THIS Christmas season is one in which pride, sorrow and thankfulness fill our hearts; pride for the valour of the British peoples, sorrow for their anguish and sufferings, and thankfulness that here in the western world we have so far escaped the horrors that have made 1940 the most tragic year in history.

This is a time to search our hearts, asking ourselves are we in every thought and action proving worthy of the traditions for which we are at war. Let us particularly remember that in this war the front line runs through every one of our plants and offices and homes and so devote ourselves in all we do to a vigorous prosecution of the war.

Of our many employees who are serving in the armed forces I am thinking with pride and gratitude. May you soon be back with us again! To all my fellow workers I send greetings and trust that we shall cheerfully make the sacrifices that will be required of us all in the coming year to set our feet on the path to a decisive victory.

[Signature]

PRESIDENT

Christmas Tree - - Turner Valley Style
(Facing page) Bearing little, if any, resemblance to our native spice, the intricate arrangement atop this Turner Valley well is known as a "Christmas Tree". Its purpose is by means of its many valves to control the flow of oil from the well.
Along CANADA'S FIRST WESTERN HIGHWAY

Mrs. Gertrude Charters writes another of her interesting accounts of Pioneer Motor Touring in the Peace River Country

Right—Cairn to the memory of Sir Alexander Mackenzie on the banks of the Peace River, near the site of the old fort where he wintered in 1792-93.

of rum while Hudson's Bay Factor Bratton, hid-
ing in the woods, watched indifferently. Today he
sits in his log home in the woods a mile from the
town and watches happily, and perhaps a bit
wistfully, while man, silver plates of the Yukon
Southern land and take off. Of his original home-
stead all but forty acres, which he reserved for his
home, is now an airfield conforming to recent
requirements of the Department of Transport.

Pontoon-equipped planes land at Charlie Lake,
five miles north, where an air base has been estab-
lished. It is often necessary to change from land
to water planes for northern flying at this point.

A well-kept dirt road defies the impossible look-
ing hills from Fort St. John to Hudson Hope.
For sheer, precipitous ascents and corkscrew turns
this sixty-mile foothill road above the Peace can
only be compared to the Fraser valley. But every
breathe gained is a new thrill. The lordly Peace,
guarded by its mighty ramparts of scarred earth
and rock, stretched away to the blue, snow-covered
mountains. Tree covered islands sheltered in the
broad stream. The banks were carved like those
of the Bad Lands of the Grand Canyon, offering
fascinating possibilities for exploration. On level
tablelands beside the river yellow fields of grain
were being cut and stacked. Gardens with toma-
toes, cucumbers, corn, pumpkins and all the staples,
were wonderful and untouched by frost.

But all this eye-filling beauty was hard on gas.
Just as we were wondering what a straddled motor-
ist would do in those hills we saw, at the very edge
of a hill overlooking the river, an Imperial Oil
Dealer sign swinging in the breeze. Like a friendly
beacon, it promised sufficient power to conquer
the remaining hills. This was known as “Half-
way,” where Mr. Tompkins and his sons run a farm
and truck service. Below, the Halfway River runs
into the Peace and is crossed by a fine bridge,
officially opened this summer.

Hudson Hope has an old world charm that is
quite captivating. Built above the river at the
mouth of the wild Peace River canyon, it is shel-
tered by a hill. Its single street has an unusual
aspect; a Hudson's Bay post, hotel and auto camp
with most enticing log cabins, a school, hall and
church. Originally an old fur trading post, it still
deals extensively in furs as well as being the
supply centre for trappers, prospectors and ranchers.

KING WINTER arrives early in western Canada and
starting five months snow falls intermittently from
his frosty mantle. The average annual snowfall is
about twenty feet but with the strong wind and warm winds
of spring it tends to melt and run away too quickly,
leaving the soil still alight even though the snow
represents one-quarter of the total annual precipita-
tion.

In view of this western farmers have invented a

HOARDING SNOW

Helps Western Farmers Beat the Drought

technique of snow hoarding which helps to provide
the moisture needed to nourish the crops until the
time of the usually-bad-for summer rains. The
latter and possibly most successful method of snow
hoarding has been developed by G. D. Matthews,
Superintendent of the Department of Agriculture,
Dominion Experimental Station at Scott, B.C.

Mr. Matthews' process is ingeniously simple. He
simply places the light early snowfall into ridges
with tractor-drawn snowmovers of special design
which leave each level field laid out in uniform
ridges eight feet apart. Even four inches of ground
snow makes ridges twenty inches high—'and these
are big enough to anchor succeeding drifts so that
they do not blow away. When spring comes the
trapped snow melts gradually and soaks the soil
instead of running off in streams that cut gashes
through the fields and leave other glasses so dry that
wind erosion carries away the good top soil.

