to heat them to the point where they "crack.

Ioco's electric system was designed by Imperial engineers and involved building a sub-station to utilize the hydro power which passes Ioco's back-door en route to Vancouver.

Other new construction includes a water cooling tower which can handle 171/4 million gallons of water a day. This massive box-like structure is built entirely of B.C. cedar put together with copper rails and galvanized bolts.

The new technical building is an attractive two-story structure which houses the chemical lab, the process engineers, process operating group and a new health centre with a full-time nurse. For the plant employees there is a new locker-shower building which also includes a large lunchroom on the second floor.

The plant will process Rockwater crude as well as that from other fields and specific treating units are included in the equipment. There will improve the quality of the gasoline and kerosene.

Getting all this heavy equipment into Ioco brought some headaches not generally encountered in refinery construction. For months before actual construction started, trucks, trains and ships poured equipment into the area.

ASSEMBLY SITE FOR 1,000-PLUS ITEMS

This created the first problem to arise from Ioco's location on the fairly steep shoreline of Burrard Inlet. Mountains rise along three sides around the refinery and the attractive waterfront where so many of the employees live. On the fourth side is the ocean, or the "sea of trucks," as it is called locally.

When great wooden cranes, steel plates, miles of pipe, huge steel vessels and the thousand-and-one other items that go into a refinery started to arrive there was no ready-made storage place. The site offered the only solution and for several months Ioco undoubtedly was the only town in the world that had a refinery erected in bits and pieces all over it—around the school, near the bowling green, outside the local coffee shop and along its main waterfront thoroughfare. To those not familiar with what was going on it was a scene bordering on havo.

Ioco school children thought it was a great innovation. Refinery authentics were not so sure. Shortly after opening of such equipment, did not share this enthusiasm and special watchmen were assigned to keep the boys and girls away from possible injury while playing in the enticing maze.

A tremendous moving job was involved in getting the two major units of the catalytic cracking plant into position. These units—a reactor and a regenerator—weighed 62 and 50 tons, respectively. One was 74 feet long and 13 feet in diameter and the other 62 feet by 19 feet.

A LONG SEA-HAUL TO VANCOUVER

They travelled 1,363 nautical miles from Los Angeles to Vancouver loaded to the deck of a big freighter. Getting them from the factory to the ship in Los Angeles was more than six-hour struggle through one of the world's busiest cities while crews missed utility wires along the route to give the big loads clearance.

Derrick barges handled the loading aboard ship and also the unloading in Vancouver harbor. Flat barges moved the cumbersome loads to the Ioco shore line and then came the trickiest move of them all, up the steep hillside to the plant site. Travel over this last half mile took 13 hours but was completed without mishap to climax one of the more spectacular "lifts" involved in the whole job.

Long before these moving jobs went into top gear other crews had completed the groundwork on the "process site." Concrete footings and foundations went in during one of the mildest Pacific coast winters in years. Laborers, carpenters, electricians and all the other craftsmen needed for the work welded through mud for weeks on end to complete their respective jobs.

As a result, just about all the "deck level" tanks were well along the way when the high riggers and welders started at work on the project. When the peak of construction activity was reached early last summer about 575 men were employed in a great variety of occupations.

A work force of that size created another problem, one more common in the heart of a busy city than on a hillside by the sea. That problem was parking. Because Ioco is 20 miles by road from the centre of Vancouver, most workmen travelled to the job in their own cars. One of the engineers put it this way: "Every man hired means another car to park." Cars were jammed into every likely-looking cranny among the rows of cars backed among the trees until land was cleared for the plant's 200-foot high flare stack. This wide expanse in a hollow at the edge of the construction area became a well-jammed parking lot for the remainder of the job.

For several weeks during the summer a dapper and strange-looking barges worked out on the inlet just below the refinery. These craft carried pipelayers who were putting in the five miles of the 12-inch line which would carry Alberta crude into Ioco from the Trans Mountain terminal on Burnaby Mountain, across the inlet.

The terminal-to-Ioco pipe line is an Imperial installation, as distinct from the main Trans Mountain line. The inlet crossing itself required three-quarters of a mile of three-quarter-inch-thick pipe which is buried in the sludge and sand at the bottom of the inlet. It is too well below reach of any vessels which travel this busy harbor.

While all these jobs progressed on a schedule calculated to "bring 'em on out even" at the end, other crews, many miles away, were doing jobs of vital importance to the Ioco project. These were the pipe line crews on the Trans Mountain system. Mile after mile they forged the long string of pipe—over 72 rivers, streams and creeks; through rugged canyons of the Rockies and over a 4,000-foot pass before the final plunge down to the Fraser Valley and the sea.

Step by step, the many phases went along on

A pipe line sucking 718 miles through the Rockies new supplies crude to Vancouver. Construction took 18 months.
Mr. White pointed out at Vancouver that the new refinery and the developments associated with it are a source of great satisfaction to Imperial people.

“For one thing,” he said, “the refinery appeals to our sense of craftsmanship. A fluid catalytic cracker is a thing of great engineering beauty and it is just as spirited and temperamental as one would expect such a beauty to be. It may take a good deal of time, a lot of patience and quite a few tons of catalyst before the idiosyncrasies of the new unit are mastered. On the other hand, when that stage is reached, the unit will perform with laboratory precision.

“It is appropriate that a province of the stature of British Columbia should have the most modern equipment in this or any other field of engineering. It is fitting that a province like B.C. should be a participant in the western Canadian oil development, that it should no longer need to rely on outsiders for crude oil and high-quality products,” Mr. White said.

Ioco refinery with these new tools will supply more and finer oil products to British Columbia’s 1,200,000 residents.
Esotes have to get used to interruptions when they’re out with Peg and Betty. The girls average 250 telephone calls daily plus 10 to 12 on weekends.

Jack Martin, a frequent traveler himself, heads the reservation work.

discovery of a new oil field; for a manufacturing repre
sentative going to study the performance of a new unit at a local refinery; or for a seaman joining a ship docked at Baltimore.

To the outsider, such travel conjures up visions of luxurious hotels, glamorous flights and good living on expense accounts. But to the men who have to make the trips it’s another story because travel can be hard work. As one put it: “Imperial has a five-day week—
if you’re in your own office. On the road the work week stretches to seven days and the eighth hour day just about doubles. Hotels? Give me my own living room and a home-cooked meal and a choice to play with the children!”

“But since I have to travel, thank heaven for Pauline,” he said. “How they ever manage some of my inferiors, I don’t know. How they can get me a hotel room when everything’s booked, I don’t know. And I don’t know how they can remain so cheerful when all their arrangements get changed around in a minute. It certainly would be tough if I had to do it all myself.”

