THE EDITORS SAY:

NEW oil fields are important things — always in a hurry to push their production out to the markets where it can serve mankind in a thousand and one ways. But what a bundle of activity that entails! At this writing work is progressing to enlarge the pipeline capacity from Turner Valley to Calgary, to increase the capacities of Calgary and Regina refineries, and to provide new equipment at these plants. Through Regina, with the assistance of a reduced freight rate which is commensurate with pipeline costs, the Company will be able to push crude and products made from Turner Valley crude as far east as the Manitoba-Ontario line, thus helping to relieve the pressure of production. Another important step to meet the situation was taken some time ago when the Company ceased to import crude for its Prairie refineries.

** **

The North goes marching on! Valiant work is being done by the new pipeline at Bear River in time to permit of its use before the sub-Arctic Winter sets in. More detailed information on pages 7 and 11.

** **

If we continue at the present rate of killing and stealing people on the highways poteus will probably refer to this as the homicidal age. In an effort to combat the menace of carelessness on the road Imperial Oil recently inaugurated a crusade for safety that has since become a public movement. More about the White Cross Safe Driving Movement on page 15.

** **

There's something romantic and colorful about the stern paddlewheeler. At any rate we think there is and hope you think so too. Hence the story in this Review of the Tropical Oil Company's steamboat fleet on the Magdalenas.** **

There was a little "Imperial" conference in old London not long ago — or should we say "Ex-Imperial"? A letter to Vice-President John McNeil from Frederick J. Wolfe, Chairman of the Board of the Anglo-American Oil Company Ltd., reveals that there gathered in London at the same time Mr. Wolfe, formerly Vice-President of Imperial Oil, G. Gordon Bell, Director of Anglo-American also formerly Imperial Oil, and the following ex-members of the Imperial organization who are now retired under the Company's pension plan: Robert Caldwell, Col. J. A. Oller, C. M. Roblin, and Frank Turley.
Steamboats on the River...

By A. E. Gammon

Through the agency of a song, the Mississippi River has become widely known as "Old Man River". The Magdalena River in Colombia might be regarded as the feminine counterpart of "Old Man River". Certainly it is endowed with all the changeable characteristics unkindly attributed to the female of the species.

The Magdalena River is the main waterway of Colombia. Rising high in the Andes it winds its way to the sea at Barranquilla, over 800 miles away, and along its course it is fed by numerous tributaries. The lower river is navigable for river steamers between Barranquilla at the coast and La Dorada, approximately 560 miles upstream. Rapids are encountered at La Dorada and from there on small river steamers ply.

The navigating seasons are divided into four periods, two dry seasons and two wet seasons. A graph recording indicates that over a ten year period the dry seasons or periods of low water are usually between January 1st and April 10th and between July 10th and September 10th. During these periods the depth of the river falls to a very low level and most up river navigation is at a standstill. The periods of heavy rainfall, which result in high water levels, usually occur between April 10th and July 10th and between September 10th and December 31st. The rise in water levels during the rainy season is remarkable, a rise of several feet in a few hours being a common occurrence. In addition, the river has a tendency frequently to change its channel, thereby providing further difficulties for the navigator. Indeed some parts which enjoy a position adjacent to the river today may

(Above) Glittering white in the brilliant Tropical sunlit, the Magdalena River towboat is always a welcome sight. (Left) The pilot house is built high above the water so that sandbars can be detected.

Pushing its Petroleum-laden barges ahead of it, the Modern Version of the Mississippi Showboat Plies the Shallow Waters of the Magdalena River in Far-off Colombia.
find themselves some distance from the river next year.
In this respect the chance of a refinery location and load-
ing facilities at Barrancas Bermuea was a happy one, as
this particular area has never been isolated by the
changing course of the river.
To help a pilot to follow the channel, which may
change from trip to trip, the pilot house is built very
high. This enables the pilot to read the water and by
the action of the surface be able to trace the channel of
the river. Quite frequently, however, bows become
stranded in sours, breakers or at points where the channel is
too narrow and shallow to permit passage. When such
a situation arises, cables are run ashore and fastened to
a tree or "deadman" which is a log or other heavy object
buried in the ground. The barges are then literally
dragged over the bar by the use of winches pulling on
the tree or "deadman" ashore. Should this procedure fail
there is little else that can be done except wait until a rise
in the river float the bow off. It is not uncommon for
a tow to be stranded for several months. As well as the
foregoing, the pilots always have the danger of striking
sangs, partially submerged logs and other debris
which are always floating downstream.
With these known natural difficulties to face, the
Magdalena fleet of the Tropical Oil Company was in-
augurated in 1921 with the building of the towboats "El
with two fifty-foot barges and six one-hundred-foot
barges. It began operations during 1922. This equip-
ment distributed the pipe and field equipment at various
points along the river for the laying of the Andino
National pipe line from the company's producing terri-
tory to the bulk storage at Barrancas on the coast.
Various marketing stations were built along the river and the
distribution for home consumption of bulk and package
products manufactured from Colombo crude was
 commenced.
As the consumption of products increased, the fleet
of towboats and barges also grew until with the addition of
nine more barges last year and the new S/S "Opoza"
this year there are now nine sternwheel towboats and
fifty barges as well as several launches.
It is interesting to note the progress made in the
design of both sternwheelers and barges. The original
sternwheelers and one-hundred-foot barges mentioned
earlier were shipped to Colombia in knockdown form
and assembled there. The latest type of sternwheeler,
the new "Opoza," and the one-hundred-and-fifty-foot
welded barges were built in the north and towed to
Colombia. The original towboats towed cargoes of ap-
proximately 4,000 barrels. The "Opoza," with four one-
hundred-and-fifty-foot barges, can carry 15,000 barrels
of fuel oil. Some indication as to the growth of this
trade can be formed from the following comparison—
32,266 tons of cargo were transported in 1923 as com-
pared with 282,256 tons in 1936; and indications are
that the 1936 figures will be eclipsed by 1937
movements.
As adequate shipbuilding equipment was not avail-
able in Colombia the ships and barges for this service
were built in England and in the United States and
shipped to the Magdalena. This presented a problem to
the designers, for it was one thing to build a vessel light
enough for the shallow reaches of the river and quite
another to build it strong enough to survive the stresses
of the long ocean voyage. However the program was
Carried out with only one mishap. Barge B-31, while in
tow with barges B-52 and B-53 from New Orleans,
broke in two as it crossed the Caribbean Sea and the tow pro-
ceeded with two instead of the three barges that set out.
Ultimately the derelict half of B-31 went aground at British Honduras. It was refloated and re-
mained on its journey and on arrival at Colombia it and
its other half were successfully reunited with the help of
the worker's skill.
A normal tow on the Magdalena comprises four or
five barges. Strictly speaking the word "tow" is not
applicable to this traffic for the barges are pushed in
front of sternwheelers and not dragged behind them.
The usual arrangement is to set two barges abreast.
When five barges are moved there are two tows of two
abreast and the fifth acts in a sort of grow. The tow-
boats range in length from 190 to 204 feet and each is
propelled by two paddle wheels. The new "Opoza"
had paddle wheel 20 feet in diameter. Each comprises 15
paddles 13 feet long and 34 inches wide. The power to
turn these wheels is generated by two tandem compound
steam engines. The smaller steamers have an initial
horse-power of 450, but the latest type, such as the
"Opoza," develops 900 horse-power. All the steamers use
fuel oil and it is interesting to note that most of the old
wood burning ships on the Magdalena have been con-
verted to oil burners.

THE LOST WELL OF MARACAIBO

To strike a dry hole is nothing new to the oil drillers, but to have him
entire equipment, derrick, machinery and all, suddenly disappear is
what even the most conservative driller would describe as irrevocable.
An account of a disappearing oil well comes from Lake Maracaibo in South
America, where the oil field is under water. This well, about three-quarters
of a mile from shore, suddenly came in at a depth of 1,860 feet while the
drill pipe was being "pulled." The hole was full of mud but the pressure
was so great that the pipe could not be lowered to close the blowout.

