



CANADIAN WEEKLY BULLETIN

INFORMATION DIVISION
DEPARTMENT OF EXTERNAL AFFAIRS
OTTAWA - CANADA

Vol. 12 No. 30

July 24, 1957

CANADA'S BIG RESOURCE PROJECTS

Pointing out that the very high rate of capital investment - last year 26 per cent - has been an outstanding feature of Canada's postwar economic growth, the "Monthly Review" of the Bank of Nova Scotia attributes a key role in this surge of capital spending to resource development.

There has since 1950 been a growing emphasis on very large projects in areas untapped before, the Review notes - iron ore in Quebec-Labrador, uranium in Ontario, nickel in northern Manitoba, oil and gas on the prairies, water power to produce aluminum in northern British Columbia, to give only a few leading examples. From one coast to the other the big project has become a familiar landmark, stimulating activity and pushing the frontier northward.

This wave of resource development on the grand scale has been brought about by a conjuncture of favourable circumstances. Of primary importance has been the postwar rise in world demand for industrial materials, particularly the insistent needs of the huge and growing economy of the United States. In some instances - the Knob Lake iron-ore project is an outstanding example - this demand has been concentrated in a single United States industry which not only has constituted a market for the product but has also provided much of the capital and the specialized technical knowledge required. A further stimulus has come from new techniques in discovery, processing and use. Spurred on by the demands of the

atomic age, prospectors were led by the geiger counter to the uranium deposits lying along the edge of the Canadian Shield. The airborne magnetometer or "flying doodle-bug" has been increasingly used in the search for minerals, and played a major role in locating the huge nickel orebody in the Mystery Lake area of northern Manitoba. An advance in titanium metallurgy led to the exploitation of the Allard Lake ilmenite orebody in New Quebec. And new extractive methods are bringing closer to realization such long-mooted projects as development of the Athabasca tar sands and of the Woodstock, New Brunswick manganese deposits.

Because previously untapped resources are for the most part located in remote or inaccessible areas, development tends to be on a large scale. Railways, roads and airstrips have to be built, power developed, townsites established, and municipal facilities such as schools, hospitals and sewers provided. The cost of these ancillary services is high and must be spread over a large volume of output if the undertaking is to be economic. Because of the large amounts of risk capital needed and the keen United States interest in Canada as a source of raw materials, the big resource projects, especially those involving mineral development, have been a focal point for the inflow of United States capital - which has been encouraged by the favourable investment climate in this country.

(Over)

CONTENTS

Canada's Big Resource Projects	1	Sod Turning	4
To Visit Canada	4	British Visitors	4
Protects Poultry Producers	4	Farm Area Unchanged	6
P.C. Gain	4	With NATO Fleet	6
Festival Visitors	4		

The big resource projects have had profound and far-reaching effects on the Canadian economy. New transportation routes are threading their way north into the wilderness all across the country, opening the way for further development. The St. Lawrence Seaway and the oil and gas pipelines are strengthening the traditional lines of communication that link east and west. New industries are springing up based on the newly available raw materials. The establishment of a petrochemical industry in Alberta is of course the prime example. Often, too, resource projects are inter-related. One of Edmonton's petrochemical plants produces textile fibres using Alberta natural gas and British Columbia pulp as raw materials. Sulphur extracted from the "sour" gas produced in the foothills of south-western Alberta is shipped north to Uranium City, west to the B.C. pulp and paper mills and east to a new fertilizer plant at Medicine Hat, Alberta. The availability of natural gas as a fuel was an important factor in the recent establishment of the first pulp mill in the power-short Prairie Provinces - at Hinton, Alberta, north-west of Edmonton. And of course the transportation of iron ore from Quebec-Labrador to the heart of the continent was a key consideration in the decision to build the St. Lawrence Seaway.

No less important is the impact of the big resource projects on a host of supplying industries. For instance, the amount of cement required by the Seaway alone staggers the imagination. Though many of the more specialized types of machinery and equipment have been imported, heavy industries in eastern Canada have been turning out such things as generators for power plants, digesters for pulp mills, grinding rods and balls for mine concentrators and tanks for uranium leaching mills. Particularly striking is the construction of half-a-dozen new pipe mills in Ontario and the west in response to the soaring requirements of the oil and gas industry.

