NATURAL RESOURCES

Oil in Northern Alaska

Vast reserves of oil and natural gas lie under the permanently frozen ground of northern Alaska, about 150 miles from an ice-free coast.

➤ HUNDREDS OF millions of barrels of oil and large amounts of natural gas are under the ground in northern Alaska, SCIENCE SERVICE learned.

The recent drilling of 31 test wells has shown that the area north of the Brooks Range up to the northern coast of Alaska may well prove to be one of the great oil basins on American soil. Extensive work has been done in the last four or five years by both the U. S. Geological Survey and the Navy on what was already recognized, superficially, as promising prospecting territory.

However, you had better not pack your prospecting instruments and set off up the Alcan Highway tomorrow. All of the possible oil fields are well within the Naval Petroleum Reserve Number Four, off limits to private development.

Estimates of the amount of oil and natural gas in this basin are based on wells which have actually produced both products. Measurement of the rate of production of these wells enables geologists and prospectors to make a rough guess as to the size of the oil fields below the wells.

One indication of the worth of the oil basin is to compare it with the rich new Alberta, Canada, fields. It was not until 215 wells were drilled that oil was actually found there. On the arctic slope of Alaska, prospectors found one large oil field with four wells at Umiat, one small field with two wells at Simpson, one well with unknown reserves at Fish Creek and five gas wells in three fields. All this was done by drilling only 31 test wells, as contrasted with the 215 in Alberta.

The Umiat field seems to be the best discovered so far. On the basis of oil already produced there, geologists estimate that 30,000,000 to 100,000,000 barrels of oil are in that field alone.

The most promising area, from a geological standpoint, has not yet been test drilled. This is in the foothills, just to the north of the Brooks Range and south of the area where the 31 test wells have been drilled. If test wells, soon to be drilled there, live up to their promise, experts say, there will be fields in the foothills bigger even than Umiat.

Despite the cold and the permafrost, experts believe this oil will be relatively easy to get at. In such temperatures, the "pour point" of the oil is the important factor. The oil in Umiat is still pourable down to minus 15 degrees Fahrenheit. That at Simpson is not so good—its pour point is plus 25 degrees.

The wells are generally 150 miles from an ice-free coast and pipe lines could easily be built for this short distance.

When the fields in this vast area are all delineated, experts believe, hundreds of millions of barrels of oil will be added to the nation's 20 billion barrels of oil reserve already discovered.

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RADIO

Some Radio Storms Have Well-Defined Centers

➤ WHEN SHORT-WAVE signals on your radio are disturbed by weak signals and fading, the chances are that radio hams and others listening to short-wave broadcasts as far as a thousand miles away likewise are having trouble with reception.

Some radio storms have well-defined centers 1,200 to 2,000 miles across, R. S. Lawrence of the National Bureau of Standards' Central Radio Propagation Laboratory has found. Such areas of disturbed reception move across the North American continent, but at an unpredictable rate and direction, he reported.

Contour maps showing the reflecting power of the "radio roof" 200 miles above the earth during four recent radio storms were displayed by Mr. Lawrence at the joint meeting of the International Scientific Radio Union and the Institute of Radio Engineers in Washington.

These contour maps, perhaps the first ever based on radio disturbance, showed the density of the atmosphere's reflecting layer at two-hour intervals. The usual daily variation between day and night was eliminated from the map by actually plotting how far the density deviated from the monthly average at that particular time of day.

The atmosphere's reflecting power at 13 stations in North America was considered in making the contour maps. The stations ranged from Trinidad and St. Johns in the east to San Francisco and Prince Rupert in the west. The North American continent was chosen because of the existence of this group of evenly-spaced stations and the ready availability of the data.

"The very fact that smooth and regular contours can be drawn on these maps," Mr. Lawrence stated, "indicates both that the data are accurate enough for the results to be significant and that the storm characteristics are not so highly localized as to change completely in the distance between observation stations."

Science News Letter, May 3, 1952

FIRST TIME ALOFT—The new, eight-jet YB-60, built by Convair, is shown as it took off on its first test flight. The swept-wing bomber, an experimental all-jet version of the B-36, flew for one hour and six minutes. In this flight picture, the only one cleared for release by the U. S. Air Force, the landing gear has been eliminated by retouching.