The photographs on this page illustrate the bene-
fitful results secured by snow-riding of a field of
western wheat.

Whitehouse—Placed at a fast cost of from 2 to 5 cents an acre, the
ridge top takes snow storage, maintaining a thick blanket of
snow which melts evenly in the spring.
AIR DEFENCE
BEGINs ON THE GROUND

HEAVING eighty or more aerodromes out of raw Canadian prairie, cultivated farm lands and virgin bush between spring thaw and winter freeze-up is the stupendous task which Canadian engineers and contractors are successfully accomplishing under the British Commonwealth Air Training Plan.

As originally conceived, the Empire Training Plan was to be a long-term scheme that would furnish the Allied forces with overwhelming air superiority by the end of 1942. The tragic events of last spring which ended in the collapse of France drastically changed the perspective of the Plan and forced a speeding up in the construction of training fields and schools.

Instead of the original program which called for 64 aerodromes to be completed by the middle of 1942, a new program was drawn up last spring which required that fields and buildings be pushed to the limit. The number of training schools was to be increased and all ground

(Continued on page 11)

BELOW - No. 3 Service Flying Training School, Camp Borden, Ont. (R.C.A.F. photo.)

UNTIL a few days ago this was bushland. Soon it will be a R.C.A.F. training field. Where now stand tree stumps, husky bulldozers will rear down smooth-surfaced runways, 3,000 feet long. (R.C.A.F. photo.)

ROAD-BUILDING EXPERIENCE SPEEDS AERODROME CONSTRUCTION

Modern mechanized equipment and the experience gained in the building of Canada’s extensive highway system has made possible the quick tempo of work in the aerodrome construction program undertaken by the Department of Transport in connection with the British Commonwealth Air Training Plan.

Since early spring great armies of trucks, tractors, graders and other road-making machinery have labored unceasingly 24 hours a day, seven days a week. As soon as the snow left the ground construction crews went to work tearing out trees, digging drainage ditches, grading and levelling thousands of acres, laying hundreds of miles of asphalt-surfaced runways. To find suitable sites for the 86 aerodromes now required under the Empire Plan, more than 1,000 possible locations first had to be studied.

Some conception of the magnitude of the task which faced construction engineers this spring may be gathered from the fact that the first 94 projects to be undertaken involve, among other things, the moving of 20 million cubic yards of earth, the laying of some 300 miles of underground drains, the planting of 20,000 acres of grass, and the paving of 10 million square yards of runway surface—the latter equivalent to over 600 miles of standard highway.

ROBOTS and bulldozers out, stripping and grading begins on the mile-square field. Earth cut from the slopes will be used to fill the hollows.

WITH slopes cut down and hollows filled, the field begins to take shape. Up to this point the noisy graders and motor scrapers will have handled upwards of a quarter-million yards of earth.
Known as sheepfoot rolling, this operation accomplishes in days what nature requires at least a year to do by the slow process of settling. Rolled up and down the field, the heavy spikes compact the freshly leveled earth to form a solid base for runways and turf.

Upward of 265,000 tons of material will be used in building the hard-surfaced runway for a heavy bomber field. Included will be 60,000 tons of aggregates hauled from a nearby quarry.

More rolling following to remove the holes left by the sheepfoot roller and to further compress the surface. The field is now ready for the asphalt runways. Areas not paved will be turfed. Special top soils and fertilizers may be necessary to hasten the growth of the grass.

To drain a square mile of level land presents problems even under most favorable conditions. If the field is built on clay, elaborate drainage must be provided for quick run-off. Lining both sides of all runways are deep stone-filled ditches which drain the runway itself and prevent the formation of surface water spots and heaving caused by frost. Machine at left is digging a runway ditch.

Aerodromes Cost from $100,000 to $800,000 Each

Although dozens of aerodromes are now being built in Canada under the British Commonwealth Air Training Plan, each falls into one of five standard types as established by the Federal Department of Transport.

Simplest and least costly are the fields used by the Elementary Flying Training Schools—turf areas of 200 or more acres on which only light training planes are operated. These are at least 2,500 feet square with landing strips 2,500 feet long and 750 feet wide which fan out in all directions. Approximate cost: $100,000 exclusive of buildings.

Most costly of the standard air fields, approximately $850,000 exclusive of buildings, are those for the Service Flying Training Schools, which consist of a main field around which living quarters for 1,000 or more men, and hangars and shops are concentrated. Two nearby relief fields are also required. Specifications for these aerodromes call for a spoke wheel of landing strips, each strip being 3,000 feet long and 1,000 feet wide to provide for the landing of five planes abreast. On each strip are two asphalt runways 100 feet wide.