Air transport and reservations is a double-barreled department concerned with traveling arrangements and also with the operation of Company-owned air-
craft. It is managed by Capt. R. B. Middleton, AFC, who flew with the RAF in World War II in Canada, Europe, the Mediterranean, South Africa and the Far East before joining Imperial. He took over his present post in 1947, when air transport was formed.

Assistant manager of the department is J. P. Martin, who heads the reservations work. Jack Martin was with Imperial’s traffic department before reservations merged with air transport to form a new de-
partment in 1949. There are few places in Canada that he hasn’t visited, few Imperial operations he hasn’t seen. This is because of many trips with officials when he went along to supervise complicated transportation and accommodation arrangements.

At vacation time, or when the offices are flooded with calls, Blanche Henry and Betty Bussell step in to help. Blanche is Bruce Middleton’s secretary and Betty is the department stenographer, but both will leave their usual duties and fill in on either air transport or reservations as needed.

Pauline, Peg and Jack Martin are on 24-hour call, seven days a week. Their object is to be ready for any emergencies and to provide Imperial’s travelers with efficient, speedy and dependable transportation as well as reasonably comfortable accommodation whenever needed.

“We handle all air, rail and hotel reservations for head office departments,” Pauline explained, “and the west and Samis will use us when they want accom-
modation here or in New York. We also line up pas-
sengers for flights in the Company’s aircraft, get them to the airport, make reservations at their destinations, arrange for customs inspection if necessary and see that cars are available at destinations to take the passengers to hotels.

“Being on 24-hour call makes us very popular with our dates,” Pauline related. “They often wonder what’s going on when in middle of a show, dance or party we say we’ve got to check a reservation and make a bee-line for the nearest telephone.

“And there’s nothing like being phoned early Sunday morning,” Peggy added. “I’ve got a stock answer for the inevitable did I-get-you-out-of-bed query. I just say, ‘No, I’m still in it. That is, I have a bedside phone.”

The girls sometimes have the frustrations of seeing a carefully arranged schedule fly apart when bad weather disrupts flight schedules, or a last-minute change of mind erases hours or days of work. But they both have the saving sense of humor to take it in stride and start over again rebuilding from scratch.

They do object if they are not informed when an unbooked reservation can be cancelled. Once, when rooms in Toronto were as rare as the proverbial hen’s teeth they managed to find one for a visitor. When he came in to make his home-going reservation they asked how he liked his room.

“Oh—didn’t you know? I met so-and-so on the street and doubled up with him,” was the reply.

“Things like that make it a little tough for us,” the girls said. “We know the hotel went out of its way to do us a favor and hold that room, but we can’t blame them if they aren’t so anxious to please the next time. If we’d known, we could have cancelled the reservation.”

Pauline and Peggy are quite familiar with the delays and restrictions imposed by accommodation all across Canada. Montreal rate as “tough” and Edmon-
ton “better than it used to be.” Toronto can be tough too. “But we’re used to it here,” the Canadian National Exhi-

bition or the Grey Cup football game take gala of available room. The other Canadian cities possess no special problems.”

Neither does rail travel, Pauline and Peg agreed, but flights are a problem when Toronto has the CNE or Grey Cup travelers to handle.

While they were talking a call from New York interrupted. Pauline started to arrange for custom inspection, cars and hotels, but Peg said, “You’re busy, I’ll take over. Hold on, Pauline! Why don’t they play the World Series in San Francisco and then we could get some rooms down there? Can you get a single at the Barcly for Friday . . . ?”

Reservations, Pauline continued, also makes some arrangements for Company conventions and dinners, ensuring spots at hotels and seeing that suitable rooms are provided. But travel troubleshooting re-
mains the chief activity of the little group.

As is often the case in Toronto, none of the girls in the department are natives of the city. “Western girls, that’s us,” said Peg of herself, Pauline and Betty.

Pauline is a native of Saskatoon who studied at the University of Saskatchewan for a year before coming to Toronto in 1943. She joined Imperial’s traffic de-
partment and looked after tank car records until the reservations job beckoned in 1946.

Peg came from Calgary in 1942 to a TCA special accounts desk and switched to Imperial in 1949. Betty emigrated from Edmonton in 1941 and joined Imperial in 1948 as a file clerk in the marine depart-
ment. She transferred to air transport in 1950. Betty, incidentally, is in proud possession of a shiny new private pilot’s license, V18A654, for which she qualified last Sept. 10.

Blanche is the only non-westerner—coming from Sheffield in "good old Ontario." She’s been with Im-
perial since 1945, when she started in the marine de-
partment as a stenographer and went with air trans-
port on formation.

Every day an adventure

The third-floor office in the Wellington building is one of the happiest in the Company, but the going can be tough too. “When we rebuild a schedule for the unemptenth time,” says Peg, “we begin to think that Imperial man has the clearest minds in the world— they change them as often.”

They try to follow the routine of ordering the day’s tickets in the morning by telephone. Then Betty, extending her lunch hour by a few minutes, picks them up about noon. But the rush orders usually mean a special trip for her.

The reservations office also handles requests for special flights in one of the company’s aircraft. Three of these planes are based at Toronto and three in Alberta. Of the western planes, two are used entirely by the producing departments and only the one sta-
tioned at Calgary is the concern of the Toronto group.

“When we get a request for a special Company flight we clear it with our contact director, Mr. (F.G.). Hall” Peg said. “Unless it’s an emergency we certainly don’t send a plane out with only one passenger, and instead we travel by commercial airline. Incidentally, the Company pilots make air patrols of the Samis-Toronto pipe line in addition to their passenger flights.”

Each desk has three outside and two house phone lines. Pauline and Peg handle about 200 calls a day. They find that Friday afternoons are their busiest times.

“One afternoon—a Friday, of course—Peg got busy answering the phone at 2:15,” Pauline recalled. “At 4:45 we still hadn’t spoken a word to each other. Hadn’t time.

“Encourve me—there’s the phone. Yes, Mr. Jones. Another day’s delay? Yes, we can fix it . . .”

—by G. R. McKean
REVOLUTION on the Range

Life on a ranch is still exciting and challenging but motor power is taking away its drudgery

Through the grass-green rangelands and gently rolling hill country of British Columbia and Alberta, the traditional silhouette of the cowboy, tall in his saddle is still the symbol of Canada's great ranching industry. Framed against a shifting background of white-faced Herefords, with or without guitar he remains a nostalgic figure, a lonely shepherd of the range, a human link with a romantic Past.

But in an unromantic and highly mechanized Present, there is revolution on the range, and in a few areas the man on horseback is becoming almost a curiosity.

