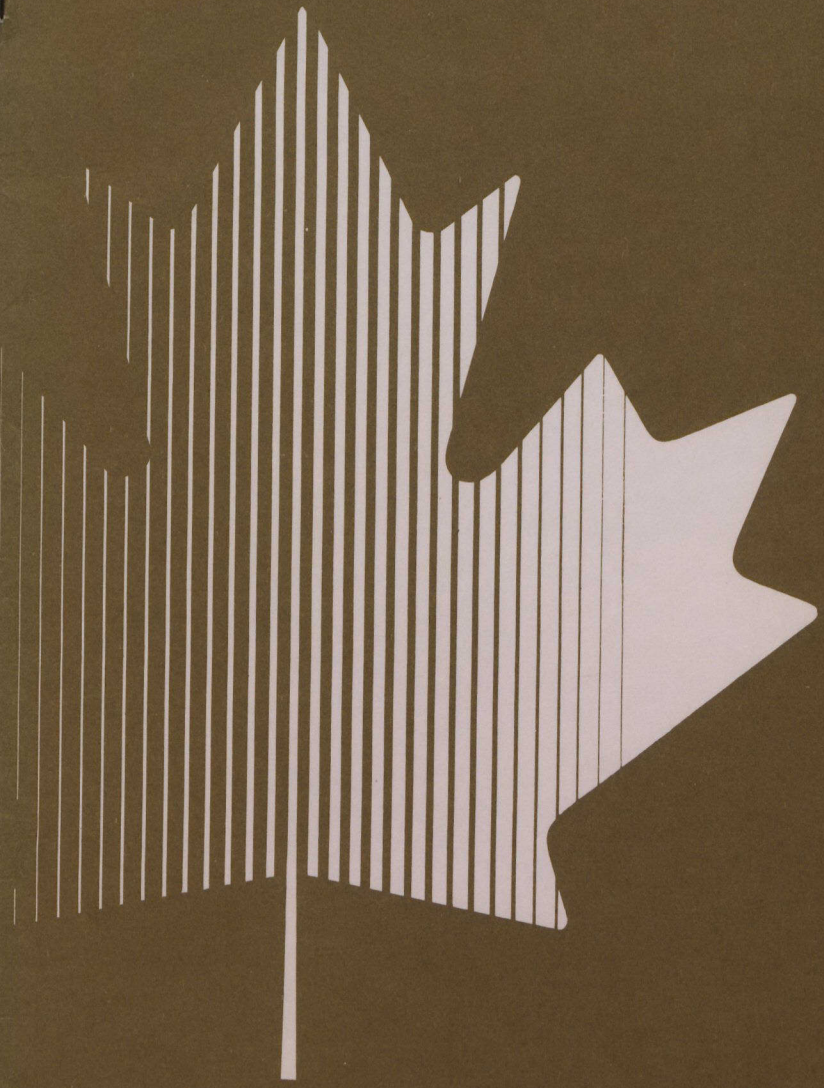
Transportation in Canada



Reference Paper 138

Transportation in Canada

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A major obstacle to the provision of an efficient, low-cost transportation system for Canada is the country's enormous size — St. John's, Newfoundland, and Vancouver, British Columbia, are separated by more than 4,000 miles. But distance is not the only problem. Large parts of Labrador, New Brunswick, Quebec and Ontario consist of rocky, forested terrain. The great plains of the Prairie Provinces are cut off from the Pacific Coast by range after range of lofty mountains. In between, countless rivers and lakes, areas of exposed rock and marshes and vast expanses of tundra present a constant challenge to the builders of roads and railways. Mobility is greatly reduced in the Far North by the ever-present permafrost and sea-ice. Sizeable straits separate the island of Newfoundland, the province of Prince Edward Island and large parts of B.C. from the mainland.

No, it is not easy to move from one part of Canada to another, but, because the ability to do so is vital to the nation's very existence, all forms of transportation are called upon to serve the manifold needs of Canadians from coast to coast.

Marine transport

Canada's earliest transportation routes were its waterways — called by the Indians "roads that walk". Long before the arrival of the first European explorers, the Indians had brought the birch-bark canoe to an advanced state of efficiency. The tribes of the Pacific Coast hollowed dug-outs of considerable size from the trunks of the huge cedars among which they dwelt. In the treeless North, the Inuit (Eskimos) made their seaworthy *kayaks* from skin-covered frames, thus devising a form of transportation still in use.

