

Bulletin

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ARCTIC RAILROAD FEASIBLE

Transport Minister Don Jamieson announced recently that the Canadian Institute of Guided Ground Transport at Queen's University, Kingston, Ontario, had completed a report entitled *Railway to the Arctic* - a preliminary examination of the technical feasibility and cost of using a railway to move oil over the permafrost region on its way from Prudhoe Bay on the Alaskan North Slope to North American markets.

The railway feasibility study received funding from the Ministry as one part of a continuing examination of alternatives to pipelines, including unit trains, large aircraft, icebreaking tankers, submarines, semi-submersibles, and other transport modes. The CIGGT study suggests that a railway to carry oil at the volumes projected appears to be

technically feasible, and examples of freight rates for certain economic assumptions are calculated.

EQUIPMENT, ROUTE AND COST

The study suggests that the railway would require some 360 locomotive units and 11,000 tank cars of 94-tons capacity each. Twenty of 168-car trains, each about two miles long, pulled by five locomotive units, would move the design volume of two million barrels of oil a day. The proposed railway would be high-standard double track, with an advanced signal-control system along the 1,240-mile route. Of the three routes studied, the report favours one that would proceed from Prudhoe Bay, along the Arctic north slope to the Mackenzie Delta and then south-east along the Mackenzie River Valley to a point near the Trout River in the Northwest Territories. From there, the oil is assumed to move by pipeline, since the study was primarily concerned with the problem of transporting oil over permafrost. The study estimated a capital outlay of about \$2.4 billion to construct the railway, with the total debt rising to about \$3 billion before receipt of revenues. Computed tariffs range from 50 to 84 cents a barrel for 1,240 miles, depending on assumptions.

MANPOWER

Mr. Jamieson stated that the CIGGT study estimated that the railway would require an average of 5,000 people for construction over a five-to-seven-year period. In operation, the railway would directly employ some 4,600 people in the NWT, Yukon and Alaska. Indirect, construction and operations employment could generate up to 50,000 jobs in Canada, as well as an equal number in the United States. Other parts of the study outline the capacity of the railway to carry goods other than oil southward and to carry traffic into the North. Consideration is also given to environmental problems; the study says that railway interaction with permafrost can be negligible

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if tested construction techniques are employed and that interaction with wildlife can be minimized by careful route selection.

The Transport Minister explained that the Canadian Institute of Guided Ground Transport came into being formally in May 1970. Its sponsors are the Ministry of Transport, Canadian National Railways, Canadian Pacific Limited and Queen's University. Its goals are to carry out investigations and research - short-term and long-term - in order to improve Canadian guided ground-transportation systems, and to develop a university interest in transportation among graduate and undergraduate students. *The Railway to the Arctic* is the first major study to be completed by the Institute.

NATO FORCE GETS NEW 'COPTERS

The Canadian Forces have retired their last remaining operational CH-112 *Nomad* helicopter, known as "Old 280", at a ceremony in the Black Forest area near Lahr, West Germany.

The event was marked by a "fly-past" and "roll-past" at the Royal Canadian Dragoons lines in Lahr, with the commander of the 4th Canadian Mechanized Battle Group, Brigadier-General Jacques Chouinard, taking the salute.

The *Nomad*, or *Hiller*, as the Canadian Forces called the machine, first entered service with the Canadian Army and the Royal Canadian Air Force in 1961. The Canadian Infantry Brigade Group in Soest, West Germany, received nine of them in 1962.

The Canadian Army used 25 machines in the reconnaissance and liaison role, while the RCAF used its three for training purposes.

The light three-seater helicopter was powered by a *Lycoming* air-cooled six-cylinder engine, had an endurance of 2½ hours and a maximum speed of 87 knots. By comparison, its replacement, the turbine-powered four-seat *Kiowa*, has an endurance of 3½ hours and a top speed of 120 knots.

For Captain Peter Dudley of the Fort Garry Horse and Warrant Officer Richard Middleton, who led the fly-past in "Old 289", the event brought back memories. Ten years ago, in Soest, Lieutenant Peter Dudley flew the then new 280 and Corporal Middleton serviced it.