Not that saddle ponies and the cowboys are becoming extinct. In most of the rangelands, riders on horseback are the only means of rounding-up or cutting out cattle. But many ranchers are using half-ton trucks, jeeps or tractors for transportation, for patrolling fences, checking the range and setting out salt licks. Year by year machinery is increasing on the ranch and the horse is being displaced as the primary stall to the rancher.

"A fellow hardly needs to go near a horse anymore," one rancher recently remarked thoughtfully, and perhaps a little sadly. "Why even the riders don't ride nowadays."

It is, for Western-fiction fans, a hard truth that there are some ranch owners who have hardly known a saddle, and few ranch foremen who would trade a half-ton truck for a curruse. Only the cowboy, with his string of half a dozen ponies, clings to the ancient method of transportation. And even at rodeo time, when the bronco comes briefly into his own, many a cowboy trundles his horse onto the scene in the back of a truck.

The fencing of the open range began the transformation of the West. The extension of the railroads all but ended the long beef drives and hastened mechanization. The internal combustion engine put an end to the old cowboy's hand tools and the buffalo robe. But by the 1930s, machinery had started to invade the range.
engine, in all its many forms, has contributed to the change that is now taking place. If the pickup and jeep are supplanting the horse as the standard method of locomotion, the tractor also is taking his place as the traditional beast of burden.

And since the war years when landing strips were sprinkled conveniently about the land, the aeroplane has become another farm tool. As yet only a few ranchers, of course, have been able to make regular use of "planes but in exceptional cases they have helped to clinch business deals, to whisk sick children to hospital, bring in cattle buyers, chase wolves, spot forest and prairie fires, locate lost cattle at round-up time and even to find off-rutted trails.

The physical revolution in the cowboy country is bringing many changes but the accompanying mental revolution is even more spectacular. The free-wheeling life of the open range is giving way to the disciplined control of scientific ranching.

For example, the whooping and howling cowhand has almost disappeared. These days, cattle are herded quietly and seldom into corrals for branding because it has been discovered that every time an animal breaks into a lobe it shakes off expensive steaks.

The once unenviable range is now criss-crossed in some areas by irrigation ditches and flumes on tracts to carry water to the arid soil so that more of the bison may be grazed off without making fire preventable.

Most ranchers in southern Alberta still rely on open range in the winter instead of hand feeding. But some ranchers are beginning to take hay to the wintering cattle instead of making them seek out the hay. It is tractor-hauled on sleighs and pitched off in great circles for easy and painless feeding.

Cattlemen have come to realize that a thousand acres of rangeland is useless unless it can supply fodder for the herd and as a result the modern cow-puncher is likely to know a good deal more about haying and fenceposts than he does about six-shooters and vigilante committees. This knowledge is helping keep the nation's millions of cattle in prime condition.

Many cattlemen today work against a chugging background of gas and power-driven machinery. In their hayfields, the mowing machine, hay baler and mechanical stacker have eased an otherwise backbreaking task.

On some ranges, engine-driven sprayers immersed every animal in a cloud of chemicals which control the warble fly, tick, louse and mange mite which were once as sinister an enemy as the vanishing rustler. It is no wonder that large mechanized spreads require tanks and gasoline pumps right on the ranch.

And the rancher himself is achieving a scientific efficiency. He is learning, for example, the value of pasture rotation, a method of moving cattle from field to field. This eases the burdens from the succulent grass of the barley summer fodder of the bottomlands and prevents over-grazing.

Taking a page from the book of big business, some large ranches have adopted assembly-line methods. They use a device to flip over calves at branding time so the whole operation of branding, inoculation, ear-marking and dehorning is carried out with precision.

RANCH LIFE IS COMFORTABLE

Some of the past still lingers side by side with the mechanized present. The cattle "empire" extends to smaller ranches as, for example, in B.C.'s Cariboo country. Canadian cattle ranching had its birth there in the days following the sale of the Cariboo, the rodeo of old, the traditional un-locked doors, the big breakfasts and barn dances have all been preserved along with the high ten-gallon hats, the shaggy sheepskin chaps, the elk nercrochets and spurs. But today's riders sleep in bunkhouses heated by oil furnaces and equipped -- to the distaste of some old-timers -- with hot and cold running water. Thanks to the ubiquitous jeep, the winter diet is no longer so sparse. If a man and a cow cannot say: "I had a thousand things for supper--beef!"

Many a ranch wife relies on propane gas -- a far cry from the buffalo chip fuel of not so long ago -- for cooking and heating and to drive engines producing electricity for lamp and domestic use.

And some housewives, who run irons and washing machines on gas power from tanks in the yard have been known to ask: "Won't they don't they make gas-powered vacuum cleaners?"

The loneliness of ranch life is now largely a legend. The radio brings in Edmonton's "Noon with the hockey scores, the weather forecast and the inevitable cowboy ballads. A man can drive to a village for his mail and his wife can go to a meeting of the Women's Institute where she may meet neighbors from dozens of miles around.

Children are driven off to distant schools in station wagons, drop food, store parachute to men held in for the winter on a lonely spot on the range. It is hardly a novelty to see ranch assistants drive to a roundup in a shiny new convertible.

On the other hand, there are some things about the cattle country that defy change. No machine can hurry or disrupt the natural rhythm of birth and growth around which the cattlemans' existence revolves. Cows drop their calves in the spring, as always. Herds go out to grass in April, as they did in the days of the stagecoach. Seeding and branding, dehorning and disbudding, all follow in the same orderly cycle which the old West knew.

And in the deep mountain passes of British Columbia, the truck and the rail car have failed to replace the great beef drives around which so much of the glamour of the range once revolved. For the narrow trails and treacherous curves, greasy with mud in heavy weather, give even veteran truckers pause, and often enough the cattle come out the hard way, on foot. Just last year, Floyd "Panhandle" Phillips, the long-faced hero of Richard P. Hobson's best-selling "Grazes Beyond the Mountains", drove 150 head of cattle from his Blackwater Ranch in the Athabasca Mountain country. He took his charges across mountain and river and through endless miles of sagebrush flats, to Quadra, at the end of steel, in time for the beef sale. The trek covered 300 miles and is reckoned one of the longest and hardest beef drives in recent years.

On these drives, the cowboys come briefly into his own again. The big move starts early, for the pace is moderately slow and frequent stampedes caused by fright or herd can waste days. The cattle munch their way through the country, often stopping overnight on well-grazed holding grounds which the government or individual ranchers maintain for just such emergencies.

As one enterprising rancher, the herdsmen must be equipped with papers -- a proof of ownership, presentable on demand to the RCMP, a trailing permit from the government, and a bill of sale which must be checked with the figures branded on the hide before the inspector at the shipping point will allow the herd to go through.