1 The pressure of gas and oil under-
mined the piles in the bed of the lake
on which the derrick and machine-
house were erected. The drilling crew
was trapped in a blast and the derrick slowly sub-
merged as the county below grew deeper.

2 As the derrick began to fall, the drill
pipe forced from the hole, caught
under one of the guy wires and remained
in this position for one and one-half hours.
The gas continued to escape in greater
volumes as the internal pressure in

3 The falling derrick carried the drill-
ning machinery with it into the
lake, all the same the same fusing the
drill pipe which was at once blown into
the air. The total length of pipe blown
from the hole was 1,000 feet.

4 When the derrick collapsed the end
of the drill pipe still in the hole was
forced under and straightened out in
the air in a length estimated at 800 feet.
Gas, oil and water continued to rise
skyward.

5 The drill pipe, blown from the hole,
nick back into the water, loading not
more than 20 feet from a launch
containing the drilling crew. Derrick and
drilling machinery were a total loss. Only
the drill pipe was recovered.
The MOTORIST LEARNS
What Happens to
His Gasoline Dollar
Division of Costs Graphically Explained

- At the Motor Show in Toronto early in November, thousands of car owners learned for the first time what actually happens to the dollar they spend for gasoline in Canada.

Accompanied by the flashing of lights and the noisy jangle of falling pennies, the giant Imperial Oil "cash register", shown in the exhibit above, totalled up the consumers' gasoline dollar in a way that was both dramatic and educational. Coming out of the top of the machine were five troughs down which the pennies slid into slots representing the five main divisions of cost. As the pennies dropped into each slot, an illuminated panel, immediately above, told the story of the transaction.

As 18 bright new pennies tumbled into the slot on the extreme left, the illuminated panel immediately above it announced the fact that 18 cents of every dollar paid for gasoline went into the cost of crude oil. Into the slot labelled "Manufacturing and Marketing", 35 pennies slid, the panel above it indicating that 35 cents of the dollar was required for this purpose. When the next light came on, 15 cents rolled down into the slot marked "Freight". Into the "Taxes" slot, 27½ pennies tumbled, and interested spectators saw the long list of taxes, in addition to the road tax, which are levied against gasoline. In marked contrast to the noisy clatter of the coins so far, almost noiselessly 4½ pennies slid into the slot labelled "Profits". Above it, the illuminated panel announced the fact that this profit of 4½ cents on the dollar transaction is equivalent to a profit of only 1½ cents per gallon. Needless to say it was a revelation to most of those present to discover that a refiner operates on such a narrow profit margin.

How the Gasoline Dollar Is Divided

- The entrance to the Imperial Oil exhibit at the Motor Show, in Toronto, and (above) the consumers' gasoline dollar.

Sub-Arctic Pipeline

- Fuel Oil from Imperial's Fort Norman Refinery Moves Through the New 8½-mile Pipeline Circumventing the Rapids on Far-Away Bear River.

- During the spring and early summer months, great activity was evidenced in the neighborhood of Fort Norman, N.W.T., where gangs of men pushed to completion what is believed to be the world's farthest north pipe line.

Running parallel with the river for about 8½ miles, the new pipeline circumvents the Bear River Rapids, thereby completing the smooth flow of much-needed fuel oil from the Imperial wells and skimming plant to the Eldorado A dead-end silver mine some 375 miles to the east on the far side of Great Bear Lake.

Throughout the past six years in the so-called frozen north tremendous developments have taken place in mining. To meet the ever-increasing demand for fuel oil, a programme of expansion was undertaken last spring and summer. In addition to the pipe line project already mentioned, a fleet of tanker barges were constructed at Fort Smith by Northern Navigation Company to facilitate the movement of oil between the refinery and the several other consuming points. Oil, during the summer months, now moves on regular schedule to Eldorado on Great Bear Lake, to Yellowknife on Great Slave Lake and to other rapidly growing mining developments throughout the sub-Arctic.

The accompanying photographs tell an exceedingly interesting story of man's conquest over nature in the far north west.
ELDORADO EXPERIENCES A BUILDING BOOM. The log structures of the early days . . . all of three or four years ago! . . . are disappearing. In the background of left where there were two foot oil tanks last spring, there are now four. The output of this and other sub-Arctic mines depend entirely on the continuance of adequate supplies of Fort Norman fuel oil.

OIL . . . LIFE BLOOD OF THE RADIUM COUNTRY

● Indispensable to the mines of the Canadian sub-Arctic, is the oil furnished by the world's most northern refinery at Fort Norman, N.W.T.

THE OLD BATTERY of 100-gallon storage tanks at the Wells (above) was supplemented last summer by two new 500-gallon tanks, shipped knocked down and assembled "on location". (Right) Two delivery lines run from the dock at the foot of the rapids to the first transfer tank.

NEW FLAGS saluted the Governor-General on his recent visit to the Fort Norman Wells.

THE "GREAT BEAR" unloaded cargo at last home port, Eldorado, on the extreme eastern tip of Great Bear Lake. Viewed from the hill above, the oil drums make a mosaic on the wheat.

AT THE FOOT of the rapids (see map below) the 12,000-gallon transfer tank, shown above, receives the oil brought upstream from the Wells by tanker barges. The pump, above right, forces the oil through the 8½ miles of pipe to a smaller tank at the far end. From this tank the oil flows by gravity into a second barge which transports it to a 70,000-gallon storage tank at Fort Franklin, where it is held for delivery to the lake tanker barges operating between Eldorado and the mouth of the river.

FORT NORMAN WELLS AND REFINERY SUPPLYING FUEL OIL AND GASOLINE TO SUB-ARCTIC MINES

5½ MILE PIPELINE, CARRYING FUEL OIL TO FORT NORMAN.

FORT FRANKLIN, FUEL OIL TRANSFERRED HERE TO LAKE BARGE.

TO GOOD HOPE, MLAVIK, AND ARCTIC OCEAN.

9½ MILE PIPELINE, CARRYING FUEL OIL FROM FORT NORMAN TO FOOT OF RAPIDS.

GREAT BEAR LAKE.

RIVER BARGE CARRYING FUEL OIL FROM HEAD OF RAPIDS TO FORT FRANKLIN STORAGE.

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CANADA'S BUSIEST LITTLE SHIPYARD

- Shipbuilders of the far north-west had their busiest season on history this past summer. Construction and navigation both went on at record pace at Fort Smith, on the Mackenzie River, as Northern Navigation Company put a fleet of new barges into service. Included were specially designed tanker-barges for handling fuel oil south from Imperial Oil's Ft. Norman refinery to aid mining developments at Yellowknife and other fast-growing areas in the Territories.

FORT SMITH, N.W.T., was the busiest little shipyard in Canada last summer as mining and fuel oil made new demands on water transportation. In centre foreground is a section of the hull of the Diesel-powered "Baffin King", shipped overland from Quebec and assembled on river bank.

BUILDERS had to rush construction of the new tanker-barges to keep them into service during the short navigation season. Here the bones of a prefabricated monster is the skeleton of the 300-ton barge, below. It is built entirely with native timber.

OIL FOR SUB-ARCTIC MINES: Taking full advantage of the long summer days, builders rushed to completion the fleet of Mackenzie River tanker-barges. Shipped knocked down from Calgary, the tanks were assembled on the river bank. Photo, above, shows assembled tanks lining the river bank. Below, workmen maneuvering a tank into position to be lowered into the hold.
TALARA Entertains at Polo

- And Receives a Ship's Bell from the Officers of H.M.S. "Exeter" on Which to Sound the Chukkers.

By G. W. SIMPSON.