The early explorers, fur-traders and pioneers also followed the rivers and lakes, opening the country to trapping, trade and settlement. At first they used the Indian canoe for transport; in time they developed larger and larger boats, and even ships. Marine transport

was a major means of moving both passengers and cargo for many years.

Since the Second World War, there has been relatively little passenger traffic along Canada's waterways, except for the ferries that connect the larger islands to the mainland. However, the development of the St. Lawrence Seaway, which was opened in 1959, has ensured the continuing importance of marine-cargo transportation. The Seaway permits ocean vessels to go as far inland as Toronto, Sault Ste. Marie and even Thunder Bay, thus facilitating both the import and export of manufactured goods and agricultural products.

In the Arctic, marine transport plays a vital role. To the west, the Northern Transportation Company Limited (a Crown corporation) uses barges and tugs to transport heavy cargo down the Mackenzie River to the coast.[1] To the east, and in the High Arctic, the sea serves as a supply-line for the few tiny, scattered settlements. Convoys of Canadian Coast Guard ships, as well as chartered freighters and tankers, make regular visits during the shipping season from mid-July to late September to deliver food, oil and other necessities. These convoys are accompanied by Coast Guard icebreakers, which keep the shipping lanes open.[2]

Railways

Within a few years of Confederation in 1867, the waterways had ceased to provide adequate service to all parts of the new nation, which now included British Columbia. The West Coast province needed new forms of transportation and communications to connect it with the eastern provinces. Canada's railways were the answer. The first nation-wide system was the Canadian Pacific, whose famous "last spike" was driven at Craigellachie, B.C., on November 7, 1885. In 1922, a second system, the Government-owned Canadian National, was formed from a number of private lines.[3]

These two companies, which operate railway systems that are among the largest in the world, control a wide variety of Canadian and international transport and communications services. They

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1See Reference Paper No. 131 — *Transportation in Northern Canada.* (July 1972)
2See Reference Paper No. 119 — *The Canadian Coast Guard.* (November 1973)
3See Reference Paper No. 110 — *Canadian Pacific Limited.* (December 1976)

are supplemented by a major north-south line on the West Coast and by a number of independent regional railways. Together, the railways are the only carriers that can transport large volumes of freight at low cost, in all weathers, across the length and breadth of the country.

In their heyday, trains were the most popular mode of passenger travel. They lost this favoured position after the Second World War but, under a new rail policy announced in 1976, attempts are being made to attract a large part of the market for interurban passenger travel back to the railways. To this end, steps are being taken to make the trains more attractive, more comfortable, more efficient and more economical to operate.

Roads

Far and away the most popular and widely-used form of transportation is the automobile. This way of getting about began to make real inroads into the popularity of the railways after the Second World War. In 1945, there were 1,161,337 automobiles, including taxis, registered in Canada; by 1973, there were 7,866,084. During the same period, the number of commercial vehicles, including buses and trucks, rose from 321,550 to 2,004,536.

Motor-vehicles of all sorts account for most urban transportation, both passenger and freight. They also play a major role in inter-city transportation. To accommodate this vast number of road-using vehicles, and to ensure that transportation is available in all parts of the country, many roads are needed. Canada has well over a million miles of paved highways and nearly three million miles of secondary roads. In 1975, the provinces and the relevant federal departments spent a total of nearly $1.5 billion on highway construction and nearly $5 million on maintenance.

Aviation

Early in this century, man started taking to the air. The first heavier-than-air flight in Canada took place on February 23, 1909, when J. A. D. McCurdy flew the famous *Silver Dart* for half a mile from the ice of Baddeck Bay, Nova Scotia.

Numerous Canadians were trained in aviation during the First World War. After the war, many ex-airmen bought war-surplus aircraft and started careers in civilian flying. By 1925, the aeroplane

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4See Reference Paper No. 111 — *Canadian National Railways.* (January 1977)

had established itself in such operations as forest protection and aerial photography. By 1929, the famed "bush pilots" had made possible the development of a rich mining industry throughout the Northland. Air services gradually became available in all parts of the country. By 1937, it was feasible to start a scheduled inter-city service, operating both day and night in all kinds of weather. So there came into existence Trans-Canada Airlines (TCA), Canada's first national carrier for passengers, mail and freight. The second national carrier, Canadian Pacific, was formed in 1944.