But the drive itself is as tedious and hard as it was in the days of the Chisolm Trail and riders and horses alike must be creatures of even temperament and adaptable nature. At night, come frost or rain, the crew rolls their blankets under the stars, as they have been doing since horses were a young woman, or take their turn in the dark, silent nights, riding slowly around the herd.

And bees, away from the tractors and balers, the gas-engines and the jeeps, the tiled bathrooms and the deep-freeze units, the 1963 cowboy follows the example of his predecessors of another era and rolls his cigarette, bunched low in the saddle, or sings his lonely, plaintive lament to the cold Western moon.

They lose their way on this ranch. Piling it would be a backbreaking task were it not for their mechanical stacker.

The space heater in this farm house provides a cozy spot for the family on a cold night. The fuel used is stove oil

As ranch tools, tractors, automobiles and other mechanical equipment now take their places beside the faithful horse.

N O V E M B E R * 1 9 5 3

I M P E R I A L O I L R E V I E W
"An Ounce of Prevention..."

Imperial's program of preventive medicine is designed to guard the health of its 13,500 employees across Canada.

International recognition of its health program for employees came this year to Imperial Oil. The Company was awarded the 1953 Health Achievement in Industry citation by the Industrial Medical Association for "an outstanding contribution to industrial health".

Imperial is the first Canadian company to receive this honor. The award is made annually to the individual industry, in the United States or Canada, which is considered to have developed the most constructive health maintenance program in a conspicuously short period.

The Industrial Medical Association is an international body of doctors and scientists devoted to improving health practices and medical services in industry. The 2,500 members of the 26-year-old organization represent industries and universities throughout the United States and Canada.

Dr. Russell G. Birrell, Imperial's medical director, accepted the Achievement award on behalf of President G. L. Stewart (now Imperial's Chairman of the Board) at the I.M.A. annual meeting in Los Angeles. The presentation was made by Dr. Grafie R. Rowntree, associate professor of public health at the University of Kentucky.

"During a five-year period", said Dr. Rowntree,

Program emphasizes regular check-ups including top-to-toe examination, scale for eye and ears, urinalysis, blood test and chest X-ray. A check-up takes one to two hours.

International medical award won by Imperial Oil was presented to Dr. R. G. Birrell (left) by Dr. J. G. Rowntree of I.M.A. It was the first time award came to Canada.

"the Imperial Oil medical department has grown from a pre-employment examination program to a completely well-rounded industrial health program."

Dr. Rowntree pointed out that Imperial has more than 13,500 employees, and medical and health centers have been established in 14 different plant locations throughout Canada. The Company's medical personnel has grown from one part-time physician to nine full-time and 16 part-time physicians and from two nurses to 24 full-time nurses.

Compressed into that brief presentation message is the story of years of planning, building and progress in preventive medicine.

"The key to the program", says Dr. Birrell, "is the opportunity afforded employees to have an over-all assessment of their health at periodic intervals. The objective is to advise them how to continue in good health and where disease is detected to advise them on suitable treatment. The success of such a program is entirely dependent on whole-hearted co-operation throughout the Company."

Sometimes conditions which could lead to serious illness are revealed by the searching examinations that Imperial's doctors give even the most minor complaints.
As an example, one middle-aged employee visited a Company medical centre with several minor complaints and had a complete examination. As a result of the doctor's findings, this employee was successfully treated for an early cancer.

Not all cases in the medical department's files are as dramatic as that. It is, however, a good example of early diagnosis made possible because preventive medicine is in action.

The program concentrates on long-term study of the individual employee. This is done by a thorough medical examination before employment, by voluntary periodic medical examinations, and by having doctors and nurses available to employees—where practicable—during working hours. They are there for consultation on medical problems and for initial treatment of accidents or minor ailments ranging from cuts and bruises to headaches and colds.

At the same time Imperial's doctors, along with many medical men, are aware that purely physical ailments do not account for all health troubles.

Much of the work is counselling and directing employees' thoughts along channels of accepted health practices. What some employee need is an opportunity to unburden themselves and get guidance from a nurse, doctor or some other agency.

When people say "I'm worried sick", sometimes they're not exaggerating. An employee came to a Company health centre seeking relief from continuous headaches and colds. A talk with a nurse during treatments for his colds brought out his story.

His child needed a year in hospital. The prospect of a mountainous medical bill appalled him. Worry fastened on his mind. His health slumped and colds and headaches took over. A thorough examination did not reveal any other physical ailments.

When the Company nurse heard his problem, she arranged a meeting at which he talked it over with his family doctor and a representative of the hospital where the child was to be sent. They set up a method of payment that fitted his budget. With worry gone, his normal health returned.

In short, preventive medicine seeks to help the "whole man" mentally as well as physically. Imperial believes that such a program is the best way to maintain good health among its employees. Good health means increased efficiency in operation. Less time lost in sickness, fewer accidents and lower labor turnover. For the employee it means the well-being that brings happiness. Under such a program he is likely to live and work longer.

The program begins with a complete medical examination when a job-applicant is being considered. This is called the "pre-placement" examination.

At this point the prospective employee learns his first, and perhaps the most important, fact about the Company's health program. Everything discussed—

Cold and other minor ailments are treated but serious complaints are referred to medical people outside the Company.

Out comes that worthless splint! First aid treatment is available to all personnel during regular working hours.

Company doctors at Edmonton examine X-rays obtained at periodic medical. X-rays often are taken between check-ups at any time—between the medical department and the employee is confidential. Details about the individual's health or other information learned by the doctor and nurse are not supplied to anyone without the employee's consent.

The doctor informs the employing department only whether the applicant can work without danger to himself or others, and the nature of any limitations which should be in effect so that he may work safely.

After the man or woman joins the staff the program hinges on employee co-operation because most later examinations are voluntary. The only exceptions are in certain specialized jobs—such as truck drivers, Company aeroplane crews or men working with toxic materials—where regulations require compulsory medical examinations for general safety or personal protection.

For the most part, check-ups are at the employee's request. The doctors like to see everyone under 35 years of age at least once every three years for a complete check-up; those between 36 and 45 at least once every two years; and those over 45 every year.

Like the examination before employment, the regular periodic examination is exhaustive. It includes tests for the eyes and ears, as well as a blood test, chest x-ray and urinalysis. For all in the over-40 age group an electrocardiogram is taken as a matter of routine, where facilities are available. A top-to-toe check-over is given by a doctor, the complete examination taking from one to two hours.

The periodic examination is the foundation of the program. Frequent short calls by employees at the medical or health centres for minor complaints supplement the examinations.

If during an examination a doctor finds conditions which he thinks need correction or treatment, he advises the employee to see his personal physician or a specialist. If the employee wishes, his medical history and the Company doctor's diagnosis are sent to the family doctor. If the employee has no family physician, the names of three doctors in his neighborhood are supplied. If a specialist is needed, the department suggests three names.