SEARCH FOR OLD SHIPS OF WAR

Complex electronic devices will be used this summer to seek the resting-place in Lake Ontario of two American naval vessels of the War of 1812.

The search, to be led by Dr. Daniel A. Nelson of St. Catharines, Ontario, will be conducted under the auspices of the Royal Ontario Museum. Dr. Nelson, a research associate of the Museum, had had extensive underwater experience. The headquarters ship,

the *Porte Dauphine*, has been lent to the expedition by the Great Lakes Institute.

The warships, *Hamilton*, of ten guns, and *Scourge*, of nine guns, sank in a storm while manoeuvring to engage a British flotilla. Since the precise location of the wrecks is not known, a broad expanse of Canadian waters at the western end of Lake Ontario must be searched. Because of the extent of the area, and depths of up to 300 feet, no diving will be attempted. Instead a magnetometer will be used.

Towed astern of the search vessel with the sensor close to the bottom, the magnetometer is an instrument that reacts to the presence of iron and registers its findings as a "print-out" on deck. The instrument and the technique were perfected by Dr. Nelson during submarine searches in the British Virgin Islands.

When the wrecks are discovered they will be examined by means of underwater television cameras to determine the possibilities of raising them whole.

The expedition, which is likely to produce results of exceptional historical importance, is supported by government grants, including one from the Historic Sites Board. Extensive co-operation has also been received from the Canada Centre for Inland Waters, Barringer Research Ltd., Hunttec 70 Ltd., and Comdev Marine Ltd.

NORTHERN RESEARCH GRANTS

Grants totalling \$430,000 will be made available during 1972 and 1973 for northern scientific research and training, it was announced recently by Mr. Jean Chrétien, Minister of Indian Affairs and Northern Development.

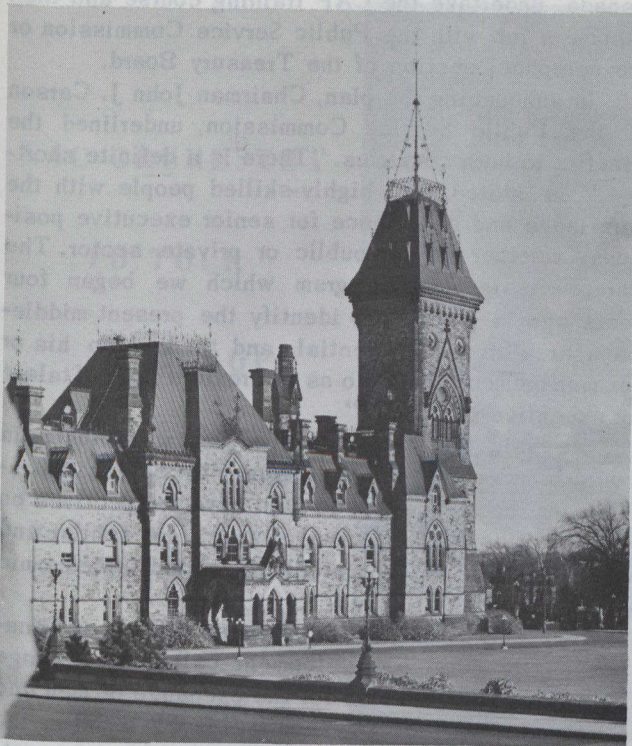
The grants program is administered by the Northern Science Research Group for the Northern Development Program of the Department.

The 1972-73 grants represent an increase of \$50,000 over those available for 1971-72, and include \$300,000 awarded under the program of general grants to assist in the training and education of scientists for northern work.

TO WHOM AWARDED

The grants for northern studies are awarded to committees and institutes for northern research at 12 Canadian universities, and to the Arctic Institute of North America, which provides facilities and other support for scientific research in the North. Also included in the program is a grant of \$30,000 to the Arctic Institute of North America to assist in the publication of the *Arctic Bibliography*, a unique reference work for northern scientists.

Additional funds totalling \$100,000 also are provided for special grants to universities and research institutes to investigate problems of particular interest to the Department.



