

Maglev high-speed propulsion system makes good progress

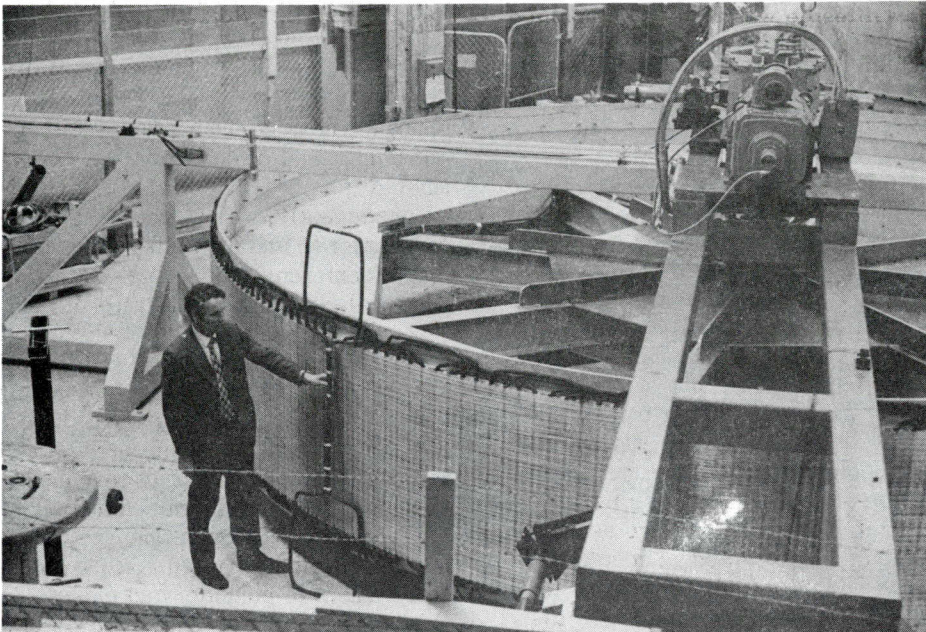
Encouraging results from intensive tests of the Canadian Maglev "superconducting linear synchronous" motor were received recently by a group of scientists and engineers at Queen's University, Kingston, Ontario.

This motor is a design version of one capable of propelling a 100-passenger vehicle along an elevated guide-way at speeds of 300 mph.

absolute zero so that the coils lose their electrical resistance and can be operated essentially without power requirements.

When in use, the electromagnetic coils interact with "energized loops" built into the guide-way, producing a travelling wave which thrusts the vehicle along.

The magnets also push the vehicle



Professor David Atherton stands beside the diameter wheel which is used in testing the "superconducting linear synchronous" motor now being carried

out by the Canadian Maglev Group at Queen's University, Kingston, Ontario. Not shown in the photo is the large stationary helium-cooled magnet.

Headed by Professor David Atherton of the Physics Department at Queen's, the Maglev group (Maglev-Magnetic Levitation) is an interdisciplinary team from Queen's, the University of Toronto and McGill University, Montreal. It is administered by the Canadian Institute of Guided Ground Transport at Queen's and supported by the National Research Council and the Transportation Development Agency.

Other groups developing similar motors for high-speed transit are located in Britain, the United States and West Germany.

How it works

The motor incorporates high-strength electromagnets which are mounted on the underside of the Maglev vehicle. These are cooled by helium to almost

several inches above the guide-way thereby freeing the vehicle of any contact with the surface. The thrust is then controlled by high-power semiconductor circuits.

At the Queen's test-site the Maglev system has been inverted for the convenience of experimenting. A full-scale stationary superconducting magnet interacts with guide-way coils mounted around the perimeter of a 25-foot diameter wheel.

According to Professor Atherton, this large-scale test was the first in the world and is encouraging. It indicates few problems with the starting-up process of the motor.

He says that, "while there is considerable refinement and further testing still to be done, our group's results already indicate that the supercon-

Canada hosts world conference on lighthouses and navigation aids

The Ministry of Transport will host the ninth International Conference on Lighthouses and Other Aids to Navigation in Ottawa, from August 3 to 15.

More than 300 delegates from approximately 50 countries will meet at the Government Conference Centre in Ottawa during the two-week period to discuss and exchange information concerning the world-wide development of marine aids to navigation. The Paris-based International Association of Lighthouses Authorities (IALA) groups organizations and services is responsible for the maintenance of lighthouses and other aids to marine navigation.

The Association meets every five years; this will be the organization's first conference in Canada.

Mirabel airport opens in October

Transport Minister Jean Marchand has announced that the new Montreal International Airport (Mirabel) will open October 4, and international commercial flights will begin operating from the new airport on October 26.

On that date, 19 domestic and foreign air carriers will be using the largest aviation facility in the world and by the time the Olympics begin next year in Canada, this will probably be increased.

Scheduled as a four-day event between October 2 to 5, the official opening ceremonies have been designed to allow maximum participation by all levels of government, the aviation industry and the public at large.

The facilities scheduled for dedication on October 4 are designed to handle the transfer of international and charter flight traffic from Dorval Airport. The October 26 transfer of international traffic from Dorval to Mirabel coincides with the change from summer to winter airline schedules.

ducting linear synchronous motor appears to be the most suitable propulsion system for high-speed intercity transit and its special advantages promise other future large-scale applications".