Medical or health centres in no way take the place of the family doctor, specialist or hospital. Rather they complement their services. All treatment, unless it is minor or for an emergency, is handled by medical people outside the Company.

Company doctors' files list many examples of early diagnosis. There are those that involved tuberculosis or cancer. In others, unexpected cases of advanced or early diabetes were revealed. Heart cases, ulcers and epilepsy, skin, bowel and bladder disorders, cancer, rashes and other conditions were found.

There was the young stenographer who couldn't seem to shake a cold. She checked with the medical centre. From her medical history the doctor knew she had once had tuberculosis of the lung. An examination revealed it had flared up again. After treatment in the sanatorium, she was able to return to work.

The stenographer was one of 53 cases of active tuberculosis discovered by the department in the past three years. Of these, 20 were discovered at the time of pre-placement examination. The remaining 33 were among Company employees; 6 were rehires. 11 were found on voluntary periodic examinations and 16 reported sick.

Imperial's doctors now have a pretty good idea of the state of health of the Company's employees because of the numerous check-ups and clinical visits. The employees compare well with the national average for ill health and physical troubles which doctors call "abnormalities." Used in this sense the word abnormalities includes everything from hammer toe to the scars left by a heart attack.

The department has conducted 7,247 preplacement
and periodic examinations in the past year. For statistical purposes the doctors made a spot check of the records of 648 periodic examinations. As in previous spot checks they found that about one-quarter of the employees were top category and had no physical irregularities. For the other three-quarters, 1,104 abnormalities were listed, of which two-thirds were old conditions and the other third—38%—relatively new.

Of the 1,104 conditions discovered, 657 should have been under medical supervision. Only 255, or slightly more than one-third, had been treated or had had any type of medical care.

What do these statistics mean in terms of sickness and health? In some instances there probably would have been only slight ill effects or perhaps none at all. In others, the conditions discovered indicated serious illnesses like the middle-aged man who was walking around with severe diabetes and didn’t know it. He was sent to his family physician for treatment, and returned to good health.

The preventive medicine program has developed since 1947. Before that date the Company’s medical section was chiefly concerned with examining applicants for employment. For emergencies, doctors were on call at refineries.

The pattern of medical care has changed, and more and more people have come to realize the worth of visiting the doctors for regular check-ups.

Imperial recognized this new trend. War’s end provided the opportunity to expand the Company’s medical services into a comprehensive program.

The first major step was to make the medical section a separate department. The second was the appointment of Dr. Birrell (Canadian-born authority on industrial medicine, who has worked in China, South America and the United States) first as consultant and then as medical director.

AFTER A COUNTRY-WIDE SURVEY

Following a survey of the Company’s medical facilities from St. John’s, Newfoundland, to Vancouver, a long-term plan was charted to expand these facilities and give all employees equal health service.

The plan is not yet complete but is being developed as fast as space, personnel and local conditions permit. Other Company departments welcomed the program and gave full co-operation to the expansion.

Since the present plant at Bakersfield, when it is completed, will be one of the largest in the world, the Company moved early to set up proper medical services at that location.

At Montreal East, health centre with its shrubs, flowers and green grove nook amid refinery tanks and towers

Counter at her left hand aids the lab technician to estimate the percentage of various types of cells in a blood sample

DETECTIVES IN WHITE

The expansion in facilities has meant an increase in the medical staff and the personnel have been chosen carefully. Today most of Imperial’s doctors are specialists in internal medicine and do diagnostic work. They are not there primarily to repair, but to remove the necessity for repair.

They have a thorough background in industrial diseases and their causas. They need this, for symptoms often are not quite what they seem. The industrial physician often encounters complaints which could perhaps be due to conditions of work, but could just as well have no connection whatsoever with the employee’s job. The cause of some of these complaints can be found only after thorough investigation of the job, and a complete medical examination, including repeated tests of the blood and urine.

Sounds more like a detective’s job than a doctor’s, doesn’t it? And, in fact, company physicians often double as detectives not only in early diagnoses, but also in that branch of preventive medicine known as industrial hygiene. Normally, though, the engineering phase of this work is performed by specialists called industrial hygienists working in the medical department.

Imperial has its own industrial hygienist who watches for health hazards in Company locations across Canada. Special measures are needed in such places as refinery laboratories, pump houses and where exhaust gases may pollute the air. The industrial hygienist also investigates such working conditions as air and water supply, light, noise, sanitation and other conditions which might impair health.

Industrial doctors are versatile and so are industrial nurses. Nurses in industry have long since graduated from the simple first-aid treatment that was once their work. They still provide this essential service, but also fill many other roles.

The Company nurse who always works under the directions of a physician is usually the first person to interview a sick employee. Particularly in a health centre operated by a nurse, she has the responsibility of deciding the immediate treatment.

A nurse must be alert to spot symptoms that might indicate a condition which may be serious. She has to be a counsellor, a teacher and above all, a good listener. She must keep pace with the latest trends in industrial medicine and be familiar with local working conditions.

She must know the health, welfare and social services available to the Company’s employees in her area, and be on a co-operative footing with these agencies. Sometimes her work takes her outside the field of industrial medicine, as it has with nine Company nurses, who recently took courses in civil engineering. They studied the nursing aspects of atomic, biological and chemical warfare and some were trained to lecture to other groups.

Because employee problems often are basically emotional the nurse must be mature, capable, and
have a sound professional background to qualify her to give advice and practical help.

All Imperial’s nurses are selected on this basis. As well as the basic training common to registered nurses, many of them have served with government public health units or with such organizations as the Victorian Order of Nurses, and some with the armed forces.

Through the nurses many employees become acquainted with the Company’s health program. From them they receive many health tips—weight control and good eating habits—that mean the difference between good and mediocre health.

One of the nurses’ most important jobs is that of teaching people, under the doctor’s direction, to live within their physical work capacity.

Imperial has at work today some employees with heart or other conditions, who, a few years ago, would have been retired as physically incapable of carrying on. The Company gains from the knowledge and experience of the older employee and the employee has many more years of profitable employment.

Such results have been the medical plan’s own advertisement. So much so that in some areas the demand for medical service is beyond the present facilities.

In areas where the plan is operating with full facilities, the close contact of employees with the medical staff has brought a new sense of security.

“We feel we can talk to him (the doctor) because he’s an Imperial man”, one refinery worker said, expressing a reaction that is widespread among the employees.

“It’s a wonderful thing to be able to get advice when you feel there’s something wrong with you,” another employee remarked. “And after one of the regular check-ups you’re like a car that’s just been overhauled—you feel in good condition. You know your health is good and you can go away and forget about it until the next visit. That means a lot to a man and his family.”