Canada's East Block

EAST BLOCK OPEN TO PUBLIC

The East Block of the Houses of Parliament, one of Canada's oldest buildings, opened its doors to the public on July 1.

The Prime Minister said that the Government's decision to open the building to public view was in response to a request from the Heritage Committee of the National Capital, which is helping the Privy Council Office organize tours of the building – the scene of Government decision-making and headquarters of Government leaders since Confederation.

On Saturdays, Sundays and holidays, to avoid interfering with the conduct of Government business, visitors will be permitted into the Privy Council Chamber, which has been restored to the appearance of its early days, the Privy Council anteroom, the Prime Minister's office, which has been occupied by almost all Canadian Prime Ministers, and the office of the Secretary of State for External Affairs – once the office of Sir John A. Macdonald.

Often called "the most historic building remaining in Canada in a political sense", the East Block had previously only been open to the public for a brief period during centennial year.

INTERVIEW WITH DISCOVERER OF INSULIN

Toward the end of 1921, the persistent interest of a young Canadian surgeon, Frederick Grant Banting, in research on diabetes was finally rewarded. With his younger collaborator, Charles Herbert Best, he isolated insulin in January 1922, and used it successfully in the treatment of patients. One of the greatest and most dramatic discoveries of modern medicine, it completely transformed the outlook for the majority of sufferers from diabetes.

In a recent interview, Dr. C.H. Best, professor and head of the Banting and Best Department of Medical Research, University of Toronto, since 1941, recounted how he had set out to track down the mysterious substance now known as insulin.

"My work – that is, Fred Banting's and mine – began in May 1921," he said. "It was all initiated by an idea which Banting had that if we tied up the pancreatic ducts, the enzyme-producing cells would degenerate and thus permit the extraction of a hypothetical active principle. This idea had been worked on previously; happily we didn't know about it at the time and so the work was started. It was a combination of surgery and chemistry, and we had our disappointments, but looking back on it, we were fortunate in soon being able to get some positive results."

Best was then only 22; he feels that, scientifically, it was the most exciting period of his life.

Talking about the actual genesis of the dis-

covery, Dr. Best said the idea of starting it was really Fred Banting's. "He was preparing a lecture on diabetes and he came across a passage in a clinical article where, although a patient had gallstones blocking the pancreatic duct, he had not become diabetic. So that put the idea in Fred's mind. But he was a surgeon, and so needed somebody else with experience in biochemistry and physiology to help him. I had just graduated with a degree in those two subjects, and I was interested in diabetes. So that was the way the whole thing started."

Thinking about the order of importance of the difficulties which had to be overcome, Dr. Best said:

"Well, I think that previous people who had tried, and some came very near to discovering insulin, were faced with two main difficulties. First, the lack of experience in surgery, and that Banting certainly had; and then the fact that until almost 1921 no micro-methods for determining blood sugar, ketone bodies and other constituents of the blood had been worked out. We were immensely aided by the fact that the chemists had provided us with extremely good tools. Finally, I think a lot of people were also inhibited by previous failures, and you had to be young and uninhibited. I think, to overlook those things and still go ahead with the hope, almost with the expectation of being successful."

Dr. Best was asked if he had felt a major breakthrough was in view.

He said he thought the great breakthrough would be "when we are finally able to know exactly how insulin acts".

On the clinical side, he said there remained a major gap. In spite of knowing a great many things about diabetes, no one yet knows the real cause of the disease.

"If the mechanism of the action of insulin could be completely elucidated and if we could find the exact cause of diabetes that would represent two major breakthroughs," he said.
(From *Canada's Health and Welfare*, Vol. 26, No. 2, 1972.)

SOVIET OFFICIALS VISIT CANADA

Nine high-ranking Government officials from the U.S.S.R. arrived in Ottawa on May 29 for a ten-day tour as guests of the Canadian Government.