Finally, the success of large-scale projects has encouraged Canadians to think in bigger terms. When Knob Lake, Kitimat and the Interprovincial pipeline were embarked upon, they were regarded as remarkable, singular feats. They turned out, in fact, to be simply the first in a succession of huge projects, including the two largest single undertakings in Canada since the building of the trans-continental railway system: the St. Lawrence Seaway and the Trans-Canada gas pipeline.

KNOB LAKE AND STEEP ROCK

Last year iron ore became Canada's fourth-ranking mineral - following oil, copper and nickel. Its dramatic rise to prominence reflects the swelling flow of shipments from Knob Lake in Quebec-Labrador, which last year contributed no less than 60 per cent of the total output of 22½ million tons. The rich iron deposits of this remote and desolate area

were described by a geologist as long ago as the 1890's. But it was not until a few years ago that rising iron-ore requirements in the United States and the depletion of high-grade reserves in the Mesabi Range prompted a group of United States steel and ore companies, acting in conjunction with Canadian interests, to take the bold and expensive step of bringing them into production.

The construction of a 360-mile railway running north from Seven Islands on the St. Lawrence was the heart of the undertaking, accounting for half of the original cost of \$250 millions. A townsite named Schefferville, whose population now numbers about 2,500, was carved out of the uninhabited wilderness to serve the new mining area. Hydro-electric power was developed nearby, and also in the vicinity of Seven Islands to supply electricity to the dock and loading facilities established there. The tiny fishing village of Seven Islands has been transformed into a thriving port, its population increasing more than twenty-fold, to some 7,000.

The new railway has given access to the "Labrador-Trough" - a broad, mineralized belt extending north to Ungava Bay from a point well south of Knob Lake. Exploration, not only for iron ore but for non-ferrous metals as well, has been accelerated, and several big iron-ore projects have been proposed. One, at Wabush Lake, calls for the building of a 37-mile spur to the Seven Islands-Knob Lake railway; another, in the Mount Reed area, envisages the construction of a new 185-mile railway north from Shelter Bay on the St. Lawrence paralleling the existing line from Seven Islands.

Though Quebec-Labrador has held the centre of the stage, large-scale iron-ore development has not been confined to this region. The scope of the programme in the Steep Rock area of northwestern Ontario, initiated nearly 15 years ago, has been greatly enlarged in recent years. Not only is the original operation being expanded, but new United States interests are now engaged in preparing for mining the section of the orebody lying under Falls Bay - a dredging job comparable to that entailed in the building of the Panama Canal.

POWER AND "PACKAGED POWER"

In the past 10 years, installed hydro-electric capacity in Canada has increased by more than three-quarters to over 18 million horsepower. Much of the new capacity represents a filling-in process. Into this category for instance falls the power phase of the St. Lawrence Seaway: the International Rapids section, where the power authorities of Ontario and New York are building twin power plants, represents the last major source of hydro-electric power in southern Ontario, now that the Canadian share of the Niagara Falls potential is being fully realized. Development of big hydro-electric sites within reach of

settled areas has taken place elsewhere as well. In fact, projects of this type span the country, from the Bridge River development in southern British Columbia to the smaller Beechwood installation on the St. John River in New Brunswick.

This type of development has been accompanied in recent years by the exploitation of water-power resources in remote areas, the outstanding example being the Kitimat-Kemano project on the northern British Columbia coast. Like Knob Lake on the other side of the continent, it involves the large-scale development of a long-known resource in response to a strong demand for the end-product - in this case aluminum, which is sometimes referred to as "packaged power". The enormous electricity requirements of aluminum smelting, which tend to push the industry toward the frontier away from the competing demands for power, influenced the location of the project; and its remoteness, together with the tremendous cost of developing power at Kemano and transmitting it 50 miles across the mountains to Kitimat, determined the scale. If present plans are realized, the initial smelter capacity of 1954 will have tripled by 1960, to reach 300,000 tons of aluminum annually; installed hydro-electric capacity will have doubled to 900,000 horsepower; and the total cost will approximate \$500 millions.