Long-Service Men Receive 40-year Buttons

F. C. Jarvis, Saskatchewan Marketing, Retires

Forty years ago last spring, F. C. Jarvis joined Imperial as a teamster. After three years he enlisted in the Canadian Army and served in France. Upon discharge in 1919, he returned to the Company as a chauffeur. Throughout the years the duties he performed have been designated as those of a motor tank salesman, driver—route sales, tank wagon driver and route salesman. In 1949 he became an air station attendant and held this position until his retirement. Mr. Jarvis is now living in Victoria, B. C. where he spends much of his TIME gardening or fishing.

Henry E. Kitson, Manitoba Marketing

In the fall of 1912, “Harry” Kitson joined Imperial’s marketing department as a sales clerk at Winnipeg. Except for 18 months with the U.S. Army during World War I, he has been with that department ever since. He held various positions in the Winnipeg office until in 1920 he was priced clerk and salesman. He was transferred to Brandon at that time to take over similar duties. In 1933 he returned to his home office. Since then he has filled many accounting posts and is at present a voucher clerk. Mr. Kitson is the son of the late Percy Kitson, formerly secretary-treasurer of the Company’s Co-operative Investment Trust Fund.

E. W. Lafond, Quebec Marketing, Retires

After 40 years with Quebec marketing division at Montreal, Eddie Lafond has retired from the Company’s pension plan. Born at St. Scholastique, P.Q., he was educated there and at St. Columban. At the age of 18 he only spoke English but he studied in English and French and became bilingual. He joined the Company as a sub-section report clerk and held various other positions. At retirement he was a senior service clerk. Mr. Lafond is married to the former Delphine Parks who, before her marriage, was a bookkeeping machine operator in Quebec division.

Gerald A. Ferguson, Comptrollers, Toronto

G. A. Ferguson, co-ordinator of marketing accounting, was born and educated in Winnipeg. His first job with Imperial was as a clerk in the marketing office in his home town in 1912. During World War I he served overseas with the Canadian Field Artillery as a regimental staff sergeant-major. On discharge he rejoined the Company, this time at Calgary. In 1919 he was transferred to Edmonton as chief accountant and remained there for eight years. After a short sojourn in Montreal while on special assignment, he joined the marketing-accounting department at Toronto in 1949, becoming assistant co-ordinator in 1947 and co-ordinator in 1950. Mr. Ferguson is active in community affairs and is a member of the group committees of the 32nd Toronto, Boy Scouts.

Sernaw G. Stokes, Sarnia Refinery

Co-ordinator of shipments at Canada’s largest refinery, Lt. Col. S. G. Stokes, MC, CD, is also Imperial’s chief security officer. Born in Petrolia, his first job with the Company was in the paraffin department of Sarnia refinery. Col. Stokes has had a distinguished career both in the active and reserve army. He enlisted as a private in 1915 and was discharged four years later as a lieutenant. In 1932, after 15 years with the Reserve, he retired but in World War II was called up to form the 11th Field Co. Engineers (Reserve). Col. Stokes is also a keen sportsman. Member of the team winning the Dominion junior rugby championship in 1931 he also was club manager of Sarnia Imperials when they won the intermediate honors in 1932.

William G. Camp, Traffic Department, Toronto

William Camp has been with Imperial since May, 1913, when he became a shipping clerk at Fort William. Three years later he moved to Sarnia with the traffic department and followed that department to Toronto in 1919. In 1934 he was appointed chief assignment clerk and in 1946 was named to his present position of traffic assistant in charge of assignments. Mr. Camp is a Maritime, born and educated in Hallowell, N.B. He has many outside interests including stamp-collecting.
Mr. Grey Cup

Not content to have been an outstanding halfback
and Mayor of Sarnia, Safety Supervisor Norm Perry
this year heads the Canadian Rugby Union

A Grey Cup time rolled around this year with 50,000
rugby fans clamoring for 27,000 available tickets:
top man in Canada's biggest big-time sport was 49-
year-old Norman Perry, a safety supervisor at Im-
perial's Sarnia refinery.

Norman Perry was elected president of the Cana-
dian Rugby Union last March, climaxing a brilliant
football history as halfback, coach and manager of
the Sarnia Imperials, and other executive jobs with
the C.R.U. He is the man newspaper columnist Ted
Reeve once called "the finest running halfback in
Canada."

Perry has had a triple threat career. He has worked
at the refinery for 33 years. He has been a leading
figure in sports—hockey and lacrosse as well as
rugby. And he has been prominent in the community
life at Sarnia, serving as alderman and later as
mayor of the city. Today, along with his refinery
safety duties and his job as Canadian rugby's top
officer, he carries on civic work as a member of the
Sarnia Parks Board.

Norm was a boy of 16 without a high school educa-
tion when he started with Imperial as a laborer in
the fall of 1920. He had been playing rugby for a
year with a junior-league team known as the Wander-
ers. By the time the Wanderers promoted themselves
en masse to intermediate standing in the Ontario
Rugby Football Union, he was working for the
refinery's transportation department.

The following year, 1924, the Imperial Oil Em-
ployees' Athletic Association took over the Wander-
ers' franchise and the Sarnia Imperials were born.
The team showed its gratitude by winning the
ORPU intermediate championship which the boys

After 16 years playing rugby, Norm Perry in 1935 ended
his career as "the finest running halfback in Canada"
During all his sports and community activities Perry has been an Imperial employee at Sarnia for over 35 years held pretty firmly until 1928.

In that year, while Norm was with the refinery tank car repair department, the Imperials moved up again, this time to senior ORFU status. They made the league finals in their first season, won the league title in their second and defeated Regina to take the Grey Cup and the Dominion title in 1934. By then Norm had played senior for seven seasons during which he had earned the reputation of a man who could carry the team by his spirit.

Meanwhile Perry had demonstrated that he could tackle his refinery jobs as well as he could handle the pigskin. He passed a six-months' night school course and was transferred to the refinery gauging department where he remained until the war years.

Even when he was a "creaking 28-year-old" and when his playing career was drawing to a close on the rugby, lacrosse and baseball fields, he rated with the professionals. A Detroit Tigers' scout saw him in a semi-pro baseball game at Port Huron and discussed a possible contract. It would have severed him from the oil industry and have ended his happy association with the Imperials, so he turned down the proposition and became assistant coach and manager for the Imperials. His active playing with the team ended in 1925 when he broke his leg in a pre-season game at Calgary. This is the only serious injury Norm has suffered in sports.

A new field of activity opened up to the Sarnia rugby hero when friends asked him to run for alderman in 1937. They maintained it would be an excellent example to the youth of Sarnia if a prominent athlete were to become a member of the city council.