Mr. Jean Chrétien, Minister of Indian Affairs and Northern Development, stated that the group, led by I.T. Novikov, Deputy Chairman of the Council of Ministers of the U.S.S.R. and Chairman of the State Committee on Construction of the U.S.S.R., had come to Canada at his invitation, delivered personally to Mr. Novikov last July. Mr. Chrétien and a party of Canadians were in the Soviet Union as guests of the U.S.S.R. Government. In Ottawa the group was joined by B.P. Miroshnichenko, the U.S.S.R. Ambassador to Canada.

Mr. Novikov and his party were primarily interested in construction projects and, as a consequence, their itinerary covered certain areas in the North, and parts of Southern Canada.

After two days in Ottawa the Soviet delegation, accompanied by officials of the Department, visited Yellowknife, Inuvik, Whitehorse, Clinton Creek and some cities in Southern Canada before returning to Ottawa on June 7.

CANADA-AUSTRALIA JOB SWAP

Canada and Australia have agreed to exchange federally-employed "managers with executive potential".

The exchanges will take place under the Public Service Commission's Career Assignment Program, and is the first such arrangement with another country. The CAP program, which started in 1968, has so far involved various levels of government, as well as the private sector, in Canada.

In the exchange with Australia, which will probably take place within six months, an officer on the staff of the Public Service Commission of Canada who has graduated from the three-month CAP management-training course will take a job with the Australian Public Service Board. The Australian public service officer in the exchange will, on arrival in

Canada, undertake the CAP training course and then assume a job with the Public Service Commission or the personnel section of the Treasury Board.

In announcing the plan, Chairman John J. Carson of the Public Service Commission, underlined the benefits to both countries. "There is a definite shortage," he stated, "of highly-skilled people with the knowledge and experience for senior executive positions, whether in the public or private sector. The Career Assignment Program which we began four years ago is planned to identify the present middle-manager with high potential, and to develop his or her management skills so as to create a pool of talent for executive positions."

He said that the exchange plan with Australia would broaden the whole program "by making it possible for those involved to gain new perspectives on two countries whose federal systems are similar and where there are common problems related to economic development".

The Career Assignment Program is part of Canada's public service development called Interchange Canada. It also provides for the exchange of men and women already at the executive level between the federal public service and other levels of government, universities, international organizations, and the private sector.

Mr. Carson worked out the exchange with the Australian Chairman of the Public Service Board during a recent trip to discuss common problems. When in Canberra, he addressed the Royal Institute of Public Administration.

YOUTHS TO STUDY YOUTH CULTURE

Some 250 students, graduates and undergraduates in social sciences, statistics and linguistics, are being hired again this year by the Department of National Health and Welfare, under the Student Summer Employment Program, to continue studies of the "youth culture". They will work with the Welfare Research Division of his Department, Health and Welfare Minister John Munro has announced.

The aim of these student workers will be to collect data on attitudes, aspirations, frustrations, language and music. The results are to be used in policies and programs for which Mr. Munro is responsible.

Field workers must seek "informed consent" from those they interrogate. This means that a researcher introduces himself and explains the aims of the study that so his "respondent" can decide whether to provide the information. Names, addresses or any other type of identification will not be recorded, to assure the respondent's anonymity. In keeping with the study's purpose, field-workers are not permitted to inquire into or record information on illegal behaviour. The data they collect may be used to further their academic careers.

NAC ORCHESTRA
TO TOUR
EUROPE



Members of the National Arts Centre Orchestra.

The Orchestra of the National Arts Centre, Ottawa, under the direction of its conductor Mario Bernardi, will undertake its first European tour in May and June 1973, making appearances in Britain, France, Poland, and the Soviet Union.

Formed in September 1969 as the resident ensemble of the Arts Centre in Canada's capital, the Orchestra will be in its fourth season when it crosses the Atlantic to perform in some eight major cities and to take part in the four great music festivals at Bath, Versailles, Llandaff (Wales), and Warsaw. This major tour by the young Orchestra, made possible with the assistance of the Department of External Affairs, follows by one year after the Orchestra's highly successful New York debut at Lincoln Center, where it won the acclaim of some of the top United States music critics. The Orchestra plans to perform its first European concert in Warsaw on May 16, 1973, during the International Festival of Chamber Music.

