



## Canada in the Air

*The airplane could almost have been created for Canada's rugged immensity, and Canadians have made the most of its marvellous attributes. In so doing, they have made a significant contribution to world aviation which has its roots in the ingenuity of the bush pilots of an earlier age . . .*

□ A colour illustration in a Canadian children's book of a generation ago shows a cabin by a northern lake. A mother and child stand nearby watching a forest fire rampaging towards them. A float plane has just landed and put some men ashore to fight the conflagration. The family has been saved.

The theme of the illustration is a familiar one — the dramatic role of the airplane in an emergency. Through the mass media, the exploits of Canadian bush pilots in flying to the rescue are known to people around the world. But while tales of derring-do may crowd the pages of Canada's aviation history, a serious and significant theme underlies them — the Canadian achievement of putting the aircraft to work to meet the special transportation needs of a vast, rugged and sparsely-populated country. For, possibly more than any other nationality, Canadians have capitalized on the aircraft's unparalleled ability to leap daunting distances and impassable terrain.

It would almost seem as if the aircraft were specially invented for Canada's wild immensity. That Canadians should have been among the first to be excited by its marvellous potential is no surprise. That they should later have fashioned a distinctively Canadian tradition of aircraft operation, design and production may also be natural. But this could not have been done without a prodigious expenditure of vision, intelligence, diligence and sheer guts.

No less imaginative a man than the great inventor Alexander Graham Bell took the initiative

in exploring the practicability of powered flight when he founded the Aerial Experiment Association in Halifax in 1907. In March 1908 a member of the group, F. W. Baldwin, became the first Canadian to pilot an airplane when he flew a model designed by an American fellow-member at Hammondsport, N.Y. Then, on the ice of Bras d'Or Lake at Baddeck, N.S. on Feb. 23, 1909, member J. A. D. McCurdy flew his own design, the "Silver Dart", for about half a mile, becoming the first Canadian to fly in Canada. He was also the first British subject to make a successfully controlled flight in a heavier-than-air machine in the British Empire.

The serious approach to aviation seemed to wane in the next few years as airplanes, mostly from the U.S., made their first appearances in major communities across Canada. Aerial wizardry and daredevil acts took precedence over aeronautical science.

A more utilitarian approach to aviation appeared in May, 1914, when Canada's first intercity air passenger was flown from Toronto to Hamilton and return. With the outbreak of World War I four months later, flying suddenly developed into a very serious business indeed. Many young Canadians joined the British air services. They went on to make up a large proportion of the British air services, showing a special aptitude for the individualistic combat in the skies. Some gained renown for their exploits as aerial warriors — among them W. A. (Billy) Bishop, Raymond Collishaw, W. G. Barker, D. R. MacLaren, and Alan A. McLeod.

By the time the conflict ended, more Canadians were experts in the art of flight in proportion to the population than the citizens of any other Allied country. Besides distinguishing themselves in battle, they had gained flying experience in every theatre of war and patrol route from the North Sea to the Indian Ocean. Some 13,000 veteran fliers returned to Canada after the war, and some of them went on to take up the challenge of pioneering commercial aviation in their own land.

The post-war surge in interest in civil aviation came when attempts to fly the Atlantic from Newfoundland caught the public imagination, alerting people to the potential of this new mode of transportation. The major success of 1919 was a flight from Quidi Vidi, Nfld. to Ireland in a little over 16 hours by the British aviators John Alcock and Arthur Brown. At the same time, commercial aviation in Canada began to make significant strides. On Aug. 7, 1919, Ernest Hoy flew over the western mountain barrier for the first time in a 16½-hour flight from Vancouver to Calgary. The first trans-Canada flight, sponsored by the newly-constituted Canadian Air Board, began in Halifax on Oct. 7, 1920, in a Fairey Seaplane piloted by Lt. Col. Robert Leckie and Major Basil Hobbs. Using six float and land planes along the way, they completed the 3,265 miles 10 days later, having spent about 45 hours in the air.

Canadian pulp and paper companies may be credited with the idea of using aircraft to open up remote areas of the country. Early efforts focused on the timber tracts along the North Shore of the St. Lawrence, its estuaries, and in Labrador.

In his recently-published book *Aviation In Canada*, Larry Milberry explains how the forest firms quickly caught on to the potential of aviation in their industry: "For example, a sweep over a tract of forest provided the aerial surveyor with an immediate bird's eye view of what lay below — the general character of the forest, its extent and accessibility. Maps could be sketched and photos taken, classifying tracts by tree type and maturity.