Moreover, Sarnia could use his zeal and common sense, they argued. They were not dissuaded by his plea that he knew nothing of municipal government; nominated him and saw public acclaim carry him to the head of the polls. A year later he became Sarnia's mayor by acclamation.

Soon after he came into office as a freshman mayor, Norm Perry faced a civic function that many a veteran public official met with some apprehension. The 1939 royal tour itinerary of King George VI and Queen Elizabeth included Sarnia and it fell to Norm to welcome Their Majesties. In borrowed finery, the former halfback carried off the great occasion with all the dignity of a seasoned diplomat.

Perry ended his term as mayor of Sarnia just after World War II broke out. When the war extended to the Pacific and cut off supplies of rubber, the Canadian government built the big Polymer plant near Imperial's Sarnia refinery. Norm was one of the experienced men in established industry needed to man the new war plant; his task was to set up a safety department.

When the war ended, he returned to Imperial as a safety supervisor for the refinery, the job he holds today. He is extremely happy about it. The refinery's safety record is good, he says, but it's not yet perfect. The pursuit of that perfection gives him a goal that he thinks will keep him busy until the day he retires.

From Player to Executive

His link with the sporting world took on an executive phase in the post-war years and, as representative of the Ontario Rugby Football Union, he became successively third, second and first vice-president of the Canadian Rugby Union. Now as top man in the CRU he's busy with policies for this large and important organization.

Norm thinks Canadian rugby today is about as fine a game as exists and he plans to devote his energy to keep it that way. Because of his other activities, his association with the Imperials necessarily dropped off and, by 1944, he had disconnected with the team but acts as a councillor for the younger officials. He no longer plays an active role in any team sports.

In 1925 when Norm was with the transportation department, he married Marie McPhail, daughter of Duncan McPhail. His father-in-law is an Imperial pensioner who formerly worked in the Sarnia refinery boilermaker's department. Norm and his wife have two sons. Don, 22, is at Michigan State University, finishing his course in business administration. Richard, 19, is in high school and often brings a special gleam to the eye of Perry. Senio, as he plays his favorite sports, baseball and high school rugby.
A Toronto university graduate, Richard D. Russell, is trying to determine the ages of minerals and of the earth itself.

W. Donald Wood of Palermo, Ont., graduate of Queen's and McMaster universities, is analysing real wages in Canada between 1900 and 1950.

A Rhodes scholar from St. John's, Newfoundland, E. David Morgan, graduate of Dalhousie, has some challenging research under way in organic chemistry.

George W. Taylor of Ottawa, also a Queen's graduate, is working in the field of molecular energies and will study the effect of light on chemical reactions.

Each is trying to add to man's store of knowledge in different ways and in different locations but they have in common Imperial Oil's interest in them and in their work.

The four men are this year's winners of Imperial Oil fellowships. They bring up to 12 the number of post-graduate students from all parts of Canada who are studying under the fellowship plan. Each fellowship provides an award of $1,250 a year and may be held for a period of up to three years.

This year's winners will work toward the doctor of philosophy degree in leading universities in Canada or in Great Britain or in the United States. Though their research may lead to important discoveries, Imperial specifically waives all rights to any patents which may result.

Fellowship winners need have no connection with Imperial and are under no obligation to the Company. The sole object of the plan, which was initiated in 1946, is to assist graduates of Canadian universities to conduct post-graduate research in the universities of their choice.

Fellowship applicants are nominated by their universities and are selected by a committee set up in co-operation with the National Conference of Canadian Universities. Four fellows are chosen each year on the basis of scholastic standing and aptitude in the selected field of research. Two awards are made annually to graduates in chemistry, physics, or engineering; one in geology; and one in economics, industrial relations, or business administration.

R. D. Russell was recommended by the University of Toronto where he has been studying since 1946. While obtaining his B.A. and M.A. degrees, he earned such awards as the Class of 1930 bursary in mathematics and physics; the Garnet W. McKee-Lachlan Gilchrist scholarship, and the John Macara scholarship. Now entering his final year of studies for a doctorate at Toronto, he has arranged to spend the 1953-54 session at the University of Chicago's Institute of Nuclear Studies. Married, he had been living in the Toronto suburb of Mimico.

A married RCAF veteran who was once general merchant and postmaster in his native Palermo, W. D. Wood was recommended by Queen's University where he obtained an M.A. in economics and industrial relations. His studies have earned him the Dean's Honor Award at McMaster University where he obtained a B.A. in economics; the C. J. Hicks fellowship in industrial relations at Queen's; and the Hick's Memorial fellowship for study at Princeton University in the U.S. where Mr. Wood has already completed one year in economics and industrial relations.

E. D. Morgan is already at Oxford on his Rhodes Scholarship—in fact, he now has an Oxford B.A. as well as one from Dalhousie. It was Dalhousie that recommended him for an Imperial Oil fellowship to assist his doctorate work in organic chemistry at Oxford. The fellowship is the latest in a series of academic honors earned at Memorial University College in his native St. John's, Newfoundland, and at Dalhousie. Among them have been the King George V scholarship, selection as a Senior Jubilee Scholar for Newfoundland, the B'nai Brith prize in biology, the Chemical Institute of Canada prize, and the Governor General's Medal at King's College, Halifax.

Recommended by Queen's University, G. W. Taylor will return to his native England for study in the field of molecular energies at Cambridge. His home is in Ottawa. At Queen's since 1948, he has received his B.A. and has been working on his Master's thesis. Along the way he has won a Defence Research Board grant, a University scholarship, a Canadian Institute of Chemistry scholarship, Physical Chemistry prize, Ontario Research Council scholarship, and the Irving fellowship.

Fellowship winners were selected this year by a committee headed by Dr. E. Holt Gurney, former chairman of the Ontario Research Foundation, and included Dean D. S. Ellis of the faculty of applied science, Queen's University; Dr. R. P. Graham, professor of chemistry, McMaster University; Dr. Léon Lortie, director of extension service, University of Montreal; and Professor J. C. Cameron, head of the department of industrial relations, Queen's University.
Field Report

The Wells That Put It Back

Oil water is sent back underground at Redwater, solving a major production problem

Oil activities in Canada this year have included several memorable developments. Oilmen solved a major production problem at Redwater, drilled the deepest well ever drilled at Leduc and pushed two great pipe lines toward completion: the Peace Mountain line west from Edmonton and the extension of the Interprovincial line east from Superior.

More Canadian oil was produced in the first six months of 1953 than ever before in a half-year period and production remained at a high level throughout the summer and into the autumn. In the early part of the year exploration was on a slightly reduced scale from the latter part of 1952 but this trend had reversed by late spring. Recent Imperial oil finds in Saskatchewan, Manitoba and southwestern Ontario have been of particular interest.

The Redwater production problem, which first arose two years ago, was formidable. Canada's largest oil field had developed salt water trouble.