Required 500 acres or more of level land are the aerodromes for the Air Observers, the Bombing and Gunnery, the Air Navigation Schools. Landing strips for each of these fields must be 8,000 feet long and each must have paved runways 2,500 feet long and 150 feet wide on each landing strip. The average cost of these three standard types (each with special differences necessitated for various types of training) is $350,000.

Before the asphalt mix is applied, the base is sealed with a coat of liquid asphalt primer. This prevents moisture from working its way up through the base to break out as surface "bubbling when the final mix goes out of the ground.

To one side of the field the contractor sets up his mixing plant, shown above, where aggregate and asphalt for the surfacing are blended.
ASPHALT for runway mix and surfacing is shipped from Imperial Oil refineries in railway tank cars, each holding 8,000 Imperial gallons. From 15 to 50 cars of primer and surfacing asphalt will be used in paving the runways and last stage of a standard R.C.A.F. aerodrome.

TO SPEED airfield construction, road-building machinery was pressed into service in many parts of the country. The photo above shows a highway paver at work on a western airport, laying 1,900 tons of asphalt runway a day. Runways on a large field contain one-half million square yards of surface, equal in area to 12 miles of highway.

SKILLED Canadian carpenters make short work of erecting a hangar. More than two million feet of lumber are needed to complete hangars, barracks and instruction quarters for a complete aerodrome. (R.C.A.F. photo)

AIR DEFENCE (Continued from page 8)

work was to be under development before freeze-up this year. All buildings scheduled to be built by the fall of 1941 were to be erected before the end of the year. Well ahead of schedule, 67 R.C.A.F. schools will have completed aerodromes before the end of December, 1940. More will follow in rapid succession. This huge undertaking, made possible by pressing into service all available airport engineering and road-building resources, will likely turn out to be one of the outstanding construction feats of war-time Canada.

R.C.A.F. PILOT students hurry out to their primary training planes in the grey of the early morning. Plane call for 8,000 men in training by the end of the year. (R.C.A.F. photo)

A VILLAGE of wooden barrack buildings springs up nearby as the training field nears completion. With water and sewer pipes in the ground, the sod roofed and made ready. Accommodations for approximately 1,000 men will be provided. (R.C.A.F. photo)
Getting from Here to There

TRANSPORTATION—THE ARTIFICIAL SYSTEM OF OUR NATIONAL BEING

As we are in the midst of the most terrific struggle in our history, when the forces of aggression are attacking our land and Empire, deriding our institutions, defaming our mode of government and our ways of life, it is fitting at this time to look at the progress we in Canada have made in our brief historical life, and from this draw a design for what we can do and shall do in the future.

Before you is a panorama, a series of glimpses at the rapid growth on this young continent. It is a dramatic chapter of human achievement started by a handful of courageous men and women who dared the wilds of an unknown continent.

... Observe Aboriginal Canada. A primeval wilderness, with no signs of habitation but the Indian tipi. There are no means of communication except the birch-bark canoe and the wild portage. There is no light and no heat other than the glimmer from the campfire, and no power but that of man's physical strength.

This is a glimpse in the very beginning of our history. The original Canadian still carries on his daily activities much in the same manner as he has done for countless ages, with little speech, with no letters to record the past, with no present above a wild existence in the forest.

Observe the aborigine as he labors to produce fire by rubbing together two pieces of wood. Many centuries have not taught him a less laborious method of making fire. With flint and stone he produces showers of sparks, but knows not how to utilize them. There he remains with his two sticks, rubbing for hours to produce a glow that will fan into a flame.

... The Pioneer Age. Our scene changes as the white men come in ever-greater numbers, men who talk and write and pray and cut ever deeper into the dense forest. They clear land and grow food. They build heavy block-houses that keep out the wintry blasts, and surround their houses with tall stockades that defy attack. They do not change their habitation with the seasons of the year. They are settlers.

This is the pioneer period, a period well known to many Canadian men and women still living. The pioneer carving out a continent, subduing nature, and as he presses ever further, carries with him his civilised practices, his arts and his handicrafts, he tames the wild forest and the wild life in it. He has with him the elements of mechanics and soon he builds himself wagons on wheels. He uses the wedge, the pulley, the lever, to lift, to transport, and to handle masses. The pioneers are few in number. There are no slaves, nor are there countless thousands of human hands available for labor as in his old home. He has to think, invent, and grow mechanical, or become as primitive as the Indian in the forest.

And through it all, distant horizons constantly beckon to him. He advances over forest and mountain trail. The pioneer starts to enlarge and improve the forest and prairie trails. The erstwhile primitive path becomes a road over which he advances in covered wagons, in rapidly moving stage-coaches, on horseback, and on foot. Unlike the aborigine, the pioneer is no longer bound to follow the animal trail or go only where the turbulent stream leads. It is the beginning of man-made communication.