- People who have lived in, or visited both Montreal, Canada, and Talara, Peru, would find it hard to name anything which the two places have in common. To readers of the "Review" it will doubtless occur that Imperial Oil, Ltd., is actively interested in both. However, a recent event in Talara enabled us to share another and unique distinction with the Canadian city. H.M.S. "Exeter" paid us a visit in August, and among the various sports organized for the entertain- ment of officers and men, polo naturally took its place. The ship was not able to produce its own team; how- ever, four officers took part in the game. Before it began, Commodore Harwood, on behalf of the Royal Naval Polo Association, presented the Talara Polo Club with a warship's bell which had previously marked the watches on one of His Majesty's ships.

Talara, we venture to think, is a very popular port of call for the King's ships, and no doubt the prospect of riding and polo is one of its attractions. On former occasions officers had enthusiastically availed themselves of this. The "York" was able to field a complete team, under the captaincy of Admiral the Hon. Sir Matthew Best, which gave us a very good game, and officers from the "Ajax" took part in our own club games.

These encounters resulted in the very interesting ceremony mentioned above. Commodore Harwood, of H.M.S. "Exeter", addressing the members of the Talara Polo Club and a large number of spectators, among whom were Mr. Courtney Forbes, H.B.M. Minister to Peru; Mr. R. H. Elkins, General Superintendent at Talara; Mr. M. Smith, Acting Manager of Lobitos Oilfields; Mr. A. Nortcutt, Field Manager at Negrillos; and Mr. J. W. Fisher of J.P. Co., Lima, explained that the Royal Naval Polo Association had sent warship's bells to the America and West Indies Squadron for presentation to both the Montevideo Polo Club and the Talara Polo Club as tokens of gratitude for the hospitality these clubs had extended from time to time to their officers.

Mr. C. M. Kindersley, Captain of the Talara Club in thanking Commodore Harwood and the Royal Naval Polo Association, sketched briefly the history of the Royal Naval Polo Association, and secondly the progress of polo in Talara, and said that the pleasure of any entertainment that had been provided by the Polo Club for visiting warships had always been equally enjoyed by the employees of the International Petroleum Company. The bell should prove a great stimulus to polo in Talara, and he hoped that its sound would long continue to mark the chukkers.

After the polo game, the players and a large number of guests attended a party at the home of Mr. and Mrs. Kindersley.

- Presentment of the ship's bell by Commodore Harwood to Mr. C. M. Kindersley.

- Naval Officers and Talara Polo Club Members at the presentation. Reading from left to right: Commodore H. H. Harwood, O.B.E., B.N.; Mr. C. M. Kindersley, H.B.M. Minister; Lt. J. C. Camm, Gunner; J.B.; Captain Rose, B.M.; Captain Ross, B.N.; Brig. Lt. Morley, B.N.; Mrs. C. M. Kindersley, Dr. L. H. Foster, Dr. B. L. Plunkett, Mr. G. A. W. Spong, Lt. Union, H. I. Walker, B.N.; Mr. G. J. Newell, Mr. T. F. Hallidnslow.

A NEW CRUSADE FOR SAFETY

By DALTON J. LITTLE
Secretary, White Cross Safe Driving Movement.

- Company-originated White Cross Safe Driving Movement Becomes Public Safety Drive Under Distinguished Patronage of The Then Lieutenant-Governor of Ontario.

- The White Cross on a blue background, with the words "Safety Pledge" inscribed in red letters on its face, is now recognized in every city and hamlet of Ontario as a symbol of safe driving. By the end of October, only two months from its inception, the White Cross Safe Driving Movement had enrolled well over 100,000* Ontario motorists in a great community effort to help lessen the mounting accident toll of death and serious bodily injuries resulting, in the main, from carelessness or recklessness in the operation of motor vehicles on streets and highways.

This voluntary effort on the part of motorists them- selves to make the highways safer by self discipline and the force of example was given the stamp of life at the Safety Exhibit of Imperial Oil Limited at the Canadian National Exhibition.

* To November 15, total distribution of White Cross Emblems was 146,000.

AUTUMN, 1937

During the entire period of the Exhibition, from August 27 to September 11, 1937, hundreds of thousands of visitors viewed the large illuminated still pictures in colors of recent actual motor car accidents, and motion pictures vividly demonstrating the hazards to be avoided in driving. From the picture gallery, they moved past the wreck of an automobile which had, as the notice stated, caused the death of a young couple but a few weeks previously, and from this shocking evidence of the frailty of somebody's error, the throngs of people passed on to the Safe Driving Clinic.

As many as could be accommodated took the driving tests during the twelve hours that the Exhibit was open each day, and at the conclusion of these tests certificated as White Cross drivers.

In addition, thousands of other motorists who could not be accommodated in the Safe Driving Clinic, or who had not time to take the driving tests, requested White
Cross emblems from the attendants. As a result, more than 29,000 motorists signified their intention of becoming White Cross drivers by taking emblems and pledge booklets.

Realising that no business organization, no matter how large, could, by its own effort enlist the active cooperation of a sufficient number of motorists to make the White Cross become the emblem of safety on the streets and highways, an emblem to be recognized by the public at large as being the symbol of a safety pledge, or undertaking to safe and sane driving, Imperial Oil Limited decided to invite public bodies and representative groups of citizens to launch a safety campaign for this purpose.

Consequently the White Cross Safe Driving Movement, under the distinguished patronage of the Lieutenant-Governor of Ontario, Hon. Herbert A. Bruce, M.D., was launched September 2, 1937, at a meeting attended by the majority of those who now comprise the Advisory Committee of the Movement. This meeting was held in the board room of Imperial Oil Limited.

Begg, Ltd. (Casualty and Automobile Insurance); R. B. Morley, General Manager, Industrial Accident Prevention Associations; G. Harrison Smith, President, Imperial Oil Limited; G. K. Sheils, Vice-President, General Steel Wares Ltd.; V. B. Smith, General Manager, Confederation Life Association; R. A. Stapells, President, Canadian Automobile Association. The secretary of the Movement is the writer of this article.

At present the White Cross Safe Driving Movement is confined to the Province of Ontario. Therefore the appeal is being made to the operators of motor vehicles in this Province on the basis of the problem of traffic control as affected by the mounting toll of serious accidents on the public thoroughfares of this Province. The magnitude of the problem is realized when one considers the actual record of motor vehicle accidents as compiled by the Ontario Department of Highways. The Accident Recording Division of this department reports that if the present rate of highway fatalities is maintained, there will be 850 automobile deaths in Ontario this year, as compared with 546 during the year 1936. The department also estimates that during 1937 between 13,000 and 14,000 persons will have been injured, many of them permanently disabled, mainly as the result of careless and reckless driving. These figures represent a probable increase of 55% in the death toll and approximately 25% in the physical injury toll this year over last. The first six months of 1937 showed an actual increase of 68.6% in fatal accidents.

The automotive industry and the oil industry have co-operated during the years in making possible motor vehicles of over-increasing efficiency. When kept in proper repair, and operated by competent drivers who exercise care and common sense in driving, the motor vehicle of today is as safe a mode of transport as science has yet devised. It is obvious that this same vehicle of transport, when operated by incompetent or careless drivers, becomes a potential engine of death and destruction. The accident statistics fully demonstrate this fact.

In commenting on the economic loss caused in the Province of Ontario by motor car accidents, the Confederation Life Association, co-operating with the White Cross Safe Driving Movement, recently directed a letter (Continued on Page 54).

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IMPATIAL OIL REVIEW

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(Above) The Safety Exhibit of Imperial Oil Limited at the recent Canadian National Exhibition. Toronto, drew the attention of tens of thousands of safety-minded motorists. (Left) Sidewalk Indicators were among the hundreds who took part in the voluntary driving tests.