Like Knob Lake, Kitimat-Kemano has opened up a new region. It is hoped that the town of Kitimat, which already has a population of 13,000, will eventually form the nucleus of an industrialized area. The degree of diversification will, however, depend to some extent on the availability of surplus power, lack of which has been one factor holding back plans for a pulp mill in the district. The success of the Kitimat-Kemano project has inspired proposals for other power and metallurgical developments farther up the Pacific Coast on the Nass River and Taku Inlet.

Rising aluminum demand has also led to a sharp expansion in Quebec of both smelting capacity and the requisite power facilities. The long-established industry in the Saguenay Valley is pushing farther into the north with the building of a million-horsepower hydro plant on the upper Peribonca River (a tributary of the Saguenay) at a site about 100 miles from the Arvida smelters. Another river on the north shore of the St. Lawrence, the Manicouagan, will provide power for a smelter at Baie Comeau being built by a newcomer to the Canadian aluminum industry. This development may be expected to have a sizeable impact on the port of Baie Comeau, until now largely dependent on the operations of a newsprint mill.

In the wilds between Baie Comeau and the Peribonca lies the huge Bersimis River power development, undertaken to meet the growing requirements of Quebec's industry generally rather than to supply electricity for aluminum

smelting. Power from the first of the two plants now under construction, which will have a combined capacity of two million horsepower, is already flowing to Quebec City and Montreal via a 450-mile transmission line, and also to the Gaspé Peninsula by means of 32-mile cables under the St. Lawrence River.

CANADA'S TWO LEADING METALS

A major new nickel-producing area is at last being opened in Canada outside the Sudbury Basin, and new mines to produce copper are strung out across the country. The recently launched Mystery-Moak Lakes nickel project in northern Manitoba involves the development of a newly-found resource - a discovery which resulted, however, from an intensive and lengthy exploration programme. Located 400 miles north of Winnipeg in virgin territory, this \$175-million undertaking will be outranked in nickel output only by the Sudbury Basin. The ore is somewhat higher in nickel content than that at Sudbury, but the copper content is so small as to be almost a metallurgical disadvantage. Two mines are being developed, a smelter and a refinery are to be built, a townsite to accommodate an expected initial population of 8,000 is to be established, railway spurs connecting the mines and linking them to the Hudson Bay line are being constructed, and hydro-electric power is being developed on the Nelson River. The surplus power that will be available may lead to the establishment of a pulp mill, and activity at Churchill on Hudson Bay, now largely confined to grain shipping, may well be stimulated and broadened.

Farther to the northwest near the Saskatchewan border is a smaller nickel (and copper) development, Lynn Lake, completed in 1954, and replacing a copper-zinc mine to the south, which had been worked out. The mining equipment, concentrator and town buildings were hauled 145 miles over the frozen muskeg from the old mining area at Sherridon to the new townsite, and the railway was extended north. In addition, a nickel refinery was built near Edmonton, virtually on top of a natural gas field. The refinery utilizes ammonia extracted from gas, in a revolutionary leaching process, an important by-product being ammonium sulphate, a fertilizer material.

The other major new copper producers are all in eastern Canada. The finding in 1953 of a rich copper-zinc orebody at Manitouwadge, north of Lake Superior, was quickly followed by development. Spur lines from both transcontinental railways were built, a townsite was established and the new mine will begin production shortly. In contrast to the dramatic Manitouwadge discovery, the occurrence of copper (together with some gold) in the Chibougamau area, 300 miles north of Montreal, has long been known. However, the extent of the deposits was not realized until exploration was accelerated following the completion in

TO VISIT CANADA: Canada will be host July 27-30 to Prime Minister Suhrawardy of Pakistan, it has been announced by the Department of External Affairs. After spending a week-end in the Niagara Falls area, the visiting Prime Minister will leave by aircraft for Ottawa July 29, where he will be received by Prime Minister Diefenbaker.

* * * *

PROTECTS POULTRY PRODUCERS: Price support and import control on turkeys and fowl went into effect July 17. Acting Minister of Agriculture D.S. Harkness announced that the Government had acted to protect the poultry industry against falling prices in the face of abundant local supplies and heavy imports.