There is light in the pioneer's hut. In contrast with the savage, life and activity with the pioneer does not cease with the close of day. On the long wintry evenings, by the light of the tallow candle or torch, the pioneer reads, writes, fashions and works, and above all thinks and talks.

... Appearance of the Railway. Observe the beginning of a new age with the coming of the steam engine. Men are starting to harness the forces of nature, to utilize principles of science that were known since ancient times—principles that philosophers and poets had taught and sang, of nature and its forces. Not until democracy became a way of life, not until human dignity rose above slavery, did men conceive science as a service to mankind.

The steam engine and the railway, rapidly spanning a vast continent, bring ever-growing numbers of men from an over-crowded world—men eager for labor, for opportunity, for freedom.

From this slender branch of steel branch out our early roads, to the north and to the south. They break the isolation of the remotest pioneer and
light and heat and now is converted into power in the internal-combustion engine. Here is the world of power, of machines, of invention.

. . . Today—and the Future. Glance at today—at our today. Measure and appraise our progress. The narrow roads of yesterday have become the highways of today, an amazing network that spans our continent in all directions. Countless automobiles ride over our primary and secondary routes in a constant and unceasing stream. Nearly 1,500,000 automobiles and trucks, and a great many individual and interdependent power units, are spread over our land, all motivated and lubricated by the products derived from crude petroleum, refined and distributed by a vast industry.

Consider that men have seen crude petroleum oozing out of the ground for thousands of years and nothing was done with it. In the brief space of fifty years, crude petroleum has placed the world on wheels. Crude petroleum, which enslaved men in an endless past could not utilize. In our brief period, free men have made it to yield not only heat, light, and power, but also the oil to lubricate our vast

(Continued on page 24)

PUTTING NEW STRETCH INTO RUBBER

By TED SANDERSON

When Europeans first explored the Amazon River, they found the Indians making crude water-proof articles from a liquid secreted by the “weeping tree.” By repeatedly dipping their feet in the liquid and letting the coating coagule between dips, successive layers produced a pair of waterproof boots that never failed to fit. Similarly, woven basketwear was coated with the same material to produce water-tight buckets. That was just over two hundred years ago.

About forty years later, some of this gum found its way to England where it was learned that a half of it would rub out pencil marks; so it was named “rubber.” and rubber has been as big a part of the English speaking world ever since. Rubber has been making the usual discomfort of life for a long time now with increasing efficiency, and today practically the whole system of modern, mobile, power-driven war and industry rides on rubber. Rubber is also the source of a multitude of modern problems, ranging from the stability of nations for control of the East Indies to the scientific designing of a tire tread.

The East Indies came into the rubber picture in a curious way. Less than a hundred years ago all the rubber in the world grew wild in the tropics of South America. The East Indies were then the home of coffee. Englishmen, however, took seeds from the rubber trees of Brazil, and used them to start great rubber plantations where coffee once grew in the East. Brazil, in turn, obtained coffee seeds from the East, and used them to start coffee plantations in the home of rubber. Today, Brazil leads in the production of coffee while the Far East is supreme as the source of the world’s supply of crude rubber.

All the rubber, so vital to industry in Canada and United States, must now be brought half way around the world from

THE PURPOSE of this test is to determine the resistance of a line to rupture. The action reproduced is similar to straining an object in the road at high speed.
Going Down!

Oil-Well Drilling Machinery Now in the Can Reach More Than Three Miles Down into the Earth.

Ready to beat the world's 15,004-foot depth record, oil drillers are now using a drilling outfit designed to penetrate horizons at depths of 17,500 feet.

Prior to 1931 no well had reached a depth of 10,000 feet. By the end of 1939, 477 wells in the United States and one in Canada had been drilled below 10,000 feet, and 41 United States fields were producing oil from depths between 10,000 and 13,266 feet. By the end of 1938 these new areas had added an estimated 460,000,000 barrels of oil to petroleum reserves of the world.

Operating machinery on the new rig, the largest and heaviest rotary drilling outfit ever built, weighs more than 48,000 pounds, is equipped with three-speeds, and has a 40-inch double rotar hydromatic brake.

Deep drilling, today a highly specialized and efficient art, is rapidly changing the design and manufacture of oil field equipment. To accommodate the larger drilling blocks and cooling boxes now used—many designed to carry loads up to 500 tons—and to provide floor space on the derrick for racking two miles of drill pipe in stands 120 feet long, derricks 170 feet high are being used with bases 32 feet square. Oil fired boilers with a steam-generating pressure of 360 pounds per square inch have come into general use to meet heavy duty. Super-heaters increase boiler capacity by 25 per cent and furnish drier steam to power units on the derrick floor. At the greatest depths being reached by the drill, pump pressures as high as 1,200 pounds per square inch are required to circulate mud fluid which brings the drilling debris to the surface.