Future camps could be planned and plant sites could be determined, and gravel deposits and water storage areas located and plotted." This was the birth of a body of Canadian expertise in aerial surveying which has carried Canadian pilots and surveyors over mountains, jungles and deserts around the world in more recent years.

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### *The first airlift helps to build a brand new port*

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The Canadian mining and oil industries also found uses for aviation. In the early 1920s planes were used to fly supplies for oil exploration ventures on the MacKenzie River and to explore the northern Ontario gold belt. Patricia Airways and Exploration Company was set up in 1925 to provide services to the Red Lake area. Its chief pilot was Doc Oaks, who is credited, among a great many other achievements, with inventing the portable nose hanger. This innovation made it possible to service engines outdoors in severely cold temperatures wherever aircraft happened to be.

In 1926 Winnipeg financier James A. Richardson hired Oaks as the first pilot for his newly-formed Western Canada Airways. The next year the company took on its first contract, an airlift of cargo from Cache Lake to Fort Churchill, Man., possibly the first operation of its kind. Pilots flew the cargoes in open cockpit planes in sub-zero temperatures. Through their efforts, a whole new port was built on Hudson Bay.

Western Canada Airways went on to absorb other bush airlines. In 1930 the two national railways formed Canadian Airways with Richardson as president. Western Canada Airways and some eastern lines were absorbed into the new company, but the result was less of a national airline than a series of regional runs.

The government eventually proposed that Canadian Airways, Canadian Pacific Railway and Canadian National Railways become joint owners of a "trans-Canada airline". But the CPR and Canadian Airways declined to take part, and so Trans-Canada Air Lines was set up April 10, 1937 as a wholly-owned subsidiary of Canadian National, a status it maintained until the present Air Canada became independent of CN in 1978. Canadian Airways turned over its Vancouver-to-Seattle

run to TCA, plus two Lockheed 10 aircraft, on Sept. 1, 1937. TCA operated its first flight on this Pacific trans-border route.

The CPR eventually went on to acquire Canadian Airways and develop its own airline. It consolidated 10 airline companies, mostly bush operations, and merged them into Canadian Pacific Airlines in May, 1942. The famous bush pilot Grant McConachie joined the new organization when CPA bought his company, Yukon Southern Air Transport. McConachie, who later became president of CPA, had started out as a fish hauler in northern Alberta. When business was slow, he supplemented his fish-hauling activities with barnstorming. The mixture says something about the tradition of Canadian aviation.

TCA went to work in the 1930s to establish a route across the country. It added larger Lockheed 14s and, on April 1, 1939, inaugurated a trans-continental passenger service between Montreal and Vancouver. The flying time of the first east-west flight was 16 hours, five minutes, with five intermediate stops. As early as 1943, TCA spread its wings over the Atlantic, operating the Canadian Government Trans-Atlantic Air Service, which carried priority passengers and mail in Lancaster bombers to and from Britain. This war effort paved the way for routine postwar transatlantic crossings by North Stars, then Super Constellations, then DC-8s, and the present giant Boeing 747s and Lockheed L-1011s. In the meantime, TCA, renamed Air Canada, has grown into one of the 10 largest airlines in the world.

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### *Civil aviation gets a head-start from the war*

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During the war Canadian airmen served with distinction in the entire range of aerial operational roles. Again, as in the case of World War I, the nation's civil aviation reaped some benefits from warfare. One of the most significant was the British Commonwealth Air Training Plan. A total of 131,553 aircrew from Commonwealth countries trained under the plan, and when the war ended many of the training strips became civilian airports. This gave a head start to the rapid progress of civil aviation in the postwar years.

After the war, both TCA and CPA acquired Canadian-designed and manufactured North Star airliners. The latter used them to open up scheduled routes far and wide to such points as Sydney, Tokyo, and Hong Kong.

The Canadian airlines' international expansion in the 1950s and 60s was paralleled by strong growth in domestic services. By the mid-60s, Canadians had become heavily reliant on flight. Regional airlines grew up to provide service to smaller markets, and to bring more and better service to the North.

