teaching of the brotherhood of man becomes imperative. Community leaders are economic, social and political democracy the world over as the only certain way to unhampered production, unrestricted exchange of goods and services, food for the hungry of body and mind, final defence against atomic and bacteriological warfare.

Before the internal combustion engine took to wings that soared, and spawned jet propulsion in the stratosphere, men sought safety behind broad rivers, mountain peaks and billowing seas. Tomorrow's security demands removal of outmoded emotional and mental barriers, a task facilitated, perhaps, for the people of a province whose pencil-on-paper boundaries have no basis in physical barrier.

The Epic of Canol

by RICHARD FINNIE

The CANOL PROJECT was one of the most stupendous construction feats of its kind ever undertaken. It was also one of the least understood and most maligned. For two years it involved the labours of thousands of soldiers and civilians whose activities ranged over hundreds of thousands of square miles in northwestern Canada and Alaska.

Canol—short for Canadian oil—was conceived by the United States War Department in the spring of 1944 as a device to help feed the Alaska Highway and its airports from the handlest local source. That source was Norman Wells in the District of Mackenzie, the most northerly producing oilfield in North America.***

When work was beginning on the Alaska Highway, Lt.-General Brehon B. Somervell, then Chief of the U. S. Army Service Forces, instructed an assistant to look into the strategic possibilities of Norman Wells. The assistant conferred with some petroleum experts and then submitted a brief memorandum to the General, recommending that a crude-oil pipeline be run in a box-like to Whittier, Alaska, centrally located on the Alaska Highway, and that a refinery be erected there to handle the 3,000 barrels of fuel per day that the Norman field was believed to be capable of producing. The memorandum was approved as written, and the project was turned over to the Chief of Engineers for execution.

That was at the end of April, 1944. Almost

***See "The Canol Project" by Oliver B. Hodges, Canadian Geographical Journal, November 1948.

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immediately the Imperial Oil Company was enlisted to step up the production of Norman Wells, and within three weeks a powerful combination of American contractors known as Bechtel-Price-Collman was given the job of building the pipeline and the western facilities. B.P.C. invited me to fly to Edmonton to help them get started. Later I was taken over by the Corps of Engineers and saw the project through to the end. I never lost my enthusiasm for it, nor my belief in its basic soundness. I hoped, of course, that it would contribute to the war effort, but I felt that ultimately it would make a greater contribution, in one way or another, to the postwar development of northwestern Canada.

At the time Canal was begun, our situation was not a happy one either in Europe or the Pacific. There was an imminent threat to our coast and to Alaska, and indeed the Japanese soon had troops in the Aleutians. The sea lanes to Alaska might be closed, and with a shortage of frighters and tankers it was imperative that an overland route to Alaska be opened up and given an assured fuel supply. All that was done, and with amazing speed.

Through supplementary Canal pipelines that were laid from skagway to Whitehorse and from Watson Lake to Fairbanks was pumped gasoline that fuelled not only the ground vehicles and aircraft engaged in local operations, but also sources of American lend-lease fighters and light bombers that were ferried to the Soviet Union for use against the Germans on the eastern front. The Alaska Highway and its airports were nowhere secret. From the very beginning their construction and operation were reported in the newspapers and the publicity was for the most part favourable. The Alaska Highway was quite properly hailed as a great construction triumph, aiding in the defence of this continent.

In 1942, when the Canal Project, despite its integration with the Alaska Highway, was kept officially secret in its entirety for a year, and partly secret for some time afterward, but unlike the Manhattan Project, it could not be kept behind locked doors; it was too widely out for the project to be total area of the Dominion. Before the war there was no road in the Northwest Territories longer than eight and a half miles. Today, in the Mackenzie District, there are eleven full-fledged airfields and several emergency landing strips, all but one of which were built for the Canal Project. Today, in the Mackenzie District, we have more than a thousand miles of overland roads, and in northern Alberta, British Columbia, and the Yukon Territory hundreds of miles more of them, all pioneered for the Canal Project. We also have new camp sites and town sites, oil wells, pipelines and telephone lines, and other facilities. In connection with the Canal Project many thousands of square miles of hitherto unknown country were explored and opened up. Where there were no deposits they may contain are now available as never before.

On the heels of the Canal constructors came naturalists and geologists of the Canadian Government and of private organisations, and last spring over some of the roads of the project rolled the snowmobiles of exercise Musk-oxen. I hope that these roads will be maintained and improved so that other vehicles may use them—the trucks and cars of prospectors, settlers, and tourists. There is more awe-inspiring scenery, mile for mile, along the Canal Road from Norman Wells over the Mackenzie-Yukon divide toward Whitehorse than along the three-times-longer Alaska Highway, which has some spectacular vistas of its own. Besides its material accomplishments, Canal provided an education in modern pioneering methods; it was a colossal practical experiment in sub-Arctic transportation and construction, meeting and solving problems of permafrost (permanently frozen soil), and cold-weather operation of equipment on a vast scale.

Although Canal was pre-eminently an American undertaking, Canadian companies and Canadian personnel also had to do their share. In the construction phase (e.g. Imperial Oil, Hudson's Bay Company, Northern Transportation Company, Canadian Pacific Airlines) and Canadians as individuals had ample part in, the SMA, and the WBN, to do with its success.

**The Epic of Canal**

While the labour was predominantly American, Canadian surveyors, engineers and transportation experts played key roles in exploratory work, in the locating and building of roads and airfields, and in the moving of freight. It was in June, 1942, that the first flight was made across the unexplored Mackenzie-Yukon divide between Norman Wells and Whitehorse to seek a feasible route for a road and pipeline; and I had the privilege of helping to arrange that expedition and being a member of it. Twenty months later, in February 1944, after having followed every phase of the project in the field, as northern adviser and historian to the Army and the civilian constructors, I had the satisfaction of witnessing the "golden weld"—the final tie-in of the two ends of the main Canal pipeline. Not only was the main canal, but the whole project was completed, but there was an all-weather service road and telephone line accompanying it for 260 miles between Norman Wells and a point on the Alaska Highway near the south end of Whitehorse; there was a refuery at Whitehorse; there was a thousand-mile series of supplementary pipelines radiating from Whitehorse to the southeast, to the northwest, and to the south, besides pumping stations, tank farms, immemovable camps, hundreds of miles of access roads, a dozen airfields, and a major oilfield development. It was an extraordinary achievement.

No one should begrudge the fact that the war ended without need of petroleum from Norman Wells to repel an attack on the Alaskan mainland, or to help fuel a thrust at Japan through Alaska; various circumstances, including the atomic bomb, took care of that. But it was good insurance nevertheless, and Canal pipelines did play an important part in the wartime operation of the Alaska Highway and its airfields. Incidentally, the Norman oilfield proved capable of producing far more than the original estimates, and an average of 3,000 barrels per day was produced over about seven times that amount if necessary. Canal was not only one of the war's most unusual construction projects, it was also one of the most enduringly beneficial.

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