The best steel available is being used for drilling bits, which must remain sharp and stand up as long as possible under high speeds and great weights. With four to eight hours or more required to "come out of the hole" with drill pipe, change bits, and "run in", bits that will make large footage before becoming too dull are essential to keep costs within practicable limits.

Today, wells are being drilled to 10,000, 11,000, 12,000, and 13,000 feet with such regularity that they attract no more attention than did 7,000, and 8,000 feet ten years ago. And in the light of latest drilling advancements today's deepest wells are likely to become "also rans" tomorrow as the drill is pushed further and further below the earth's surface. "Going Down" is indeed the order of the day!

FALL & WINTER • 1940
Golfers from El Centro and Barranca Bermeja Compete for G. Harrison Smith Trophy

Golfers from the Tropical Golf Club of El Centro and the Miramar Golf Club of Barranca Bermeja competed this summer for the G. Harrison Smith trophy, a beautiful shield which Mr. Smith donated as a prize for this tournament.

This was the first year that this trophy had been played for, as the Miramar Club was officially inaugurated only on October 2nd, 1939. The competition was of 18 holes in Barranca and 18 holes in El Centro, for team points. The teams consisted of 16 players each, consisting of 12 men and 4 women, handicaps being used.

The big surprise of the match was the fine showing put up by the team from the Miramar Club. At the outset it was not considered as having an outside chance even on its own course, as the majority were inexperienced, some having started to play golf only after the opening of the Miramar Club. However, the dopesters were upset and at the end of the day's play in Barranca the Miramar team was on top by 2 points.

Jubilant with their lead, and confident that they would emerge victorious, the Miramar players invaded El Centro. But experience won out—at the end of the play the final results were: El Centro 21½ points, Barranca 10½ points.

The G. Harrison Smith trophy stays in El Centro this year, but the Barranca players trust that with another year's experience they will have it in their possession.


HOT OFF THE ICE...

Come The Imperial Oil Hockey Broadcasts to 3,000,000 Fans in Canada, Newfoundland and the United States

By C. M. PASMORE
In Charge of Production, Imperial Oil Hockey Broadcasts.

Any midwinter Saturday evening. It's five o'clock in Vancouver—twilight is just fading over the broad Pacific, as homeward-bound shoppers and business men snap on their car radios. Six o'clock on the Prairies, and in thousands of farm homes the "volume" is boosted when the family gathers for the evening meal. Seven o'clock on the Winnipeg-Brandon highway, and an Imperial Oil dealer eagerly twirls his dial to CKY. Eight o'clock in Timmins, and miners off shift settle comfortably into easy chairs beside their radios. Nine o'clock "Summer Time" (!) in Ottawa; nine o'clock "God's time" in Halifax; and statesmen and naval ratings alike wait expectantly with their eyes on the clock. Half past nine in Newfoundland, and fisher families huddle close around short-wave receivers, praying silently that "static" will take a night off while hockey's on the air.

Then, from far away—ret right beside you in your living room—comes the friendly voice of Court Benson in the familiar welcome which three out of four Canadian listeners are waiting to hear at this deadline hour every week: "... and the Imperial Oil Dealer in your community brings you—Foster Hewitt!" Almost instantly, from an eerie high up over the gleaming white surface of new ice, the voice of Foster Hewitt himself cuts in with the now-famous greeting: "Hello Canada—and hockey fans in the United States and Newfoundland..."

Another Imperial Oil Hockey Broadcast is on the air!

Meantime, at precisely the same instant on most Saturday nights throughout the Winter, Gerry Arthur and Walter Downs simultaneously introduce the favorite play announcers of the Province of Quebec—Roland Beauchr and "Buzz" Roberson—bringing French and English word-pictures of the games in Montreal to listeners throughout the provinces.

More than two million Canadian and Newfoundland hockey fans hear the weekly greeting from one or another of those "three star" Imperial Oil hockey announcers. More than a million listeners in United States keep them company—a large and fast-growing audience which some day will out-number the hockey broadcast devotees in hockey's national home. From Atlantic to Pacific, and from the Mexican border to the Arctic Circle, Imperial Oil Hockey Broadcasts attract a constantly increasing brotherhood of fans. And since about the middle of last season, the circle has been still further widened to include scores of thousands of British listeners who are learning to tune to hockey as a temporary "escape" from the...
This is Maple Leaf Gardens, world's finest indoor ice arena, as seen by hockey fans in the top row in the south-west corner.

Over on the far side, suspended 65 feet above and 60 feet back from the ice, is the gondola from which Foster Hewitt broadcasts his vivid play-by-play descriptions to over 3,000,000 Imperial Oil hockey fans each week. From this height the play appears to move more slowly—like automobile traffic on a busy street seen from an airplane—and affords a view which is not duplicated for any other announcer in any other sports stadium in the world.

