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Mine Rescue Team from United Keno Hill Mines wearing Draeger BG 174 breathing apparatus represented the Yukon Territory in the 2nd Canadian Mine Rescue championship competition at Penticton, June - 1968.

In the Northwest Territories, 90 disabling injuries were reported. Accident frequency decreased from 39.4 in 1967 to 32 in 1968 while the accident severity increased from 3,125 in 1967 to 7,736 in 1968. In the Northwest Territories "fall of persons" and "caught between two objects" were the two chief causes of accidents each accounting for 16.6% of all accidents reported.

There were three fatal accidents in 1968 compared to only one in 1967. On December 2, a drift miner was instantly killed when he was crushed between a derailed car and the drift wall on the 4900 level at Con Mine. Over-exertion and CO poisoning proved fatal to a Safety Supervisor during rescue operations at Giant Yellowknife Mines on January 10, 1968. At Canada Tungsten on July 24, 1968, a mill superintendent died instantly after falling from an H beam in the mill some 15 feet onto the cement floor of the mill building.

Geological Evaluation Unit

The function of the Geological Evaluation Unit is to provide assistance in the various stages of exploration, development and production of mineral resources in the Northern Territories. The unit is composed of an evaluation engineer located in Ottawa with supporting technical field staff.

The responsibility lies with the unit for evaluation of all geological, geophysical, geochemical and other like work submitted as representation work in respect of a mineral claim. The reports submitted under the Prospector's Assistance Program are reviewed. The applications for assistance under the Northern Mineral Exploration Assistance Program are technically evaluated and the same programs are reviewed for eligibility on completion of the work.

The unit maintains a library of technical reports submitted as representation work and as work programs under the Northern Mineral Exploration Assistance Program. These reports are available for perusal by the public once the confidential period is terminated. This unit maintains liaison with other government agencies at the Federal and Provincial level and with Industry in connection with advances in the geological field.

DEVELOPMENT ANALYSIS SECTION

This section initiates, implements and maintains policies and development programs and projects designed to stimulate the exploration for non-renewable resources in the Yukon and Northwest Territories.

The prime activities have been concerned with carrying out financial and engineering evaluations of resource developments in the Yukon and Northwest Territories where

government assistance has been requested and in administering programs designed to encourage resource development in the north. Included in these activities are the following:

Pine Point Smelter Study

This study was initiated as a result of requests from Pine Point Mines Limited to export large quantities of lead and zinc concentrates. It was considered that the possibility of processing these concentrates in the Northwest Territories should be investigated thoroughly in view of the benefits that such an industry would have to the economy of the north. The study has now been completed and a thorough assessment made of the conclusions and the socio-economic benefits which would result from a smelter. Reports will be made public early in 1969.

Anvil Mining Corporation Limited

Detailed studies of the Anvil Mining Corporation Limited mining project in the Ross River area of the Yukon were completed. An agreement between the Company and the Government was negotiated whereby the Government would provide assistance in the construction of roads, bridges, power, communication and townsite facilities. The Company, on the other hand, agreed to employ specified numbers of Yukon residents and also, subject to certain conditions of profitability, to build a smelter within eight years of coming into production. The mine is expected to come into production in late 1969.

Baffinland Iron Mines Limited

In view of present Government budgetary restrictions, further work on this project was suspended temporarily. This Company owns a large, high grade iron ore property on northern Baffin Island and had requested Government assistance of approximately \$32.0 million for the provision of a railroad, roads, airstrips, harbour facilities and a townsite. An interdepartmental task force was established to study the project and engineering and financial studies were carried out.

Roads Program

The section was represented on both the Interdepartmental and the Branch Committees on Northern Roads. Financial assistance for road construction was recommended for Mount Nansen Mines Limited, Anvil Mining Corporation Limited, Arctic Mining and Exploration Limited, and New Imperial Mines Limited. In addition, background information was provided to the Committee on proposed area development roads in both the Yukon and Northwest Territories.