In the midst of the growth of these scheduled services, the aircraft continued to play a key role in resource development and in major construction undertakings in remote areas. How could Canada have managed without the airplane in tackling such projects as the development of the iron ore resources in Labrador and New Quebec, the building of the DEW Line, the search for oil and gas in the Arctic and offshore zones, and the construction of the Churchill Falls and James Bay power projects? What other form of transport could efficiently cope with ice reconnaissance, could spray crops and forests, water bomb forest fires, or carry out search and rescue missions in the frozen tundra, dense forest country, and at sea?

It was only natural that Canada's aircraft manufacturing industry should adapt itself to this northern nation's special requirements. In 1947 de Havilland of Canada hired bush pilot Punch Dickins to help design the ideal bush plane. He specified all-metal construction, extra-large loading doors, a high power-weight ratio, and short-take-off-landing (STOL) capability. The result was the Beaver, one of the most useful and reliable aircraft ever developed. Out of the Beaver grew the Otter, Twin Otter, Caribou, Buffalo and Dash 7.

The design and manufacture of short-take-off-landing aircraft is the leading claim to international renown of the Canadian aviation industry. STOL planes from Canada have brought a new measure of accessibility to the harsh wilderness environments of the world, whether desert, mountains, jungle, tundra or bush.

The industry also competes internationally in other fields: the Montreal manufacturer Canadair has recently launched into the highly competitive, big league world of building business jets. Its Challenger twinjet is a wide-body, long-range plane designed to appeal to multinational companies, heads of state and government departments. The company has built many military and civil aircraft since World War II, including the North Star, F-86 Sabre, CF-104, CF-5, T-33, CL-44, CL-66, and CL-84, which is capable of vertical takeoffs and landings. The characteristically Canadian CL-125 water bomber, which has proved its worth fighting fires in many different countries, is also a Canadair design.

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### *A record not without its disappointments*

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Canada's aircraft industry has not been without its disappointments. Very early on in aviation history a company formed by the two flight pioneers, McCurdy and Baldwin, failed. In 1949 Canada moved to the forefront in the passenger jet field when Avro Aircraft of Canada built the Avro Jetliner. The 500-mile-per-hour plane flew for the first time on Aug. 10 that year, long before any other commercial jet, but it failed to win orders. The project was dropped when the government ordered the company to concentrate on CF-100 interceptor jets for the Korean War.

While the CF-100 was a successful aircraft, the Avro CF-105 Arrow, said to be the most advanced all-weather interceptor of its time, ran afoul of a government decision early in 1959 to cancel the project because of heavy costs and poor foreign sales prospects. Most of the 13,000 Avro workers, along with thousands working for subcontractors, were left without jobs.

The Arrow affair underlined the cyclical nature of the aviation industry, often referred to as a "swinging door" industry in terms of employment.

Much of the current upswing in the industry activity is the result of production of the de Havilland's Dash 7 STOL aircraft, the Challenger jet, and aviation turbine manufacturing for export. Canadian firms also build parts for larger aircraft manufactured in the U.S.

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### *The bush flier came along and wrought his miracle*

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Canada today is a full and active participant in modern air transport with a high reputation for technical competence at the most advanced level. Yet even in the age of the globe-girdling jumbo jet, we must go back to the picture of the bush pilot challenging the frontier to find what gives Canadian aviation its special cachet.

As Billy Bishop noted in his book *Winged Peace*, the style of bush flying in Canada in the early days set a different pattern from that of aviation elsewhere. Men began with little or no capital, and each project had to pay its way. In the U.S. and Europe, the pioneers of commercial flight sought to allay man's fear of flying, a long-term proposition which meant that the operator had to take losses over a lengthy period of public education. "In Canada, however," wrote Bishop, "the operator was offering to deliver the human being and his chattels, or say, his mining machinery, to points often as far removed from rail or other communications as to involve weeks of dog team or canoe travel . . . Under [the former] conditions . . . the opening of the rich Canadian North was impossible. Then the bush flier came along and wrought a miracle."

That "miracle" was mainly one of applying the Canadian genius for adaptability, a faculty which, in the days before powered flight, served to settle a gigantic, frigid, and incredibly difficult country. Through the citations accorded its members, Canada's Aviation Hall of Fame in Calgary tells the story of just how ingeniously adaptable Canadians can be. If the spirit of the bush pilot can live on in this age of high technology, Canadian aviators, aircraft designers and technicians will continue to make an enduring contribution to the art and science of flying. And as in the past, the whole world will benefit — Canada most of all.