Also in the gondola is the 7-man production crew which keeps the broadcast running smoothly as it switches from microphone to microphone.

Directly above centre ice hangs the big electric sports timer which records the game by seconds, stopping each time the referee holds up the puck. Grouped above the sports timer are the loud speakers, over which goals and penalties are announced. Goals are verified by the goal judge who sits in little cages back of the goal nets at each end of the ice.

Away up on the north wall are the four penalty clocks, two for each team, which slowly tick off the minutes of the penalties recorded. Also in the north wall is the scoreboard in which are flashed the score of out-town games. The penalty bench is just inside the rail on the west side. Here, also, sit the penalty time keepers and the game time keepers.

Directly across the ice from the penalty bench are the players' benches, while nearby is the box from which members of the "Hot Stove League" observe the game and use up the play before "taking over" during intermission.

The nerve centre of the big coast-to-coast hook-up for your Imperial Oil Hockey Broadcast is the broadcasting gondola which hangs from the steel rafters sixty-five feet above the ice level, and nearly sixty feet back from the rail, on the west side of Maple Leaf Gardens. Here Foster Hewitt enjoys a birds-eye view of the play below and in front of him—a view which is not duplicated for any other announcer in any other sport stadium in the world. Here also you'll find at least five members of the seven-man "production crew," who accurately time the various "high spots" of play for the recorded broadcast which is later sent overseas, and who also operate a battery of inter-communicating telephones and light signals to keep the broadcast running smoothly as it jumps from microphone to microphone—down to the dressing-room studio, back to the gondola, or cross-town to the key station of the network, as circumstances may require.

That's why we call it the "nerve-centre" of the broadcast. The gondola is only some fifteen feet long by scarcely more than twenty-seven inches wide; so when the intermission announcer or some visiting sport celebrities occasionally "drop in" for a visit during the periods of play, they're likely to find standing room only—and not much of that.

Actually the gondola received its name because of its resemblance to the gondola of an old-style dirigible. For the first seven winters of hockey
broadcasts it could be reached only by a curious and perilous route along a cat-walk, suspended nearly a hundred feet above ice level. From the radio control room, the cat-walk was reached by a reasonably reassuring series of steel staircases. But this was only to lure the victim on to his ultimate demise. The cat-walk itself was rather breath-taking for most visitors—and the precipitous steel ladder which led down from it into the gondola was something else.

The intermission crew and Foster Hewitt spend the first period (which is not broadcast) carefully watching and analyzing the play. Meanwhile, the production men and engineers spend the time testingmicrophones, telephones and signal lights, making themselves familiar with any special details in the photographed "routine" of the broadcast, synchronizing their watches with observatory time, agreeing on "cues" for the various switches from mike to mike, relying to Foster Hewitt the official decisions concerning penalties, scores, assists, etc. and generally working themselves up into a fine lather of nervous tension as the zero time approaches for the start of the broadcast.

A minute or so before nine o’clock, Toronto time, Court Benson, a control operator, and one of the production crew that while he'd been in quite a number of strange spots during his long career as a sports announcer, that trip along the cat-walk and down the ladder was the weirdest "spot" of all.

However, a new low-level cat-walk was constructed two years ago, running out directly to the gondola from behind the "grey section" (the topmost tiers of seats) on the west side. As the songwriter might have said: "The thrill is ended, but the memory lingers on."

The gondola crew and the intermission announcers are usually in their places well before game time.

During the pause that follows, the sharp jangle of the sport-timer bell may be heard faintly, sounding the first period. Then the rhythm of thousands of feet—the stamping of skates in the corridor—the start of a musical number on the Gardens' loud-speaker system. But in the tiny studio—not a breath. The door opens and the sport "experts" tip-toe into the room to take their places at the various microphones. The production man still has his eyes on his watch. His right hand now grips Court Benson’s arm.

Meantime, in thirty-nine stations across Canada, thirty-nine station announcers are sending out local or regional greetings to listeners on behalf of Imperial Oil Dealers. Each of them has one eye on a stop-watch which he started sharply on the opening buzzer signal. Each of them knows that at a precise second—no sooner, no later—he must continue his broadcast of that stage of the game. That is, as his station can join the network right on the dot. And as that predeterminaded second is reached, thirty-nine station announcers simultaneously turn you over to Maple Leafs Gardens and Court Benson.

At that precise, agreed-on second, the production man’s right hand comes suddenly on Court Benson’s ten left arm. A sharp intake of breath, and then:

"Again, from coast to coast, it’s Hockey Night in Canada... and the Imperial Oil Dealer in your community brings you—Foster Hewitt!