Airstrip Program

The section was represented on the Northern Airports Advisory Committee. Financial assistance for airstrip construction was recommended for Pacific Giant Steel Ores Limited, Great Bear Trophy Lodge Limited, and Glenlyon Mines Limited.

Surveys and Mapping Co-ordination

The section assumed the responsibility to co-ordinate the Department's requirements for control surveys and mapping with the Department of Energy, Mines and Resources.

INCENTIVE PROGRAMS

Prospectors' Assistance Program

In both the Yukon and Northwest Territories, a combined amount of \$60,000 is granted to aid prospectors in their search for mineral deposits. A prospector may receive up to \$900.00 each year to help finance his prospecting venture. The program has been well received since its introduction in 1962 and was instrumental in the successful location of several mineral discoveries.

During 1968, the entire amount of \$60,000 was committed. Fifty-four prospectors in the Northwest Territories and thirty-eight in the Yukon Territory participated in the program this year.

Northern Mineral Exploration Assistance Program

This program is designed to encourage mineral exploration activity in the Yukon and Northwest Territories by providing grants of up to 40 per cent of the cost of approved exploration programs for minerals or oil and gas in the north. One hundred and eight corporate applicants have applied for assistance in one or more programs of exploratory work. Sixty-six applications have been approved and a total of \$1,487,500 has been paid in grants leaving an outstanding commitment of \$1,992,450. Moreover, payments of \$5,012,500 have been made towards a large program of oil and gas exploration in the Arctic Islands.

Northern Roads Program

The Northern Roads program which was approved by the Federal Government in 1965 called for an annual expenditure of \$10 million for the following 10 years in both territories. It is the first phase of a long-range 20 year program designed to bring all potential areas of resource development within 200 miles of the nearest permanent road. The policy was designed to be sufficiently flexible to allow revisions in priorities from year to year to keep pace with resource development. It also allowed for a shift in

volume of construction from one Territory to another, depending on the requirements and based on northern territorial development.

Instead of placing emphasis on resource potential alone, the road program is based on a multiple concept having as its objective the creation of a broad network of road-loops to serve all needs.

The total estimated Federal expenditure on northern roads for 1968-69 will be \$8,757,600 and the total mileage of new and reconstructed roads was 120 miles, 45 miles in the N.W.T. and 84 in the Yukon.

The following is a list of projects conducted during the year under this program.

Northwest Territories

Mackenzie Highway—N.W.T.I.

In March 1968, a 2-year contract was awarded to Western Construction and Lumber Co. in the amount of \$3,086,415 for clearing 119 miles of road right-of-way and building 62 miles of subgrade. This is a further extension to the 50 miles completed in 1967-68 and leaves another 10 miles of clearing and 67 miles of subgrade to be constructed in order to reach Fort Simpson. Work in 1968 progressed favourably.

Yellowknife Roads

A two-year contract in the amount of \$446,801 was awarded in July 1968 to Freeway Construction (Northern) Ltd. for construction of about 6 miles of connector roads between the Yellowknife Highway, Ingraham Trail and the town of Yellowknife. Work is progressing favourably.

General Surveys for Future Development Roads

Work in excess of \$300,000 was completed in 1968 and consisted of: 30 miles of ground location survey on each of the Fort Simpson-Fort Liard and Fort Smith-Fort Reliance routes; air photograph and mapping on the Fort Smith-Fort Reliance route and the Ingraham Trail. Contracts were also entered into for photography and mapping of the proposed Mackenzie Highway in the Inuvik area. Preliminary reconnaissance surveys were also carried out on a possible route from Rae to Coppermine and on a number of other minor projects.

Yukon

Ross River — Carmacks Road YT 9

The road from Watson Lake to Ross River to Carmacks has now been designated the Campbell Highway by the government of the Yukon.