56 Church Street, Toronto, at the invitation of Mr. G. Harrison Smith.

The personnel of the Toronto Advisory Committee, and of the Ontario Advisory Committee, include: His Worship, Mayer W. D. Robbins, honorary chairman of the Toronto Committee; H. G. Foster, Manager, Ontario Safety League, who is general chairman of both the Toronto and Ontario Committees; Chief Constable D. C. Draper, Toronto Committee; Frank A. Good, chairman Toronto Division, Canadian Manufacturers Association; B. G. Newton, President Kiwanis Club of Toronto (representing the Service Clubs of the City); A. G. Pinard, President of the Advertising and Sales Club of Toronto, who is chairman of the Advertising and Publicity Committee of the Campaign; and the following members of the Ontario Committee: Major-General V. A. S. Williams, Commissioner of Provincial Police; L. D. Bye, Ottawa Car Manufacturing Co. Ltd., Ottawa; Wallace R. Campbell, President, Ford Motor Company of Canada Ltd., Windsor; Colonel F. P. Healey, Managing Secretary, Hamilton Chamber of Commerce; J. C. Normam, McKinnon Industries Ltd., St. Catharines; E. C. Steele, Union Gas Co. of Canada Ltd., Chatham; A. R. Timms, The R. Timms Construction Ltd., Welland; Alex Weddell, Mears, Hill, Weddell & Hills, Peterborough; and the following who are members of both the Toronto and Ontario Advisory Committees: Major of proper provincially organized which they represent: A. E. Arscott, General Manager, Canadian Bank of Commerce; J. P. Bickell, Registrar of Motor Vehicles, Province of Ontario; H. L. Kearns, Show and...
Year after year the driller probes deeper and deeper into the earth in search for oil. In the 77 years since Drake brought his famous well things undreamed of in his philosophy have occurred, and drilling has become an exact science in which the skill and knowledge of many kinds of technicians are drawn upon.

From the crude wooden derrick and hemp rope of the early days the elaborate and costly equipment of the present has evolved. While it entails heavier initial expenditures it results in lower cost per foot. With it the driller will start a bit on a downward journey of as much as, or even more than two miles.

Machinery and equipment capable of reaching such depths and similar to that illustrated here may cost, without drill pipe, $100,000. The drill pipe alone may represent an additional outlay of approximately $20,000.

With such heavy initial expenditures, "wildcat" drilling is a speculative enterprise which demands not only considerable capital but a high degree of courage, for the "wildcatter" naturally has a much larger percentage of failures than the driller in proven fields. Up to the end of October last approximately 25,000 new wells had been drilled in North America and of these approximately 5,000 were failures.

The illustrations on these pages are from Oklahoma where, because of more favorable weather conditions, housing equipment is not so necessary as in Canada and consequently the pictures reveal more detail. The equipment shown here is broadly similar to that employed by large operators in the Turner Valley.

DEEPER, DEEPER and DEARER!

Page Sixteen

IMPERIAL OIL REVIEW
Oil for Ocean Highways

- Oil Firing Has inaugurated a new era in ocean traffic. Without oil fuel today's superliners would be impractical.

- Few writers on the history of the petroleum industry have failed to note that one of the earliest recorded uses of petroleum was by Noah, who used "pitch" to caulk the seams of the Ark. This familiar fact is cited again here simply to show that petroleum and those who go down to the sea in ships are friends of long standing. For many centuries petroleum played its part in keeping vessels afloat; in recent times and particularly during the past twenty years it has enlarged its role to keep the modern ship afloat financially as well as physcially. For it seems that without oil the present-day liner would be a financial as well as a physical impossibility.

In Paris, 155 years ago, Robert Fulton announced the successful harnessing of steam power to a ship. The oil industry did not then exist. Wood and coal were the available fuels for generating steam and in the course of time coal displaced wood for substantially the same utilitarian reasons that oil subsequently displaced coal in a large measure. For a century, however, coal was supreme on the seas.

The possibilities of oil as a marine fuel did not become apparent until shortly before the World War. Thereafter there was a large scale conversion of steamers from coal to oil fuel and in some respects this transition was as important and as revolutionary in its results as the earlier transition from sail to steam. Certainly it opened up undreamed- of avenues to the construction of larger, luxurious, more effective and more profitable transports because at once it drastically curtailed the weight of fuel a ship must carry, substantially reduced the proportion of fuel storage and engine space to the total volume of the vessel, considerably accelerated speed and radically shortened the time needed for refueling. Other obvious advantages, such as escape from the har- moiy and mess of coaling operations need not be dealt with. It is not an exaggeration to say that without oil fuel ships like the Rex, Europa, Bremen, Normandie and Queen Mary would not have been laid down on the naval architect's drafting board. They would have been regarded as the fantastic creations of a disordered mind.

Tradition is rooted deep in the mind of the seafarer and coal was not discarded as a fuel for so many vessels without a struggle. The shipbuilder approached the innovation with uncertainty and with substantial reservations. For some years ships were built with duplicate stoking equipment so that they could burn either coal or oil.

- Fancy little tugs ease the oil-burning "Normandie" into her berth at New York.
  Photo courtesy French Line.

- The Queen of Chattareis at her berth in New York harbor, taking on the 5,000 tons of fuel oil necessary for a two-way trans-Atlantic crossing. The oilstains on her superstructure and a long oil stream from her exhaust capstans show that she is an oil burner.

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oil, and those vessels which were converted to oil burners retained their coal-stoking equipment as a precautionary measure. This of course reflected an uncertainty as to how widely and how consistently supplies of oil fuel would be made available. Incidentally it sacrificed one of the advantages offered by oil, which is its smaller requirement for fuel storage, boiler and stoking space. But steadily the superiority and dependability of oil as a means of improving the facilities for ocean transport and for speeding international commerce asserted itself, and concurrently with the expanding use of oil to generate steam at sea came the development of the Diesel engine, an internal combustion power plant which uses oil as its fuel.

At the beginning of the World War approximately 89% of the mercantile marine burned coal; less than 3% burned oil to generate steam and less than one vessel in 200 was a motor ship. Recent figures indicate that about 48% of the world's tonnage now burns coal, 30% burns oil and more than 20% is Diesel driven.

This was a tremendous development for so short a period and it made exacting demands on the petroleum industry which was thus taxed to the utmost to develop supplies and distribution of fuel oil in consonance with the rapidly expanding need. It required the establishment of adequate fueling stations in all the principal ports of the world; it called for added transport facilities between the oil fields, the refineries and the far-flung markets. This responsibility had to be met principally by a few of the major oil companies. It was met and as a result today a vessel may sail without warning at almost any except the remotest ports and be assured that its fuel oil requirements will immediately be satisfied.

So extensively has fuel oil captured the patronage and revolutionized the practice of shipping that almost all important vessels recently built, now building, or projected, are oil burners. As already noted, the superliners like the "Queen Mary" and "Normandie" could not have been without oil fuel. To secure equal speed from a ship of the "Queen Mary's" tonnage, if fired by coal, would require so much more space for boilers and bunkers that the passenger carrying capacity would be reduced below the level required for a sufficient revenue.

At the same time the use of fuel oil has increased...
the earning capacity of vessels by materially lowering fuel bills, and the higher concentration of heat value in oil means that a boat uses less fuel per crossing when burning oil than when burning coal. A vessel of the "Duchess" type consumes approximately 900 tons of oil in her voyage from Liverpool to Montreal. If coal were substituted the fuel tonnage would be approximately 1,400 tons, or more than half as much again. The Canadian Pacific flagship, "Empress of Britain," burns approximately 4,200 tons of fuel on a trip from Southampton to Quebec and return. If she used solid fuel her needs would increase to about 7,000 tons. To load such quantities of coal into a ship would be a large-scale operation requiring considerable time and entailing extensive disorganization of the ship's ordinary routine; whereas a ship using as much as 800 tons of oil fuel per day can be refueled for an Atlantic crossing in less than 36 hours and without hindering in any way other operations which must go on while she is in port.

Besides being more economical and easier to handle, liquid fuel is more economically carried, not only because of its lighter weight and smaller volume but because the oil fuel bunkers occupy largely, though not entirely, the space formerly wasted for ballast. In the coal burning vessels it was not possible to use ballast space for fuel storage and so there was a double loss, that of the ballast space itself and that of the other space occupied by the coal, which in the oil burning vessel is available for revenue producing purposes. Oil also does away with the handling of ashes, tons and tons of which have to be dumped each day from the coal burner. Naturally the elimination of coal and ash handling has substantially reduced stoke-hole crews and operating costs.