Turkey prices will be supported at 25 cents per pound live weight delivered Toronto and Montreal for birds of 20 pounds and under with appropriate differentials where necessary for other weights and other market centres. The support price on fowl is 23 cents per pound live weight for birds of five pounds and over delivered Toronto with appropriate differentials for other weights and markets. This is in line with the price previously announced to be effective August 1 by Order in Council of April 15, 1957. The date has been advanced, however, and the support price becomes effective today.

Mr. Harkness announced further that import control would be imposed on both turkeys and fowl effective July 17.

The Minister indicated that the chief reasons for the adoption of this policy are - first, heavily increased production of turkeys in the United States with the resultant increase of imports from that country to Canada, and secondly, that Canadian production, together with imports already made this year and abnormally heavy storage stocks now held in Canada, will fully meet the Canadian demand.

Commenting on the decision Mr. Harkness emphasized that he hoped the action taken by the Government would relieve the pressure on the Canadian turkey and fowl market and enable producers to obtain prices for their product which will obviate the serious losses which otherwise appear inevitable.

* * * *

P.C. GAIN: The Progressive Conservative candidate, Alfred D. Hales, was an easy victor in the deferred Wellington South federal election vote held July 15.

The Wellington South result leaves the party standing as follows:

Progressive Conservative	110
Liberal	106 (1)
C.C.F.	25
Social Credit	19
Independents	2
Ind. Lib.	1
Ind. P.C.	1
Vacant (2)	1

(1) includes one Liberal-Labour member.

(2) By-election to be held September 9 for Lanark, Ontario seat.

FESTIVAL VISITORS: The visit of a group of leading Soviet artists to the Stratford Shakespearean Festival next month has been confirmed by the Soviet Embassy in Ottawa, it is announced by authorities of the Stratford organization. The group will land in Ottawa on July 31 and will arrive in Stratford on either August 2 or 3 after a brief stop-over in Toronto.

During their visit, which will last from eight to ten days, the Soviet artists will attend at least one production of each of the Festival's two 1957 plays - "Hamlet" and "Twelfth Night". They will also be at the C.B.C. Symphony Orchestra concert conducted by Walter Susskind on August 7, and at jazz concerts by Count Basie and Billie Holiday and Ron Collier. The artists will tour the Festival Theatre and the Exhibition Hall and will attend sessions in the drama school with members of the Canadian acting company.

* * * *

SOD TURNING: Transport Minister George Hees officiated Saturday last at a "sod turning" ceremony at the selected site of the new Edmonton International Airport, located ten miles south of that city near the town of Leduc. The "sod turning" ceremony was witnessed by a select group of local dignitaries as well as representatives of the airlines using the airport.

Mr. Hees and party then undertook an inspection trip to departmental installations in Northwest and in the Western Arctic, visiting airports at Fort McMurray, Fort Smith, Resolution, Hay River and Yellowknife on July 21; Norman Wells, Tuktoyaktuk and Aklavik on July 22, and Sawmill Bay and Port Radium yesterday and today. The Minister will be at Beaverlodge and Goldfields on July 25, and Lac La Ronge on July 26, and will return to Ottawa the following day.

* * * *

BRITISH VISITORS: Two members of the Directing Staff and 15 students of Britain's Imperial Defence College will arrive in Ottawa, August 1 to begin a month-long tour of Canada and the United States. National Defence Headquarters announced last week.

Leading the party will be Rear-Admiral W.G. Crawford, DSC, Royal Navy, and Wing Commander P.C. Flether, OBE, DFC, AFC, Royal Air Force, members of the College Directing Staff.

The party will spend two days in Ottawa and will then visit industrial and defence establishments at Morrisburg, Toronto, St. Catharines, Niagara Falls, Sudbury, Port Arthur, Calgary, Victoria, Vancouver, Whitehorse and Fort Churchill. The group returns to Ottawa August 16, flying immediately to Washington for a week's tour in the United States. Returning to Canada August 24, the party will visit Halifax, Sept Îles, Quebec City, Arvida and Montreal. They plan to return to London August 30.

CANADA'S BIG RESOURCE PROJECTS

(Continued from P. 3)

1950 of a road from the Lake St. John district. This road was the only means of shipping ore out until this spring when a new railway line was put in service, giving the area access to the Noranda smelter; another rail line will link Chibougamau to Chicoutimi on the Saguenay in about a year's time.