An invitation to the Orchestra for a three-week tour of the Soviet Union, with all its touring expenses paid, had to be declined because of prior commitments in England and Wales. However, it plans to spend six days in the Soviet Union, from May 17 to 22, for concerts in Moscow, Leningrad, and one other major city still to be determined. The Soviet authorities have also agreed to pay the Orchestra's travelling expenses from the U.S.S.R. to London, the next stop on its itinerary.

In England the Orchestra will open the Bath Festival on May 25 with a performance in the historic

Abbey, which will then be celebrating the thousandth anniversary of the crowning there of the first king of all England. The artistic director of the Bath Festival is Sir Michael Tippett, the well-known British composer.



Mario Bernardi, resident conductor

On May 29 the Orchestra will travel to the old west-of-England city of Bristol, where it will perform in Colston Hall, and on June 1 it will move to London for an appearance at the new Queen Elizabeth Hall on the South Bank. The following day, the Orchestra will perform in the Llandaff Festival in Wales, where it will play in the twelfth-century Llandaff Cathedral.

Two days later, on June 4, the ensemble will perform at the Versailles Music Festival amid the splendours created by Louis XIV. The concert will be given in the jewel-like theatre in the palace built for the Sun King's private diversion by the great architect of his time, Jacques Ange Gabriel.

TOKYO ADULT EDUCATION MEET

Secretary of State for External Affairs Mitchell Sharp announced recently that a Canadian delegation would be attending the Third International Conference on Adult Education, which is being held in Tokyo by UNESCO from July 25 to August 7. Mr. Peter Nicholson, Minister of Finance and Education, Deputy Premier of Nova Scotia and Chairman of the Council of Ministers of Education, Canada, has agreed to lead the delegation, which will also include: Jean-Marie Beauchemin, Associate Deputy Minister, Department of Education, Quebec; Paul Bélanger, Deputy Director General, Institut canadien d'Éducation des Adultes; Bert Curtis, Dean, College of Applied Arts, Algonquin College of Applied Arts and Technology; Johann Phillipson, Deputy Minister of Education, British Columbia; Maxwell Yalden, Assistant Under-Secretary of State, Department of the Secretary of State.

ADVISERS

The delegates will be advised by: Réal Michaud, Director General, Service des Moyens techniques de l'Enseignement, Department of Education, Quebec; Jacques-Victor Morin, Associate Secretary-General, Canadian Commission for UNESCO; Dr. Garnet T. Page, Department of Regional Economic Expansion; Dr. Maurice Richer, Secretary-General, Council of Ministers of Education, Canada; and Gordon Selman, Director of Extension, University of British Columbia.

Advisers from the Department of External Affairs and the Department of Manpower and Immigration will also attend the Conference.

MACKENZIE RIVER CHARTS

Twenty-six navigational charts covering 1,071 miles of the Mackenzie River from Fort Simpson to Tuktoyaktuk are now available from the Water Management Service of Environment Canada.

The charts are the result of three years' work by the Canadian Hydrographic Service of the Marine

Sciences Directorate. They have been revised to include data obtained from survey operations to the end of the 1971 navigational season.

Two major transportation firms – Northern Transportation Company Limited and Kaps Transport – are the chief users of the Mackenzie River. Because of exploration activities in the Arctic, traffic on the river has increased sharply in the past few years.

INCREASED TONNAGE

Barges used by the two companies are expected to carry approximately half a million tons of supplies on the river this year, an increase of 100,000 tons over 1971. A similar increase is expected next year. A large percentage of supplies going into northern areas is moved by river transport.

The charts, numbering 6410 to 6434 inclusive, and chart 6388, cover the area of the West Channel and Reindeer Channel in the Mackenzie River Delta. Hydrographic survey operations on the Mackenzie are continuing this year to update them.

Five areas on the Mackenzie River are recognized as troublesome for navigation – the Sans Sault Rapids, Green Island Rapids, the Ramparts, Providence Rapids and Beaver Lake. Strong currents with winding channels – here chutes with rocks on both sides and there white-water rapids – cause difficulties in these areas. Only shallow-draft vessels are able to use the river system.