The boiler room of the modern oil burning ship only remotely resembles the stoke-hole of its predecessor. The boilers are heavily insulated with asbestos and although they quench flame so hot that it would fuse stone, their exteriors are cool to the touch. The fire rooms are clean and spotless and whereas before the war it took the back-breaking labor of 100 stokers to make steam for a 35,000 horse-power vessel, the pressure to drive today's 100,000 horse-power superliner is generated by the simple expedient of turning a few valves.

Great strides have been made in the design and building of Diesel-powered freighters. With compact, powerful engines capable of giving high speeds with low costs for fuel, the freighting units of the mercantile marine have become highly efficient and effective equipment. The use of oil has increased the steaming radius and the carrying capacity of vessels so that they have been able to develop trade routes which in earlier days were of no economic interest. Oil has kept vessels on the seas which otherwise would have been laid up and it has fostered the construction of new vessels. It has been a means of promoting world-wide trade by making shipping more attractive from the operator's point of view.

It is not to be assumed, however, that the operations of oil burning vessels are confined to the high seas. Highly specialized oil burners serve on many of the inland waterways. For example, up in the Northwest Territories where wood burning stern-wheelers have travelled the shallow reaches of the Mackenzie River for so many years, the advantages of Diesel-driven equipment are proving themselves. Recently two Diesel-powered tugs were put into operation to serve the mining operations in and about Great Bear lake. The season of navigation is very brief, from eight to twelve weeks being the average, and consequently refuelling time is a very important factor. With the old wood burners approximately one-third of the operating time was needed for loading cordwood. Due to the proximity of the Port Norman oil refinery, there is now an adequate supply of fuel oil in this remote country and the new vessels require but a few minutes for fuelling operations.

How Waste Space Has Been Banished in Modern Liners

In the main illustration above, the artist shows the whole interior arrangements of the magnificent superliner "Queen Mary." The lower diagram shows the relatively small amount of space occupied by the power-producing and driving machinery. Before the advent of oil-burning, much valuable space, now revenue-producing, was required by the boiler room and the larger, less efficient coal-fired boilers. In the diagram, the fuel oil is shown coming from pump station (1), space formerly largely wasted for ballast. Boiler and engine rooms are shown in (2) and (3) respectively, while (4) are the propeller shaft tunnels. Electrical generating machinery is located at (5).
because aeroplanes are costly contrivances, beyond the reach of even the most assiduous savings of spending allowances, and it is necessary because rigid regulations governing flying must be enforced by the Department of Civil Aviation. Admittedly some experimenters might combine their resources and ingenuity to build machines that would fly and carry one or more of them, and possibly from such individual experiments further progress would be effected in the science of aeronautics; but human life, particularly young life, is even more precious than scientific development and the life-safeguarding regulations governing flying in Canada make it impossible for youngsters to fly in their own machines. However, young men are, in many respects and particularly in respect to its ambition, and so young men and boys are doing the best thing. They build flying machines on a miniature scale in conformity with their monetary resources. They launch these into the air and travel, in spirit, in them. In this way they learn many of the principles of aeroplane design and operation, acquiring a knowledge which undoubtedly will stand some of them in good stead in later life.

The earliest flying models were propelled by elastic motors which have very definite limitations, not the least of which is that they are unlike "the real thing." Today's young experimenter was not to be satisfied with that. Consequently there arose a demand for miniature gasoline engines and some enterprisers began to make and sell these. This inaugurated a new era in the building and flying of model aeroplanes.

Perhaps by usage the term "model" has acquired certain derogatory implications and accordingly should not be employed in describing these gasoline-powered miniature flying machines. They might better be called small-scale aeroplanes for they are aeroplanes in every sense of the word, despite the fact that they do not carry pilot or passengers. They "take off," fly to great heights and land themselves. Their wing spans range from three feet to fourteen feet. Their cost, particularly for a boy or a group of boys, may be quite considerable. Their construction demands very much more than a rudimentary knowledge of design. It makes exacting demands on patience, enterprise and ingenuity.

Various grades of selected woods are employed in the construction of the framework. Due to the fact that the model has to land itself and so in many cases may choose unfavorable terrain, the strongest possible construction is desirable. The governing limitation in this respect is of course weight, and so light woods such as Balsam, a South American product, or Ficko Spruce or Bass are favored. The "skin" is of silk or of a material known as Bamboo Tissue.

The miniature motors are of single-cylinder design and of the two-cycle type, that is to say they fire for every revolution of the propeller. In most cases the spark is supplied by two flash-light cells. Complete with batteries, cells, tanks and control equipment these motors, which are air cooled, do not weigh more than one-half pound each.

One of the problems which confront the owner of a gasoline-engined miniature plane is that of recovering his ship after it has been launched in flight. The controls are set so that the ship will climb in ever widening circles. The fueling is done with an eye dropper, the usual fuel load being about one-eights of an ounce for each pound of the plane's weight. Fueling completed, the motor is cranked and turns over to the accompanying din of a brisk staccato noise. Launched, the machine climbs steadily and after about 40 seconds of flight the automatic control cuts off the motor and the plane begins a long spiral glide to earth, sometimes from altitudes of more than 2,000 feet. But the young flyer may not be able to take into account wind velocities and directions in the upper air and so the plane may not follow the contemplated course and may land several miles from the point at which it was launched. Pursuit in motor cars has to be resorted to in many cases and the flyer never knows whether in landing his plane will encounter some obstruction and crash. However, the hazards are part of the game and the young owners are splendid sportmen. They thrill at a successful flight but do not outwardly grieve when their craft are wrecked, even beyond repair—which fortunately does not often happen.

They remember Kipling's advice, and perhaps that true impetuousness, success and failure, just about the same.

In Toronto some youths, ranging in age from their early teens to 20 years, have formed what they call the Toronto Gas Model Club and are enthusiastically building powered miniature aeroplanes of all types. Their interest is not confined to land planes; sea planes are also constructed and now that the winter is approaching, skis are being built to replace wheels on the land machines. Even autogyros are being made.
NICKEL

- OIL PLAYS ITS PART IN PRODUCING CANADA'S WONDER METAL

- Nickel, perhaps the most distinctively Canadian name in the world of metals has now become as well, the metal of one thousand and one names. This is the age of alloys. Industry demanded better and finer materials than any previously known. Research provided them by inventing innumerable new metallurgical combinations. Canadian nickel as a result proved of service in literally thousands of new applications and this development is responsible for the fact that the Dominion’s production has risen above all previous records.

The use of nickel-bearing alloys by the petroleum industry both in the oil fields and at the refineries has been an important factor in the recent growth of the basic Canadian industry centered in the Sudbury district. Within the last few years, automotive requirements in nickel have increased until gasoline-powered transportation currently absorbs about 20 per cent of nickel's output. It is extensively used also in Diesel engines.

Canada's dominance in nickel is due not only to this country's ore reserves but also to the unequalled efficiency with which the metal is produced on a scale never previously achieved. The operations of the International Nickel Co. of Canada Ltd., with its Flood, Creighton, Garson and Lyvack mines, its vast nickel-copper smelter at Copper Cliff and refinery at Port Colborne, thus constitute the largest industrial lubricating job in Canada as well as one of the most complex. The part which Imperial Oil plays in this process is graphically revealed by every photographic record of nickel in production and the Imperial tank car is as inevitably a part of the smelter landscape as the towering stack which rates as the British Empire's biggest chimney.

THIS IS PURE NICKEL, something which the public rarely if ever sees, in one of its common industrial forms ready for use as an alloying material. The British alloying squares are shipped to industrial centers throughout the world. Best everyday example of practically pure nickel is the Canadian five-cent piece, generally referred to by that name.