A clitching of headphones againststraining ears. A breathless quarter-second pause. Did Foster "get" the cue? Yes—over the headphones comes his voice in the familiar ten-year-old greeting from the gondola: "Hello, Canada!..."

Sixty seconds later, after Foster’s brief review of the score, penalties, and general play, the broadcast is "thrown back" to the studio for the remainder of the intermission. Court Benson and the crew of sports authorities are at once immersed in another session of the now-famous "Hot Stove League."

That name fits all too well. The tiny, padded-walled studio is cramped—over-crowded—and sweltering hot. But still the intermission minutes seem to race past at breath-taking speed. They may appear to drag slowly enough to you listeners waiting for the second period to start, but to the studio crew it seems as though the discussion has barely begun when the final, far-off "brrrrr" of the dressing room bell is heard, calling the teams back to the ice.
sible job of selecting from the ninety minutes of recorded hockey broadcast exactly twenty-nine minutes of "high-spots" of play, and titling these fragments into a coherent half-hour hockey broadcast for Canadian troops in Great Britain. And what a job! Frankly, if it had been for anybody but the "troops," we'd have had upturns of resignations in our hands (including Foster Hewitt's) after the first night it was ever attempted. Midnight through last Winter.

Of course, by the time the games end, it is already three-thirty a.m., British time. By the time the selected montages of exciting play may have been "dubbed" together onto a half-hour recording, a new dawn has了下来。A few hours later (usually about tea or eleven o'clock Sunday morning, Toronto time) the C.B.C. broadcasts this half-hour "dubbed" record by beam wireless across the Atlantic to the British Broadcasting Corporation.

"For more complete description, see "How the Imperial Oil Broadcasting Service Functions,"" The Canadian, Vol. XXVIII, No. 4, November, 1943.

PUTTING NEW STRETCH INTO RUBBER (Continued from page 18)

cause is reduced. Old traction characteristics are preserved by indentations in the sides of the treads. The technological lack of any shoulder is advantageous in areas of high abrasion.

It is not intended to suggest that Atlas engineers accomplished these results in anticipation of a rubber shortage. They met their aims, as actual tests show, by producing a tire that is quiet, cooler running, having better non-skid properties because of more contact with the road, and by an increase of 40% in efficient service without additional cost to the user. Nevertheless, the incident is another example of 15% rubber requirements for the same distance travelled, without sacrifice of needed services. It is an illustration of the adaptability of the rubber industry to the pressures of the present world war.
ALONG CANADA'S FIRST WESTERN HIGHWAY

(Continued from page 4)

the canyon. Now the road is thick with dust and car smell, and covered in the leaves of less than 10 miles by car.

High above the canyon we came upon a huge rusted ship's boiler, weighing tons. Relic of a much more ambitious gold dredging scheme of a quarter century ago, it had been abandoned there when the cost of transporting such machinery to the town of Klondike and its environs by sloop to Hudson Hope had ruined the company's finances.

But there is still gold in the bars above the canyon and each year sees youthful prospectors panning for it with primitive gristmill and much patience. One hundred seven couple were making their winter gristmill by panning and were keeping house in an old log cabin.

As we climbed up the huge moss-covered beards, red-yellow in color, which guarded the base of the canyon, it was not hard to imagine the feelings of Mackenzie and his men as they gazed in awe at the overhanging rocks and the wildly foaming waters from which their vessel so narrowly escaped.

"It was really awful to behold with what infinite force the water was driving against the rocks on one side and with what impetuous strength it is repelled to the other," Mackenzie wrote in his Journal.

The flat-topped rocks were pitted with holes, smooth as polished marble. Some looked like three-foot animal footprints, others were natural cylinders with a hole and a groove from one to two hundred gallons. In flood time they are filled with water. Across the river the rock formation holds well preserved animal remains and other prehistoric animals. But they will likely lie in peace for still some time to come.

The Peace River flowed wide and swift from the blue mountains. By canoe and portage one can still follow in the path of the for-traders through one hundred miles of the most gorgeous pass in the Rockies to the source of the Peace River, heads down to Prince George and on to Dawson again. If the proposed Alaska highway passes the latter point, motor roads will likely some day branch west along the Peace. But as yet that stretch is as unspoiled as it was when Mackenzie crossed in 1855.
Cats are taking the place of the sled-dog in Canada's North. Powerful, steel-clawed cats, they growl and roar as they crawl over frozen lakes, along river banks, through bush and muskeg, pushing tons of freight on the sleds behind them.

The "cats" are the caterpillar tractors, which are solving one of the major problems of northern development—the problem of hauling equipment into isolated mining areas.

Before the caterpillar tractor was thought of for the job, the only means of transporting equipment for a new mine was by aeroplane—and in many cases the equipment needed was too heavy and too bulky to permit handling by this means. Now cat "swings", manned by hard-bitten crews, haul in as many as 100 tons of equipment in one load.

