First Canadian team skis to North Pole

A four-man team braved freezing temperatures and uncertain conditions to become the first Canadian expedition to ski the 450 kilometres from Resolute Bay, Northwest Territories to the North Magnetic Pole. The journey, which began on April 29, took 16 days.

The team was composed of trek leader Ed Struzik, northern correspondent for *The Edmonton Journal,* staff photographer Brian Gavriloff, editorial writer Allan Mayer and wilderness adventure guide Hector Mackenzie. The trip was sponsored by *The Edmonton Journal.*

Mr. Struzik said the expedition went quickly as we "put in double shifts, moving twice as long each day to take advantage of the weather and the around-the-clock sunshine".

They used an astrocompass similar to the ones used by Arctic explorers 100 years ago, and also determined the position of the magnetic pole visually by using three points of land.

Canapress

The team used the sun as one of the guides in the journey to the pole.

Canapress

Three members of the team after six days of their 16-day ski to the North Magnetic Pole.

"We actually skied past it, as determined later by sophisticated instruments on board the pick-up plane," said Mr. Struzik.

The team followed a sea route along the coast of Cornwallis Island until they reached Little Cornwallis Island. From there, they crossed over the strait to Bathurst Island, where they traversed polar bear paths.

On the frozen surface of the Arctic Ocean around Cornwallis and Bathurst Islands, the expedition had to skirt past ridges formed by the rolling sea ice.

The final leg of the trip was a 120 kilometre trek northward across the sea ice to the Magnetic North Pole, in the middle of the Maclean Strait, between Lougheed and Helena Islands. The terrain at the pole was fairly flat with a few icebergs jutting through and some hummocks of snow.

Northern scientific studies

Madeleine Griselin, an Ottawa scientist, Anne Tremblay, a Montreal psychologist and Dominique Migeotte are being joined by five women from France in an attempt to be the first women to reach the North Pole by land. Each team member is bringing special skills to the journey. One of them will photograph some parts of the expedition for a proposed film.

The expedition's main goal will be to plot the movement of sea ice near the Magnetic North Pole.

Although some studies have been carried out, none has been as comprehensive as the team's planned study. Dr. Williams said two drift patterns have been noticed: one circular movement — called the Beaufort Gyral — in the Beaufort Sea area, and a "trans-polar drift", which runs in a roughly straight line from Siberia towards Greenland.

Dr. Williams said not much is known about the trans-polar drift. The expedition's main task will be to set a straight line of satellite beacons along the route.

The team will also study the physiological and psychological effects of the cold, the physical effort and the isolation. Dr. Williams said that all existing studies on isolation and endurance in arctic conditions have been carried out on men.

The team is scheduled to set out from the Norwegian island of Spitsbergen next February. They will cover the 1 100-kilometre distance across the frozen Arctic on skis.

The group is trying to find sponsors to cover the cost of the expedition. Dr. Williams said the total cost, including use of a Pole-orbiting satellite, is estimated at $500 000. The National Research Council is sponsoring the studies of ice thickness and ice properties in the part of the Arctic through which they will be travelling.

Muscles measured by exercise robots

The Kin-Com machine, a computer that offers a unique way of measuring muscle strength and endurance, is increasingly being used in hospitals, sports-medicine clinics and universities.

The 'exercise robot' was created by James McArthur of Coquitlam, British Columbia, and his company, Med-Ex Diagnostics of Canada Inc., has already sold the machine to 200 users in the world including the Mayo Clinic in the United States, Queen's University in Kingston, Ontario, the Karolinska Clinic in Sweden and several hospitals in Japan.

Dave Short, a representative of Med-Ex Diagnostics, said there are 180 kinetic exercises that can be performed on the Kin-Com. The user can attempt isokinetic exercises — where the speed of the movement remains constant even if the force exerted changes — isometric exercises and passive exercises.

The machine measures concentric contractions of the muscles and eccentric contractions. Concentric contractions occur when you lift something — the muscle contracts and the fibre in it shortens. Eccentric contractions occur when you lower your limb.

The Kin-Com is the only machine that allows researchers to see how well a person's eccentric movements are working. It tells how well a person is using muscles and which muscles need to be worked on. The machine can also be programmed to gain strength through the exercise.

Controlled by a computer, the muscle contractions are measured in ways that were impossible before. There is a video display with a graph that shows the movement of the machine in contrast to the movement of the person using it. The speed of the exercise, the number of times the exercise will be repeated, the name of the exerciser and the force being exerted, also are recorded.