The two-year contract in the amount of \$2,133,752 let to General Enterprises Limited in October 1967 for construction of a 42-miles central section of this route was completed in 1968 except for minor clean-up work. The other road contracts mentioned in the 1967 report are now completed. Contracts were let in 1968 for construction of bridges over Bearfeed and Drury Creeks and this work was about 75% completed. The Ross River—Carmacks Road was opened to traffic in the fall of 1968.

Whitehorse—Keno Road

This road now forms part of a route designated by the Yukon Government as the *Klondike Highway* which, when completed, will extend from Skagway through Whitehorse, Carmacks, Stewart Crossing and westward to Dawson.

In 1968, a one-year contract in excess of \$600,000 was completed with the upgrading of a 32-mile section between Whitehorse and Carmacks to trunk road standards. It is proposed to complete the upgrading of the road between these two points in 1969.

Stewart Crossing—Dawson Road

This road is now part of the newly named Klondike Highway. Work in the amount of some \$385,000 was expended in 1968 to upgrade various sections of this road. Main emphasis was in the Dawson area where the road was reconstructed from the Ogilvie Bridge to the ferry landing. Several smaller bridges on the road were also replaced.

Boundary Road

A contract in the amount of \$280,150 was awarded in May 1968 to Don Gordon Ltd. for gravel surfacing and stockpiling on this road. The work has been completed.

Canol Road

Work in excess of \$200,000 was carried out in 1968 in reactivating the Canol Road from Ross River northward to Sheldon Lake, a distance of some 80 miles. This work was completed as schedule.

Access Roads

Anvil Mines Access Road

Under terms of the Northern Roads Policy, Anvil Mines Corporation began construction of an 18-mile Permanent Access Road from a point on the Ross River—Carmacks road approximately 28 miles west of Ross River, northerly to the site of their mine. This work included a major bridge over the Pelly River. Approximately \$1,000,000 was expended in 1968 on the project which is now about $\frac{2}{3}$ completed.

An initial Access road, under the Northern Roads Policy, was started south of Carcross by Venus Mines Limited in 1968. About 4 miles of the 14-mile road was near completion and several more miles roughed in before work shut down for the winter.

The Mount Nansen Mines Access Road, which lies west of Carmacks, was completed to Initial Access road standard although it was originally intended to build it to Permanent Access road standard. *The Arctic Gold and Silver Mines road* south of Carcross was completed in 1968 to Permanent Access road standard under terms of the Northern Roads Policy.

Surveys for Future Development Roads

Photography and mapping were completed on the proposed Dempster Highway where some recent route revisions had been made. Ground location surveys were also carried out on the existing Dempster Road, mile 0-78, which is due for reconstruction at some future date. Miscellaneous surveys were carried out on a number of smaller projects at various locations.

Tote Roads

In addition to road and airstrip assistance which is administered by the Federal Government there is available in each Territory \$100,000 each year for the construction of

low class roads to provide temporary seasonal or year-round access in connection with any natural resource development project. The program is administered by the Commissioner of each Territory. Construction is the responsibility of the individual or company concerned and costs incurred for such roads may be shared up to a maximum of 50% of the cost.

During 1968 in the Northwest Territories, twelve applications for tote road assistance were approved covering oil, mining, agriculture and tourist enterprises. Funds allocated under contract amounted to \$94,700.00 to construct 835 miles of year-round road and 420 miles of winter roads for a total of 1255 miles. In the Yukon, 26 applications were approved for the construction of 342 miles of tote roads. Funds allocated under contract were \$94,197.00.

Assay Services

The Government Assay office at Yellowknife carried out about 2,400 assays during the year. Free assays performed either under the provisions of the Prospector's Assistance Program or as provided for under the Canada Mining Regulations, amounted to 1,000 determinations at a value of \$2,400.00. In the Yukon Territory, 50% of the cost of ten assays per prospector, per year, is paid by the Federal Government and during 1968, approximately 650 assays were paid for at a cost of \$2,212.25 to the Federal Government.