EMPLOYMENT AND UNEMPLOYMENT

Unemployment decreased from 592,000 in April to 552,000 in May. This was a smaller decline than usual for this time of year, resulting in an increase in the seasonally-adjusted unemployment rate from 5.8 to 6.2. Seasonally-adjusted unemployment rates have been characterized by irregular movements since the beginning of the year.

The number of employed persons increased to 8,345,000 in May from 8,085,000 in April. This is about the usual increase, resulting in little change in the seasonally-adjusted employment level.

The increase in the actual size of the labour (+220,000) during April and May was about usual for this time of year.

Compared to a year ago, the labour force was up 270,000 (3.1 per cent); employment was up 261,000 (3.2 per cent) and unemployment was up slightly.

The seasonally-adjusted employment level fell slightly, from 8,288,000 in April to 8,279,000 in May. The employment level decreased marginally for persons 25 years of age and over and increased slightly for persons 14 to 24.

Regionally, employment increased in Quebec and Ontario and fell in British Columbia, the Atlantic Provinces and the Prairies.

GIANT WHEAT SALE TO CHINA

The sale of 1.5 million tons of wheat by the Canadian Wheat Board to the People's Republic of China was announced in the House of Commons on June 2 by Mr. Otto Lang, Minister responsible for the Canadian Wheat Board.

The \$100-million contract, which allows for a tolerance of some 5 per cent of the stated quantity, involves a maximum of 58.8 million bushels. Half of the deliveries will be made during July and December, the remaining 750,000 tons to be shipped in January and March 1973.

"As a result of this sale, our shipments of wheat to the People's Republic during the calendar year 1972 will total 3,750,000 tons (144.7 million bushels),

which is the largest amount of wheat we have ever shipped during a single year to China," Mr. Lang said.

Grades to be shipped are No. 1 CW Red Spring, 13.5 per cent, and No. 1 CW Red Spring, 12.5 per cent. All shipments will be through West Coast ports.

Terms of the sale are the same as in previous contracts with the People's Republic of China — 25 per cent cash when each vessel is loaded, the balance to be paid within 18 months, with interest.

Mr. Lang said that these credit terms were made possible under a guarantee to the Canadian Wheat Board by the Federal Government.

FUN FOLK AT ONTARIO PLACE

Seven-foot bird and animal "characters" will be part of the fun this year at Ontario Place, Toronto's summer entertainment complex.

Cool Crow, Bashful Beaver, a rollicking red fox and other "fun folk" have been created by the Canadian artist-sculptress Tanya Petrova for youngsters playing at the Children's Village, which is scheduled

to open in July. Madame Petrova, who shaped, built and sewed the fantastic figures, admits it's a lot of work but declares, "I like to give happiness with these characters".

The heads of birds and animals are carved from styrofoam blocks, the bodies shaped with wire and covered with light cotton. Porous, coloured terrycloth and felt, covering the heads and bodies are cut to make the animal and bird faces and to form their wings, paws and feet.

To keep the persons inside cool, Madame Petrova has designed a built-in air-conditioning system, using four battery-operated propeller fans in birdcage-style containers, one inside the top of the head, with lots of room to spare, and the other three in various parts of the body.

Madame Petrova is also designing raccoon, deer and moose characters to join their friends round the site as the summer season progresses.

PRESIDENT U.S. ACOUSTICAL SOCIETY

The international reputation achieved over a period of more than 20 years by an acoustics research team of seven scientists at the National Research Council of Canada was recognized recently at the eighty-third meeting of the Acoustical Society of America at Buffalo, New York.

Dr. Edgar Shaw, a physicist on the staff of the Acoustics Section of NRC's Division of Physics, became the first Canadian to be elected President of the Society, which has an international membership of 4,600. He was Vice-President of the Society in 1968.

The NRC acoustics research team, headed by Dr. George Thiessen, has been engaged in a wide range of basic and applied research related to the physics of sound with a strong interdisciplinary em-



Cool Crow and Bashful Beaver

phasis, and more recently the group has provided leadership in the solution of community-noise problems. One of its early contributions was the development of ear-defenders for use in industry, especially at airports round the world where ground-crew working near jet aircraft are subjected to dangerous noise levels.