During the Second World War, Canada trained some 131,000 aviators under the British Commonwealth Air-Training Plan and established a transatlantic aircraft-ferry service. These enterprises resulted in the construction of many new airports and the establishment of a scheduled international service. By the end of the war, Canada was in fourth place in world aviation.

Canada is a charter member of the International Civil Aviation Organization (ICAO) and of the International Air Transport Association (IATA), both of which recognized the country's contribution to aviation by establishing their headquarters in Montreal.

Today, Canada has two major airlines — Air Canada (formerly TCA) and Canadian Pacific —, five regional airlines and hundreds of third-level carriers. There are more than 19,000 aircraft registered in Canada, 13,500 of which are privately-owned. These small aircraft are used for training, for business trips, on farms, in such industries as fishing, trapping, forestry, construction and utilities, and for recreation.

To service domestic aircraft, as well as planes belonging to foreign airlines, the federal Department of Transport (Transport Canada) operates some 250 airports and is responsible for air-traffic control, airport security, flight services, standards, licensing and inspection, telecommunications and electronics, and air-navigational services.

Controls and administration

Generally speaking, the Federal Government is responsible for the control of marine, air and rail transportation. This responsibility is specified in a number of acts. In certain cases, the provincial governments become involved in the administration of parts of the relevant legislation.

This is the case with the sections of the Criminal Code dealing with such matters as impaired driving. Although the Criminal Code is a federal act, the provinces administer it within their own borders. Other matters connected with road traffic, including the licensing of vehicles and drivers, regulations about the use of seat-belts and speed-limits, are direct provincial responsibilities. In urban areas, such matters as parking, speed-limits and other traffic questions fall within the jurisdiction of individual municipalities.

Research and technology

The rapidly-changing technology of the last few decades has brought about many changes in all types of transportation. On the ground, for example, the increasingly-popular snowmobile was a Canadian development. Early models were large and cumbersome, but recent models for one or two people are compact and easy to run. While the snowmobile is perhaps best known as a recreation vehicle, it does have many practical uses. In the Far North, it has all but replaced the dog-team as a means of getting to trap-lines and to checkpoints for hydroelectric power. Nurses use snowmobiles in isolated areas to visit patients. Members of the Royal Canadian Mounted Police also use them in the course of their duties. During recent years, the snowmobile has made a definite place for itself in the Canadian transportation picture.

Efforts are being made to increase the mobility of handicapped persons. Research is being done on the development of personal vehicles for the disabled, the adaptation of existing vehicles such as vans for use by people in wheelchairs, and the provision of public transportation for the handicapped.

Transport Canada is currently engaged in research on a magnetic-levitation train, suspended above a single rail on a magnetic cushion. Such a train, which would be capable of speeds up to 300 miles an hour, would have no engine, would make no noise and would create no pollution — and it would be a great energy-saver.

The Canadian Coast Guard would like to extend the navigational season in the Arctic, which now lasts only from three to four months. Consideration is consequently being given to the construction of an icebreaker that will be larger and more powerful than any afloat. It is possible that such a vessel would be powered by nuclear energy.

Long tours of duty are characteristic of Arctic icebreakers, and tours on the large new vessel would be longer than usual. Hence the ship would provide a high level of accommodation, with single cabins for the crew members, a swimming-pool and a multi-purpose theatre. It would be large enough to carry a hovercraft and several snowmobiles for use ashore and on the ice. It would also have hangar, landing and flight-control facilities for three helicopters.

In the air, most of the recent research has been into the development of larger, faster planes capable of transoceanic and transcontinental flight. In Canada, however, there has been considerable interest in and research into short-takeoff-and-landing (STOL) aircraft — planes that can land and take off in less than 2,000 feet, operate at low speeds in terminal areas, are quiet and can approach a runway at an angle of six to nine degrees. STOL aircraft would be used primarily in carrying passengers between cities. A demonstration service between Ottawa and Montreal has come to a successful conclusion and research is continuing in this field.

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