

One car.
A million stories.

Tell your Civic story at civication.ca.
and we'll donate \$1 to Earth Rangers
or Clean Air Champions.

replay C



GlobalSecurity.org

Education Jobs Travel White Papers Magazines Books Online Store

Home :: Military :: World :: Canada :: Industry :: Bombardier :: de Havilland Canada ::

MILITARY

Avro Aircraft Limited (Canada)

• Canadian Car and Foundry

- CF-100 Canuck
- C-102 Jetliner
- CF-103
- CF-105 Arrow

Avro Aircraft Limited (Canada) was a Canadian aircraft manufacturing company in business from 1945-62. Canada came of age during the Second World War and was widely recognized as a nation with enormous industrial potential. During the Second World War, Victory Aircraft in Malton was Canada's largest aircraft manufacturer. Prior to 1939, as National Steel Car Ltd. of Montreal, the concern had been one of a number of shadow factories set up in Canada to produce British aircraft designs in safety. National Steel Car Corporation of Malton, Ontario was formed in 1938 and renamed Victory Aircraft Limited in 1942 when the Canadian government took over ownership and management of main plant of the National Steel Car Corporation at Malton. In 1942, A.V. Roe Ltd of Great Britain sent a representative to Canada to examine the Avro Lancaster manufacturing program getting underway at National Steel Car (later Victory Aircraft) in Malton, Ontario. National Steel Car turned out Avro Anson trainers, Handley Page Hampden bombers, Hawker Hurricane fighters and Westland Lysander army cooperation aircraft. During the Second World War, Victory Aircraft built Avro (UK) aircraft: 3,197 Anson trainers, 430 Lancaster bombers, six Lancastrian, one Lincoln bomber and a single York transport.

C.D. Howe, the Liberal Minister of Munitions and Supply and of Reconstruction responsible for the disposal of war assets, was anxious to see the development of an indigenous high-technology aircraft industry. Sir Roy Dobson, Managing Director of A.V. Roe and Company, a division of Hawker-Siddeley Aircraft of Britain, was impressed with Canada's wartime aviation achievements and shared Howe's dream. In 1945, Howe sold Victory Aircraft Limited, a Crown Corporation located in Malton, Ontario, under generous terms to Dobson's company. Avro bought the factory, forming A.V. Roe Canada Ltd as the Canadian subsidiary. A.V. Roe Canada Limited, which would later be known as Avro Aircraft Limited, was born. Avro's mandate was not to be a mere branch-plant operation, manufacturing foreign aircraft under license. As Avro boldly declared, their world-class staff were to be "Designers and Builders of All Types of Aircraft." The company would be commonly referred to as "Avro Canada", even after the name was changed to Avro Aircraft Ltd in 1954.

The Federal Government loaned large amounts of money to Avro Canada to assist it. The company also received contracts to design and build a fighter and a navigation trainer for the RCAF and a commercial jet airliner. While the trainer was cancelled in late 1946, in 1946, A.V. Roe Canada's design, the Avro XC-100, Canada's first jet fighter, started at the end of the era of propeller-driven aircraft and the beginning of the jet age. Although the design of the large, jet-powered all-weather interceptor, renamed the CF-100 Canuck, was largely complete by the next year, the factory was not tooled for production until late 1948 due to ongoing repair and maintenance contracts. The CF-100 Canuck first flew in February 1950. The CF-100 would have a long gestation period before finally entering RCAF service in 1952, initially with the Mk 2 and Mk 3 variants.

Work was also underway on a civilian inter-continental transport known as the C102 Jetliner. It nearly became the first jet transport in the world when it first flew in August 1949, a mere 13 days following the first flight in Britain of the de Havilland Comet. While initially interested in the C-102, Trans-Canada Air Lines was released later from its commitment as the plane did not meet reserve fuel and payload requirements. In December 1951, the Government ordered the cancellation of the C-102 Jetliner as it wanted the company to concentrate on CF-100 production. The company was still attempting to get the CF-100 into production at the time and, consequently, the Canadian government cancelled any further work on the C102 project due to the Korean War priorities. The Canuck was having developmental problems centred mainly around a wing spar failure. By mid-1952 the problems had been resolved and the aircraft entered full-scale production for the RCAF, with additional aircraft being bought by Belgium.

Avro's success continued with jet engines. In July 1944 Turbo Research Ltd was formed to develop gas-turbine engines in Canada. Avro bought the company from the Canadian Government in May 1946 after American and British engine builders failed to show any interest. Turbo Research became the Gas Turbine Division of Avro and in 1954 was organized as a separate company - Orenda Engines Ltd. Once acquired, the Gas Turbine engineers began development of the Orenda engine, a powerplant for the proposed CF-100 fighter. By February 1949 the engine was ready to begin tests. Over 4,000 were built for use in the CF-100 and Canadian-built F-86 Sabres as well as other air forces. In 1953, Gas Turbine began development of the Iroquois engine for use in the CF-105 Arrow. Although successfully tested, the engine died when the Arrow program was cancelled. During the 1950s, A.V. Roe Canada purchased a number of companies, including Dominion Steel and Coal Corporation and Canada Car and Foundry (1957) and Canadian Steel Improvement. By 1958, A.V. Roe Canada was an industrial giant with over 50,000 employees in a far-flung empire of 44 companies involved in coal mining, steel making, railway rolling stock, aircraft and aero-engine manufacturing, as well as computers and electronics.

The need for a newer and much more powerful interceptor aircraft was clear even before the CF-100 entered service, and a number of design studies on swept-wing versions started as early as 1952. A switch to a more advanced swept wing was studied as the CF-103, and this led eventually to the larger delta-wing CF-105 Arrow interceptor. In 1953, after abandoning the CF-103 (first plan of bettering the CF-100), A.V. Roe became AVRO Canada. In April 1953 Avro received the contract to begin development of the CF-105 Arrow. The Arrow project, while a major technological development for Canadian industry, was also fraught with difficulties. The Astra fire-control system and the missile program experienced major cost overruns and developmental problems. The aircraft was becoming increasingly expensive with potential costs of production aircraft ranging into the range of several million dollars and possibly more for each. The National Research Council studied the Arrow and was critical of the aircraft's range and maneuverability at altitude, although it should be noted that the NRC was against the program from its inception. On 23 September 1958 the Astra and Sparrow programs were cancelled and on 20 February 1959 the whole project was cancelled. The sudden cancellation of the Arrow project by the Canadian government led to a massive corporate downsizing and an attempt to further diversify.

Avro continued on for several years after the Arrow cancellation, building the unsuccessful Avrocar and attempting to build pleasure boats. However, the fact that all of its work was based on military contracts meant that it had no alternate source of income and the company failed. In 1962, the Hawker Siddeley Group, formally dissolved A.V. Roe Canada and transferred all A.V. Roe Canada assets to its newly-formed subsidiary Hawker Siddeley Canada. The former Avro aircraft factory in Malton was sold to de Havilland Aircraft Canada in July 1962, thereby ending the Avro Canada story. Orenda Engines continued to operate and today is part of the Magellan Aerospace Corporation.

Advertise with Us | About Us | GlobalSecurity.org In the News | Internships | Site Map | Privacy

Copyright © 2000-2010 GlobalSecurity.org All rights reserved.

Site maintained by: John Pike

Page last modified: 26-01-2009 16:10:56 ZULU