The Gaspé project is in an area where copper deposits were noted by a French explorer over 350 years ago. Exploitation of the ore, which is low-grade, became economic only after the discovery of additional occurrences in recent years. Development was undertaken in 1953 and production began two years later. The town site of Murdochville was established and a road built to serve the new mine and smelter. A 132-mile transmission line brings in power carried under the St. Lawrence by cable from the Bersimis project already described. Finally, to the south of the Gaspé project are the zinc-lead-copper deposits in the Bathurst-Newcastle area of New Brunswick, where the initial discovery was made in 1952. Production got under way near Newcastle early this year, and output from a larger undertaking at Bathurst, which has been held back by metallurgical difficulties, is expected to begin in 1960.

URANIUM - CANADA'S NEW METAL

Canada's youngest metal-mining industry, uranium, may soon rank first in value of production. Development was undertaken by the government during the war on a small scale at Port Radium on Great Bear Lake, and after the war on a larger scale at Beaverlodge Lake in northern Saskatchewan, where the townsite of Uranium City was built. Barge service connects the settlement during the summer with the railway terminal at Waterways, Alberta, 250 miles to the south. Since the area was opened to private prospecting in 1952, further discoveries have been made and there are now two mills in addition to the government-owned one.

However, Beaverlodge Lake is now quite overshadowed by the Blind River district in Ontario, where feverish exploration activity began in 1953. This area long exploited for its lumber, now accounts for the bulk of Canadian uranium ore reserves and is probably the largest potential producer of uranium in the world. It is estimated that total capital expenditures to bring into operation 11 mines - of which four are now in production - will exceed \$250 millions, not including the cost of establishing the townsite of Elliot Lake, which is being laid out for a population of 25,000. In addition, the establishment of a large plant to supply sulphuric acid to the leaching mills gives the area an important ancillary industry. Farther east along the edge of the Canadian Shield and closer still to the thickly settled areas of southern Ontario is

the country's third-ranking uranium-producing area, Bancroft, where long-known radioactive deposits are now being developed.

PIPELINES ACROSS THE COUNTRY

Impressive as are the projects so far described, none has given rise to repercussions so far-reaching as those touched off by the discovery of oil at Leduc on February 13, 1947. The mushrooming of exploration and development (on which some \$550 millions was spent last year alone), the near-trebling of Canadian oil refining capacity, the reduction in dependence on imported fuel, the rise of a petrochemical industry - these are only a few of the well-known consequences of Leduc. Discussion here will be confined to the big pipeline projects undertaken to meet the overriding problem of oil and gas development - transportation.

In the 10 years since Leduc, a network of over 5,000 miles of crude-oil pipelines has been laid, including 3,200 miles of trunk lines carrying oil from the Prairie Provinces west to the Pacific Coast and east to central Canada. The first major link was the Inter-provincial line, which reached the head of the Great Lakes at Superior, Wisconsin in 1950. It was subsequently extended eastward through the United States to the refining centre of Sarnia Ontario, and a further extension to the Toronto area is now under way. These additions and the continuing expansion of capacity have brought the cost of the project to over \$250 millions. The Trans Mountain line, which began carrying Alberta crude over the Rockies to Vancouver in 1953 and into the United States Pacific Northwest in 1954, plays a vital role in the Canadian oil industry's progress in that it provides the chief export outlet.

In contrast to the reasonably prompt establishment of an oil-pipeline system, the construction of pipelines to market Canada's steadily mounting gas reserves has a variety of reasons got under way only recently. Among these reasons have been the necessity of proving up reserves large enough to assure a continuing supply over a considerable length of time, of securing and building up adequate markets and of mobilizing the large amounts of capital required, not to mention political considerations of one kind and another.

The first gas trunk-pipeline to be undertaken was the 650-mile Westcoast line, through which gas from the Peace River district of Alberta and British Columbia is to begin flowing shortly. Though the pipeline's principal market is to be the United States Pacific Northwest, it will serve the British Columbia interior, and also the Vancouver area (to which a lateral line has been laid). The Westcoast line follows the route of the John Hart Highway, giving the Peace River area a second link with southern British Columbia. (It will have a third link before long when the Pacific Great Eastern Railway is extended from Prince George north to Dawson Creek and Fort St. John).