MELTED in the steady blazing white heat of this quintuplet pipeline-fed oil furnace, the nickel oxide stirs because 99.5% pure nickel. Pourred into 425-pound molds, the metal then goes to the "whispering gallery" shown on page 28.

FLOODLIGHTED for the benefit of passing planes, the new 32-foot con-crete stack stands, a great industrial pile, above International Nickel's Port Colborne refinery on Lake Erie. Page Twenty-six

SMELTED at Copper Cliff and shipped in box cars to Port Colborne for refining, the "mattes", as the smelted but unrefined nickel is known, are first crushed, then heated to a cherry red in oil-fired smelting machines.

LIKE A MAMMOTH SNAKE on stilts, the airline twists through the smelter scenario. From the Interna- tional Nickel smelter at Copper Cliff, Ont., comes 50% of the world's raw nickel.

SUNLIGHT, streaming through the smelter base, and intermittent brilliant flame as molten matte pours from one of the converters, creates a wonderful light-and-shadow effect. Captured as easily as if it were a tea-cup, the 50½-ton ladle in the foreground floats through the air carrying 16 tons of molten metal.

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THESE MINERAL-COATED BUBBLES mark the first rough separation of the valuable nickel as it comes from the Creighton and Ford Mines near Sudbury. Next, chemicals and electricity are used to separate the copper and other by-products from the pure nickel.

ONE-LIADEN SKIPS at Ford Mine travel 2,600 feet a minute, make 15½ trips an hour, cover 160 pay-load miles in an 18-hour day. Left, a close-up of one of the mammoth hoists. Larger still is the hoist at Creighton Mine, nearly said to be the largest in the Dominion.

LIKE A 10-TON LAYER CAKE, sulphides of nickel and copper separate after heat treatment in the Oxford furnace of the Copper Cliff smelter, the copper going to the top, the nickel to the bottom. Although better known for its nickel, International Nickel produces more copper than nickel, the copper and even precious platinum metals being considered by-products of the nickel.

THE MASSIVE 80-FOOT STACK of the Copper Cliff smelter shares with the new Port Colborne refinery stack the honour of being the Empire's tallest chimney.

THE WHISPERING GALLERY. Like some curious metallurgical version of a greenhouse, these huge cell-rooms produce crop after crop of pure electrolytic nickel or pure electrolytic copper. Silently, except for the faint whisper from the rows and rows of electrolytic tanks, the electric current converts 96% pure nickel received from the refinery, into nickel 99.96% pure.

PURE ELECTROLYTIC NICKEL. Alone, or in combination with other metals, nickel plays an important part in everyday life by eliminating rust and corrosion, adding strength without weight, bringing new beauty to the aid of the metal worker.

BEST KNOWN of nickel's myriad alloy forms is the natural Canadian alloy "Monel", consisting of two-thirds nickel and one-third copper, strangely enough in the same proportions as taken from the ground.

FUEL OIL IN LARGE QUANTITIES is required for nickel refining, as indicated by the size of the storage tanks at the Port Colborne refinery of International Nickel Co. of Canada Limited. Combined capacity of the tanks is about four million gallons.
FRESH AS A DAISY!

The Lusciousness of Fresh Picked Fruits and Vegetables is Now Preserved by an Invisible Wax Coating.

By AL. LEROY

- Giving vegetables and fruit longer storage life, and incidentally greater sales appeal, is one of the latest uses assigned to that wonder product—petroleum. By slipping a wax coat on certain types of vegetables and fruits, garden freshness may now be retained during shipment and while exposed for sale on the stoker’s shelves weeks or months after leaving the farm.

How to retain the moisture in fruit and vegetables from the time they are harvested until sold to the consumer is a problem which has long confronted agricultural scientists. A bumper crop may be picked by the grower, but unless the product is shipped in its original delicious state, much of the value of the food is lost. For years the produce industry has relied largely on refrigeration to retard this natural loss of moisture, but this has definite limitations. Among other things it materially increases the cost of storage.

Many shippers and growers are now adapting a process known as Wax Jacketing. This was developed by the Technical and Research Division of Imperial Oil Limited, and although still in its initial stages, it has already proved to have distinct advantages over pre-shipping methods.

- Fruit and vegetables, which have been found suitable, are given a quick dip in melted wax which seals the pores against the entrance of air and at the same time prevents the escape of moisture. Before the dipping, the roots are trimmed and the edible part is allowed to stand about 12 hours to evaporate surface moisture. This is necessary because wax will not adhere unless the surface is perfectly dry. After being waxed, the vegetables are then ready for shipment to world markets where they may be stored, sometimes for months, without fear of shrinking. This process is similar to that of dipping eggs in oil prior to storage. Oil dipping has been so improved in recent years that the quality of fresh eggs is now maintained over long periods. Sealing the pores of the shell against the entrance of air retards the growth of bacteria and mold, and at the same time prevents evaporation of the edible contents.

Many oranges and lemons are today wax dipped and shipped to the retail market. The Canadian-grown Rutabagas, wax-treated and exported for United States consumption, is in far greater demand than the unwaxed (Continued on Page 40).

THE LAUNCHING OF THE “BEECEELITE”

- Latest Addition to the Imperial Oil Tanker Fleet to Operate Out of Vancouver.

- Another addition was made to the Imperial Oil Shipping Company’s fleet on November 20th last at Sorel when the tanker “Beeceelite” was successfully launched at the Munsen Shipyards. The “Beeceelite” is the largest ocean-going vessel of all-welded design yet built at a Canadian yard. She is of 400 tons deadweight and is 127 feet in length. She was designed by the Imperial Oil Engineering Department and is powered by a 570 horsepower Diesel engine. She will be used in coastal service in British Columbia.

Mrs. Alba Galbraith Rahbves, wife of H. J. Rahbves, Vice-President of the Imperial Oil Shipping Company Limited was the sponsor and broke the traditional bottle of champagne across the stem of the ship. For some undetermined reason the “Beeceelite” seemed rather reluctant to make the acquaintance of the element in which she is to spend the rest of her life and when the wedges were knocked loose she did not start down the ways as had been expected. A river tug and three tugs were then employed to persuade her and finally she set forth amid the cheers of a large crowd who had gathered on both sides of the Richelieu River to watch the event. Bedecked from stem to stern with pennants, and flying the Union Jack and red ensign she was a pretty sight as she rode gracefully out on the water.

Following the launching there was a reception for the many guests and Mr. Rahbves expressed his satisfaction with the new ship and congratulated the builders on their work. Mrs. Rahbves, the sponsor, was presented by Joseph Simard, President of Maritime Industries Limited, who built the ship, with a silver tray commemorating the launching.

The “Beeceelite” will be out of the St. Lawrence River before the freeze-up and is expected to complete her journey via the Panama Canal to Vancouver early in the new year. She will make the long trip under the command of Captain J. C. White, one of the Imperial Oil masters.
WHEN HE SHOOTS
... AND SCORES!

- Hockey Fans Thrill to Vivid Play Broadcast over Imperial Oil Network.

By JOHN W. DOHERTY
Advertising Department, Imperial Oil Limited.

- The walking radio station which interview fans during intermissions is something new this year.

- For twenty successive Saturday nights again this winter the magic of radio will make it possible for hockey fans throughout Canada, Newfoundland and the Northern States figuratively to occupy seats at the home games of the Toronto Maple Leafs, with an expert at their side to keep them informed of the fine points of the game, the names of the players, the reason for face-offs and penalties—and all the other highlights that go to make up an exciting hockey contest. The expert's name is Foster Hewitt, and he needs no introduction to the fans in every province who have never met him personally but know his voice so well.