Dr. Shaw, 50 years old, was born at Teddington, Middlesex, England, and joined NRC in November 1950. Besides developing the ear-defender in collaboration with Dr. Thiessen, he has been engaged in numerous research projects in the field of acoustics, including urban noise problems and hearing measurement.

GRAIN-TRUCKING TEST

The Canadian Wheat Board, the Canadian Grain Commission and the two major railways (Canadian National and Canadian Pacific), in co-operation with grain-handling companies, country elevators and the Saskatchewan Trucking Association, have embarked upon an experiment to provide data on trucking grain.

The two inland terminals involved are at Saskatoon and Moose Jaw, Saskatchewan; barley is being hauled there from several elevator-points. The maximum target is about 500,000 bushels a week total hauled to the two points, with a final total in excess of 4 million bushels. The number of elevator-points from which grain is hauled in a week varies. In one week, two country-elevator points supplied about 200,000 bushels to one terminal. During another week, however, grain was hauled from 15 country elevators to each inland terminal.

Although the Canadian Wheat Board specifies weekly the volume it wishes and the points from which the grain is to be drawn, it is the job of the dispatchers supplied by the Saskatchewan Trucking Association to the inland terminals to co-ordinate the trucks.

Only self-unloading trucks carrying a minimum of 800 bushels are being used; virtually all available trucks of that description in the area are involved in the experiment. Between 14 and 20 trucks are used each week for each terminal.

TIMES AND CHARGES

The average truck-loading time at the country elevator is between 15 and 30 minutes, the fastest being about ten minutes. The average unloading time at the inland terminal is about seven minutes, the fastest having been 900 bushels in two and a half minutes in Saskatoon.

The minimum charge for a haul is seven and a half cents a hundredweight, and applies to any haul of 30 miles or less. For distances above 30 miles, rates are proportionately higher, the rate for a haul of 120 miles, the maximum distance so far, being 21½ cents a hundredweight.

Barley was chosen for this experiment because it was needed in a forward position for export.

Objectives of the experiment include comparisons with normal rail movement, according to speed, degree of equipment and facility utilization, ease of truck scheduling and rates of loading and unloading.

CULTURAL EDUCATION CENTRES

Mr. Jean Chrétien, Minister of Indian Affairs and Northern Development, in conjunction with Mr. Gérard Pelletier, Secretary of State, has announced that funds will be made available for the establishment and operation of cultural education centres in Alberta, Saskatchewan, New Brunswick and Ontario as the initial phase of a new program for native Canadians.

The main objectives of the centres will be to offer a learning environment within which all decisions related to administration, methodology, curriculum and similar activities are made by the native people who are served by the centre.

The program is a result of submissions made by native groups to the Federal Government to ensure the retention of their culture.

In a joint statement, the Ministers said:

"The centres will provide a unique opportunity for native people to develop a better understanding and appreciation of their current as well as historical roles in Canadian society.

"It is by creating meaningful educational opportunities that cultural self-awareness and self-reliance will be stimulated and reinforced among native people."

Funds for the first phase of the program, amounting to slightly more than \$1.3 million (approximately \$1 million from Indian Affairs and \$300,000 from Secretary of State) will be dispensed to: Old Sun Education Centre in Alberta - \$200,000; the Saskatchewan Indian Cultural College - \$500,000; the Alberta Indian Education Centre - \$500,000; the Indian Heritage Centre in New Brunswick - \$90,000; the Nishnawbe Centre in Ontario - \$45,000. Consideration is also being given to funding a cultural education centre in Quebec.

The centres will be administered by native people, who will establish the curriculum and make all decisions on related activities aimed at strengthening cultural self-identity.

They will have several objectives, among which will be the establishment of experimental studies where natives can learn about their culture in an environment of their own creation.

It is hoped they will encourage the preservation of native languages and history, as well as influence other educational institutions to adopt new approaches in the development of education for native people in Canada.