The northern terminus of the pipeline near Fort St. John is a beehive of activity. A plant to remove the by-products from the gas is being built, and these by-products will be further processed in a refinery and a sulphur plant, also under construction. All told, the Westcoast line and related facilities will involve expenditures totalling some \$275 millions.

It has been calculated that the capital expenditures engendered by the construction of the 2,150-mile Trans-Canada pipeline, which got under way a year ago and is expected to be delivering western gas to Toronto and Montreal in 1958, will approximate \$1 billion. Of this, about \$370 millions will be spent on the line itself, the balance being accounted for by gathering lines, processing plants, and distribution systems. It would be difficult to overestimate the importance of this project. In the west, it will provide a market outlet for ever-increasing supplies of natural gas, now flared or in capped wells, and the by-products will provide the basis for further chemical development. In the east, it will make available an efficient fuel, lessening the area's dependence on imported coal - a consideration of particular importance in northern Ontario where fuel costs are perhaps the highest in Canada.

FARM AREA UNCHANGED: Canada's farm population showed a further marked drop in the period 1951 to 1956, but the total farm area was virtually unchanged, according to a Dominion Bureau of Statistics report based on the national census of 1956. The average farm was substantially larger in size in the five-year period and farm mechanization and electrification went forward at a rapid pace.

Number of persons living on farms, as defined by the Census, showed a decrease of 165,241 or 5.7 per cent from 2,911,996 in 1951 to 2,746,755 in 1956. This was a larger proportional decrease than occurred in the 10-year interval between 1941 and 1951 when the total fell 240,453 or 7.6 per cent. Numerically the decreases in the five years were largest in Saskatchewan (37,242), Quebec (27,297), and New Brunswick (20,938), although all provinces contributed towards the total decrease.

While the total number of occupied farms showed a decrease from 623,091 in 1951 to 575,015 in 1956 or 7.7 per cent, the total area in farms decreased only 0.1 per cent from 174,046,654 acres to 173,923,691 acres in 1956, with the result that the average size of farm for all Canada increased from 279.3 acres in 1951

to 302.2 acres in 1956. The highest average acres per farm was recorded in Saskatchewan (607.3), up 57 acres from the 1951 average. The average size of farm in Alberta also showed a substantial increase during the five-year period from 527.3 acres to 578.8 acres per farm. The average acreage per farm in Ontario increased only 2.2 acres to 141.4 acres per farm in 1956, while Nova Scotia reported a smaller average size of farm in the last census -- 131.7 acres compared with 135.0 in 1951.

An important factor contributing towards the larger farms has been the use of more farm machinery of various classes. This has been brought out in the increases shown for the number of machines on farms in 1956 in comparison to 1951. For example, there were 25 per cent more tractors reported on farms in 1956 than five years earlier, 36.5 per cent more grain combines, 36.5 per cent more gasoline engines, and 41.3 per cent more motor trucks. The number of gasoline engines on farms increased in all provinces except Newfoundland, Prince Edward Island, New Brunswick and Quebec. While the numbers are not large numerically, there has been a tremendous increase in the use of grain combines in the Eastern Provinces.

The number of farms reporting electric power increased by 32.3 per cent from 319,383 in 1951 to 422,604, with increases ranging from 11.6 per cent in Nova Scotia and British Columbia to 140.4 per cent in Saskatchewan.

WITH NATO FLEET: Eight warships of the Royal Canadian Navy will participate in a series of autumn exercises being conducted in the North Atlantic and adjacent waters by NATO's Allied Command Atlantic.

The participating ships will include four St. Laurent class destroyer escorts, the St. Laurent, Assiniboine, Ottawa and Saguenay, and four Tribal class destroyer escorts, the Haida, Iroquois, Micmac and Nootka. Aircraft of the RCAF Maritime Command will also participate in certain of the exercises.

Admiral Jerauld Wright, USN, Supreme Allied Command Atlantic for NATO, announced recently that the exercises are a part of the regular cycle of NATO training and will involve fleet operations, submarine warfare, anti-submarine warfare, mining and minesweeping operations, and convoy escort. They will take place during September, October and November.

Canadian warships will be assigned to the various exercises as they are required, but not all will participate in any one exercise at the same time.