The Imperial Oil Hockey Broadcast this year literally blankets Canada. Last year the franchise to broadcast the games at the Forum, Montreal, for the benefit of Quebec fans was out for sale, except during the playoffs, and as a result no Quebec stations could be included in the regular hockey broadcast network. This season, the Forum franchise being available, Imperial Oil is employing a separate Quebec network to carry a description of the Maroons' and Canadiens' home games to Quebec listeners in both English and French. The English broadcast from Montreal is being handled by Charlie Harwood, whose announcing of the playoffs last winter won him a host of friends across the Dominion. The French broadcast features Roland Beaudy, also well-known for his crisp commentary on previous occasions. Thus, there are really three separate and distinct Imperial Oil Hockey Broadcasts every Saturday night. The description of the game at Maple Leaf Gardens is carried over a national network from coast to coast, exclusive of the province of Quebec; the English broadcast of the game at the Forum from Montréal; and the French broadcast of the same game over a Quebec provincial network. It's a lovely set-up to keep tabs on and make sure that there are no loose ends flapping around at the zero hour on Saturday night — lovely for grey hairs, the radio production director will assure you.

In other respects also, the 1937-38 version of the Imperial Oil Hockey Broadcast is providing greater coverage than its predecessor. Nearly two score stations are included in the network—a considerable increase over the number last year—and among these are the powerful new 50,000 watt outlets of the CBC which have been, or will shortly be, completed in time to carry the broadcast. The Imperial Oil network is the largest and most powerful ever used to carry a radio program to Canadian listeners.

Intermissions on the Imperial Oil Hockey Broadcast this year promise to be more than usually interesting through the introduction of a novel method of interviewing fans and prominent visitors wherever they may happen to be in the vast hockey arenas. Something entirely new in sports broadcasting, these interviews are made possible by a portable short-wave station that would tickle the fancy of any radio amateur. This is what happens when it is time for the "Vox Pop" part of the intermission programme: to go on the air.

Up to this time the broadcast has been emanating from the gondola high up in the air on the west side of the Gardens. Down below, somewhere among the crowd of ten or twelve thousand people strolls a man who is quite literally a walking short-wave station. Around his waist he wears a belt of a style which you would not find in any modern Men's Shop. Attached to the back of the belt is a mysterious little box that is perhaps a little bigger than a lunch box. It contains the batteries that supply power for the short-wave set. The sending apparatus itself is concealed in another mysterious little box in the front of the belt—about the size of a cigar box—one that would hold twenty-five Perfectos. The antenna is a piece of copper about the length of a golf club, running from the box to just above the head.

And of course our wandering short-wave station carries a microphone in its hand. Hanging down beneath the gondola are two signal lights which can be seen in any part of the Gardens. When it is time for the interviews to begin, the program director in the gondola flashes a warning light that will be seen by the one man in all the huge throng for whom it is intended. The signal lights are necessary because, although the short-wave station can send a broadcast, it cannot just yet hear one. This, however, will probably be possible shortly.

The warning light on, our wandering short-wave station flashes back a signal on the other light that he is ready. Whereupon the first signal light winks "Go ahead" and the short-wave broadcast begins.

"Station VEB8Q calling the gondola — Station VEB8Q calling the gondola—If you're getting us, flash the green three times."

"Thanks, Percy . . . This is Experimental Station VEB8Q broadcasting on a frequency of 54700 Kc/s cycles from Maple Leaf Gardens in Toronto—and now let's get down to serious business." The first interview begins.

The adjective "experimental" which precedes the call letters of short-wave station VEB8Q has already been justified. For instance, "dead spots" have been discovered in the Gardens where transmission just is not feasible as a result of some peculiar conjunction of local influences. One of these dead spots is appropriately or non-appropriately enough the penalty box.

Last year famous sporting personalities from all parts of Canada and the United States were brought to the microphone during the intermissions of the Imperial Oil Hockey Broadcasts and this feature proved popular because of its news value and local interest. This year's "Vox Pop" interludes should have the same wide appeal.

- One hundred and fifty radio engineers are employed each Saturday night to bring the Imperial Oil Hockey Broadcasts to "hams" in Canada and the United States.

- National hookup games from Toronto are announced by Foster Hewitt at right; Roland Beaudy (upper circle) and Charlie Harwood, (below) broadcast in French and English, respectively, from Montreal.

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CRUSADE FOR SAFETY

To its employees and field force in Ontario in which the following assertion was made: "When loss of working time, loss of income due to the death of a wage earner, medical bills and property damage are considered, it is estimated that the economic loss totals $50,000 for each life taken—including the loss due to accidents and property damage. On this basis, Ontario's economic loss will be $12,500,000 this year."

The letter just quoted also stresses the fact that automobile fatalities have long adversely affected the rate of mortality among policy holders and that they are continuing to do so at a rapidly increasing rate. "In the first seven months of 1936, one death out of 12 was due to a car crash. In the same period of this year the ratio had sunk to one death out of every 46 due to an automobile accident.

It is only too patent, in the face of the damaging evidence of the figures quoted, that the accident hazard on the public thoroughfares, not only of the city but also of the other Provinces of Canada, and elsewhere where similar accident experiences are recorded, that a determined effort to enlist the drivers of motor vehicles in a crusade of vigilance, against carelessness and thoughtlessness is urgently required. It is for this very purpose that the White Cross Safe Driving Movement has been inaugurated.

The only conditions, cost and obligation of membership are an undertaking to observe the simple safe driving rules contained in the Safety Pledge, published in booklet form and delivered to each motorist who accepts the White Cross emblem for affixing to his car. These rules are as follows:

To be careful all the time when driving a car; To keep drinking and driving apart; To obey the law regulating the use of motor cars; To drive at reasonable and safe speeds at all times; To give undivided attention to his driving; To talk if he wants to, away from the White Cross drivers. To "window shopping"; To keep brakes, lights, horns, steering and tires in safe operating condition; To watch the car ahead and not follow too closely; To keep in his own traffic lane except when passing and to pass only when there is a clear, level, straight stretch of road ahead and never on hills or curves; To think of the car behind and signal his intentions before stopping, slowing, or turning, or entering traffic lanes from a parked position; remembering that the driver behind cannot see what the car ahead will do; To slow down at corners, at street intersections, and schools and when passing parked cars; To come to a full stop and to make sure that the road is clear before entering a through highway; To observe road signs and signals; To be particularly watchful when passing bicyclists or pedestrians; To expect the unexpected at all times and especially when children are on or near the road; To be courteous and considerate of others on the road; To drive as he would have others drive and then by example to encourage others to drive as he drives.

The object of the emblem is two-fold: First, that the driver may have with him at all times a reminder of his decision and of his individual responsibility to be governed by the safety rules to which he has subscribed; secondly, that by displaying the White Cross emblem, he may remind other motorists of their responsibility and encourage them to join the Movement.

There are over 600,000 motor vehicles registered in Ontario. Every driver enrolled in this public movement should help to lessen the menace on the highways and if, as the members of the Committee hope, hundreds of thousands of motorists can be enrolled in this informal organization to promote safe driving, it is certain that considerable benefit will accrue. As stated in appeals to the public for co-operation: "Obviously, if only one life were saved, the effort would be well worth while.

The ready response received from representatives of the Government, from the Ontario Safety League, the Ontario Motor League, other public bodies, the Service Clubs and many business organizations and private citizens, has demonstrated the sympathy and approval of the public in this endeavor to make a constructive contribution to public safety. While it is not possible to enumerate in this article all of the agencies which have contributed to the success of this Movement, mention should be made of the fact that many large organizations have voluntarily circulated all of their employees, and in the case of several casualty and automobile insurance companies, have succeeded in enrolling many of their clients, owners of large fleets of trucks, etc. A number of the life insurance companies, the five chartered banks having head offices in Toronto, automobile manufacturing companies, a grocery chain store organisation with three hundred units in the province and many large industrial concerns are among the representative groups in the financial, commercial and industrial spheres of Canadian business which have actively participated in the enrollment of thousands of White Cross drivers.