When oil comes from a well it is often accompanied by salt water which must be separated from the crude. In most fields this is no great problem, but as production grew at Redwater, the amount of water increased until special measures had to be taken to dispose of it.

In the early stages the water was trucked away from the producing area but eventually there was more than the trucks could handle.

The answer was to install pipe lines to gather the water much in the way that oil is gathered, then to inject it back into the reservoir rock.

Representatives of most of the operators in the Redwater field met two years ago to discuss the situation. Their first official move was to form the Redwater Water Disposal Co. Ltd. A large investment was required and Imperial's share in it has been more than one million dollars.

Following an intensive study of design details, the new firm set to work testing the nature of the water reservoir below the oil, drilling disposal wells, laying concrete-asbestos pipe (to resist the corrosive effect of salt water), excavating pits to accumulate the water at the disposal wells.

Part of the system had to be installed through muskeg with underlying quicksand. In some places

The salt water that comes in with crude at Redwater field is separated from the oil in treating units (above) and piped to the special wells that send it back to the reservoir rock.
the quicksand sound back so quickly that the pipe line workers had to dig the trench, install the pipe with chain hoists and finish backfilling within 15 minutes.

By last November, three disposal wells of a projected eight were available for returning water to the reservoir, but delay in obtaining equipment set back the starting date to December 8th.

In the operations early this year, water was being received from 39 producing batteries with about three-quarters of it gathered in through 25 miles of pipe. Within three months of the starting date some 300,000 barrels of salt water had been received in the big concrete storage pits at the disposal wells to be fed back to the reservoir where it originated.

Plans last summer called for another 40 miles of pipe and three more disposal wells with storage pits and cellsers at each new disposal site. A large part of Canada’s first water-disposal system has now been installed and the special wells are at work, not bringing liquid to the surface, but returning it to the earth.

The same day the Redwater Water Disposal Co. started operations—December 8th—a significant field test got underway in the Leduc area a mile southwest of the discovery well. Imperial’s veteran toolpush, Joe Jackson, and his crew spudded in a deep test wildcat well, Imperial Leduc No. 590, in the heart of Canada’s second largest oil field. The drillers were in search of a new, deeper, “pay zone”. Working night and day for the next three months they bored down through the D-2 and D-3 oil producing formations to the granite bedrock below Leduc. When their rotary bit struck the Precambrian igneous rock at 8,066 feet they had not found oil.

The result was, naturally, disappointing as an oil-bearing D-4 formation would have added millions of barrels to the 200-odd million barrels of recoverable oil found at Leduc. But the disappointment was offset by the information gained. According to the geologists and geophysicists “a tremendous wealth of geologic and stratigraphic information has shed new light on the origin and growth of the Leduc biocenosis”.

**PRODUCTION RECORD**

One of the brightest chapters of the oil story in western Canada this year concerned the industry’s production totals.

In the first half of the year western oil wells produced over 33 million barrels of crude, an all-time record. With the July and August production added, the figure reached more than 49 million barrels.

During August, some 4,297 wells in western Canada were producing crude at 249,791 barrels of crude daily. Imperial operated 1,426 wells which produced 115,597 barrels in the month.

Purchasers of Alberta crude were asking for a record 268,960 barrels per day during August, 38 percent above August, 1952. The large increase was mainly due to the need for oil stocks to fill the Trans Mountain Oil Pipe Line Co’s storage for transmission to the west coast. Imperial was the major purchaser, asking for 56 percent of the August output.

The recent completion of the Trans Mountain line from Edmonton to Vancouver has provided a new outlet for Alberta’s oil fields. The 718-mile line was built to have an initial capacity of 125,000 barrels daily. This, however, will not be required until two large projected refineries are completed in the state of Washington. Present throughput of the line is much less than capacity. As described elsewhere in this issue of the Review, Imperial’s large refinery at Vancouver has been re-built and modernized to increase its capacity from 12,000 to 22,500 barrels daily in readiness for the Trans Mountain throughput.

**WORLD’S LONGEST PIPE LINE FOR CRUDE**

In the east, the 635-mile extension of the Interprovincial pipe line from Superior to Sarnia is slated for completion by December. Crossing of a four-mile stretch under the Strait of Mackinac constituted one of the most hazardous and difficult feats undertaken in the entire length of the line.

With the final link to Sarnia, Interprovincial will be the longest crude oil pipe line in the world, a 1,765-mile artery from Edmonton. Initial capacity will be 120,000 barrels daily.

Meanwhile the quest for new discoveries continued in western Canada. The search went on in the four western provinces and the Northwest Territories, in points as far apart as Blue Wing Lake, Manitoba, and Liard Rapids in the Territories.

Exploratory drilling activity edged ahead of last year’s records in the first eight months of the year. From all operations 72 indicated or actual oil discoveries, 68 gas discoveries and 36S dry holes. Imperial drilled 33 wells, resulting in two oil discoveries, seven indicated gas wells and 24 dry holes. In the summer more rigs went into operation so that by the end of August some 206 rotary rigs were in operation. Of these 107 were wildcat and 99 development.

Nearly three-quarters of the rigs were working in Alberta. About five percent of western Canadian drilling was in British Columbia and slightly over one percent in Manitoba. Forty-seven rigs were active in Saskatchewan, the largest number—37—being at wilddrifts or step-out tests. Imperial had 22 rigs in the field at the end of August, 19 in Alberta and three in Saskatchewan.

In October, Imperial was able to report encouraging results both in Saskatchewan and in Manitoba. The Saskatchewan discovery, Imperial Smiley 7-15, was in what had been considered a gas pool in Viking sand. It yielded crude oil of good gravity and low sulphur content—the first light oil with these characteristics to be found in commercial quantities in Saskatchewan. Imperial drillers also brought in what may prove to be one of the best producers so far discovered in Manitobal. The well, near Virden, had an initial flow of over 450 barrels daily of 35 gravity crude.

Rotary drilling had interesting results in southwestern Ontario where gas and oil have been produced for over 90 years. In this pioneer region, the scene of North America’s earliest oil discovery, the cable tool rig has been the normal drilling tool. This year a rotary rig of the type used in western Canada was introduced to enable drillers to penetrate beneath areas of high gas pressure. First result was an encouraging oil show in Imperial’s Sackerton gas pool last spring. This was followed by a discovery of greater commercial importance in Warwick township. A well with production in between 130 and 140 barrels daily was brought in and now three additional wells are being drilled nearby to evaluate the find. **Moore Township farmer Robert Medley watches the first rotary rig to find oil in Ontario. Usually cable tool rigs are used**
Geologists encountered this unusual rock mass when searching for clues to underground oil deposits near the town of Hay River in the Northwest Territories.