Storms don't interrupt the regular schedule of these "Arctic Pullmans". They batter their way through blizzards and huge drifts of snow. The only thing that will call a halt to their progress is when they break through the ice as they cross some lake on their trek. And here's a peculiar situation—the colder the weather the worse is the danger of the ice giving way! The ice contracts and cracks appear. Water works its way through the cracks and rots the ice on either side, making slush holes. When the heavy tractor crawls over one of these holes, the ice gives way and the tractor quickly sinks out of sight, while the "skimmer" as the driver is called, and the rest of the crew scramble for safety.

GOING DOWN! A "cat" sinking through a slush hole in the ice. The "skimmer" seems unperturbed, merely disgusted at the delay. A moment later he jumped to safety.

(Photos courtesy Patricia Transportation Co., Ltd., Hudson, Ont.)

A tractor train backs up to Red Lake with a load of mining machinery encounters slush conditions.

2 NO SUBMARINE HERE. Looking like a partly sub-
marged submarine, the "cat" slowly sinks out of sight
and settles in the thick mushy slush on the lake bottom. The train
of sleighs has been drawn to safety.

3 SNAGGED. As the tractor recks the crew hastily
snagged
it with a giant hook at the end of a heavy flexible steel
cable. Another "cat" now pulls it part way to the surface and
securely anchors it.

4 HERE IT COMES. Two heavy trees have been cut down
and a derrick erected, complete with block and tackle.
The photograph shows the unfortunate "cat" coming to the
surface, the "skimmer" guiding its exit from the freezing depths.

5 RESCUED. Hauled from the lake bottom, the "cat" will
be repaired for a few minutes. A line will be set going
to moor the ice that has formed on the moving parts and then
it will crawl again towards its destination.

FALL & WINTER • 1940
W. T. A. BELL APPOINTED SALES MANAGER
IN BRITISH COLUMBIA

The appointment of W. T. A. Bell as Sales Manager of the British Columbia Division was announced in September. Before leaving for Vancouver to take up his new duties Mr. Bell was honoured by his associates in the Ontario Division with a farewell dinner.

Mr. Bell joined the Company in 1933 as salesman in the Western Ontario district. In 1935 he was moved to Hamilton as Industrial Engineer and in 1938, with the consolidation of Hamilton and Toronto offices, he came to Toronto as Manager of Industrial Sales for the Ontario Division. Later in the same year he was appointed Merchandising Co-ordinator for the division in which position he carried on until his present appointment.

...RED CROSS GROUP AT 56 CHURCH ST. ACTIVE...

Recently the Red Cross Group of Imperial Oil's offices at 56 Church Street held a display of one month's knitting done by the girls of the group. Part of this display is shown in the picture below.

This group, which was comprised originally of 38 girls, was organized by the 56 Church St. Club in January of this year. Membership has grown, and now numbers 108. Since its inception approximately 600 articles have been knitted. Unlike most other groups, the girls do not meet once a week to knit but do all of their work at home.

Until the 15th of October all material knit was given exclusively to the Navy through the Red Cross, but the girls felt they would like to do something for the volunteers from Imperial Oil's 56 Church Street and Princess Street Offices in Toronto and the Club is now concentrating on making an outfit for each man.

The guiding genius of this group has been Miss Irene Griffiths of the Refinery Sales Department whose untiring enthusiasm and efforts have kept the Club rolling right along. It was she who organized the group.

M. A. MCDOWELL RETIRES ON PACIFIC COAST

Sales Manager for Imperial Oil Limited in British Columbia, Mr. M. A. McDowell retired on September 30th last.

Born in Ballymena in Northern Ireland, Mr. McDowell left Ireland in 1906 and sailed from Belfast for Canada. His destination was Winnipeg, and shortly after he arrived there he entered Eaton's mail order house, the founder of which was not only an Irishman but an Irishwoman from Ballymena.

Feeling perhaps that there wasn't room enough for two Ballymena Irishmen in the same firm, Mr. McDowell left Eaton's and joined the Imperial Oil Company, becoming assistant to the cashier and later doing sales sheet, recap and stock work.

This was the period in Canadian history when the tide of settlement was moving westward and in 1909 Mr. McDowell was transferred to Edmonton to act as salesman for the surrounding district.

After three years he returned to Winnipeg as city salesman and in 1917 his fine record led to his appointment as Assistant Manager of British Columbia Division and later as Sales Manager, the position he held when he retired.

Mr. McDowell likes to play golf, plays it exceedingly well, and counts himself fortunate that he can play it all year 'round in British Columbia. His other recreation is horticulture, in which he is keenly interested.

Part of one month's knitting by the Red Cross Group at 56 Church St.