The credit for having initiated this great community effort belongs to Imperial Oil Limited. However, this Safety Campaign is now definitely public in character and the only connection which Imperial Oil has retained with the Movement is representation on the Advisory Committee through the President of the Company, a generous offer to supply the necessary White Cross emblems and pledge books, and secretarial services. In other words, Imperial Oil Limited has made the White Cross Safe Driving Movement not only a possibility at this time, but also, through the facilities which the Company has provided, the success of the entire public effort now-entitled on its behalf has been assured. It is indeed a privilege and an opportunity to be associated with such a Movement under these auspices and one which the writer fully appreciates.

(Continued from Page 15)

TO SURVEY TERRITORY IN ECUADOR

- Work to be Undertaken on 500,000-Acre Tract on West Coast of South America.

- Negotiations between the government of Ecuador and the International Petroleum Company Limited were recently completed and as a result the Company has acquired a concession for exploration and, should exploration warrant, development of a large tract of land on the Ecuadorian coast. The territory involved is of 500,000 hectares or approximately 500,000 acres. It is located northwest of Guayaquil and south of the Port of Manaos as shown on the accompanying map. It extends inland from Cape San Lorenzo to beyond the towns of Monte Cristo and Japi Japa. These are the centres of the banana plant industry in Ecuador and are credited with being the places at which the best grade of banana is made.

The only oil fields so far discovered in Ecuador are on the Santa Elena peninsula, a desert area west of Guayaquil. These fields are indicated by the shaded section on the map. The production there is largely controlled by an English company and approximates 6,000 barrels daily. In the early twenties the International Petroleum Company drilled several wells on and near the Santa Elena peninsula and also drilled two wells north of the concession recently acquired. One of the wells drilled in the Santa Elena peninsula produces a small amount of oil but the Company's (Continued on Page 40)

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PETROLEUM
AT THE EXHIBITION

- Petroleum products play an important part in practically every phase of activity at the world's greatest annual exhibition, The Canadian National, in Toronto. From the humble peanut stand with its gasoline stove to the droning aeroplane overhead, all require oil products. Everywhere petroleum "keeps the wheels turning". In the great livestock buildings exhibitors use oil sprays to keep the flies away and to maintain their prize cattle in that peaceful, contented condition which is necessary to ensure championship form. On the midway oil fliers cast their flickering, intriguing light on the painted faces of performers. Down at the lakeshore swimmers coat themselves with grease for insulation from the cold water. Before the grandstand daredevils thrill the crowds with the speed of their cars and motorcycles. From near and far hundreds of thousands of people come by car, train, bus and truck, none of which could move without petroleum. Then, when the Exhibition ends, hundreds of trucks move the paraphernalia away for display at other points.


LIVING UP TO ITS NAME. Imperial Arctic Cup Grease is much in demand in the frozen North, not only because it is good grease, but because the cans are useful. This ineptive young Eskimo is happily occupied by the antics of small fish in the can. Photograph courtesy Hudson's Bay Company.

WHEREVER PLANES FLY, the Imperial Oil drum goes, and everybody has complete confidence in the quality of that important product—Imperial gasoline, says Mr. Norm Byrne, who took the above photograph somewhere in the north country.

DANCING ON OIL. While thousands cheered "Careless of Hills" at the recent Winnipeg Exhibition, few realized that the dancers in the big rink were literally dancing on Imperial Oil drums. The Winnipeg Branch having won an even in the series of the opener with 400 drums to form the foundation of the dance platform.

PLAYING in the Commercial League under Imperial colors, the Employees' Softball Team of the Fort William Station were successful in getting into the play-offs. Standing, left to right: Chan Sadus, (Star hockey player with the Boston Bruins), I. Bates, (Moly Dept.), G. Ducek, W. Snylyka, F. Bell, T. Culpoys (Moly Dept.), J. McCua, Front row, left to right: W. Allen (Manager), F. Barrows, P. Crane, "Tubby" Coombs, I. Sonda (Mascot).

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STEAMBOATS ON THE RIVER

barges into a tanker off Barranquilla and to move the fuel oil through the open sea to Cartagena. It has not been considered advisable because of the necessary light weight of the barges to move them out to sea when loaded. Gasoline and Diesel oil are also trans-shipped at Barranquilla for delivery to Buenaventura on the west coast of Colombia. Until this movement started it was necessary to import all the gasoline sold in the Buenaventura territory.

The recent period of low water on the Magdalena River illustrates some of the difficulties which confront the operations of the Tropical Oil Company's fleet. So severe was the drop in the river level that all down-river navigation was brought to a stop at Puerto Wilches, a few miles below Barranca Bermeja. The ships struggled to get through but only damaged themselves without effecting their release. Stocks of fuel oil at Cartagena dwindled while, on the other hand, stocks accumulated at the refineries. Just before the vessels and towns were released the fuel oil tanks at Barranca Bermeja were filled to capacity, threatening a shut-down of the plant. There were no railroad facilities for movement of products and when finally the river level had risen sufficiently to permit movement by the vessels a number of the fuel oil barges and one tugboat were out of commission. However, by hard work the situation was relieved. Repair gangs promptly took care of the damage done to the vessels and barges in their struggles to get down the river and in the present season of heavy rains and higher waters it will be possible to move enough products to meet requirements for the long dry season.

It is a question whether the obstacles of the Magdalena River could be contended with so successfully were it not for the unusual navigational skill of the Colombian. In 1916 Colombia celebrated 100 years of steamship operation on this river. That long experience reveals itself in the pilots, the officers and the crews of the Tropical Oil vessels, all of whom are native Colombians. They have an uncanny knowledge and understanding of the Magdalena and its ways, as well as an inherent flair for steamboating on the river.

One of the most important operations in connection with transport on the Magdalena is the work of the maintenance and repair divisions. To meet the need for quick and efficient work a floating drydock was built and towed to Barranca Bermeja in 1928 and since that time all repairs to hulls and machinery have been carried out by the company's own mechanics. Much satisfaction has been derived from the way in which the native workers have adapted themselves to and become quite expert in this work.

FRESH AS A DAISY!

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product because of its more delicious flavor. Successful application of wax jacking to citrus fruit may make it possible to treat tropical fruits in a similar way. Thus growers may be enabled to ship their products greater distances than has been possible to date, resulting in an ever-widening market accompanied by increased profits. Such an advantage cannot be ignored, and today many growers and shippers have commenced experimenting to determine the value and best method of applying wax. Excellent results have so far been obtained, resulting in fruit arriving on the consumers' tables possessing all the lusciousness and sales appeal of the freshly picked product.

Bananas, for example, which at the present time must be picked green and stored for ripening, may eventually be palm-ripened and, protected with a paraffin coating, delivered in their original delicious state. The advantage of palm-ripened fruit is obvious since there is no comparison between that and bananas brought to full bloom through storage treatment.

Although still largely in the experimental stage, growers and shippers see in wax dipping the means of saving millions of dollars now lost annually through rotting and shrinkage caused by loss of moisture. The meat industry also is interested in this latest application of petroleum to foods, it having been found that the wax coating preserves flavor and preserves loss.

TO SURVEY TERRITORY

(Continued from Page 53)

production in this area is negligible and for some years past the Company has not carried on any drilling activities.

The prospects of the new concession are not well known, although preliminary geological work has been carried on in the area. It is the intention of the Company to do further geological work there and also some geophysical work, including a gravity-meter and magnetic survey. By these means it is hoped to secure additional information which will determine whether it would be advisable to proceed with the testing of any likely-looking structures which may be revealed.

GEORGE KELLEY PASSES ON

- George R. Kelley, for twenty-four years a member of the Montreal division marketing staff, died recently at Montreal following a brief illness. At the outbreak of the Great War Mr. Kelley enlisted with the 14th Battalion and served overseas until the war ended. He was wounded and gassed. On demobilization he resumed his duties with the Montreal marketing organization of which he was a valued member. He was perfectly bilingual and was well known in Montreal advertising circles. Former comrades in France were his pall-bearers. His former business associates gathered in large numbers to express their respect and sorrow.

IMPERIAL OIL REVIEW

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