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Jim Chamberlin



ARROW 50th Anniversary SALE!

James Arthur Chamberlin 1915-1981



James Arthur Chamberlin was one of the major figures in aircraft design in Canada, and one of the handful of people who have designed a successful manned spacecraft.

Born in Kamloops, B.C., on May 23, 1915, Chamberlin and his mother moved around B.C. to Victoria and then Summerland after his father died in the First World War. He started school in Summerland, but he and his mother soon moved to Toronto, where he got most of his education. As a child, Chamberlin began building model airplanes and won a contest in a Toronto newspaper for model aircraft design.

He graduated in 1936 from the University of Toronto with a bachelor's degree in mechanical engineering. He then went to London, England, where he earned a master's degree from the Imperial College of Science and Technology in 1939.

Before returning to Canada, Chamberlin worked briefly at Martin-Baker, the ejection seat manufacturers. Moving to Montreal, he worked for Federal Aircraft Ltd. on the Canadian version of the British Avro Anson aircraft from February, 1940, to September, 1941. His work focused on the design and stress aspects of the Anson. From September, 1941 to June, 1942, he was chief engineer at Clark Ruse Aircraft in Dartmouth, N.S., where he was in charge of engineering and overhaul for aircraft used in training and anti-submarine work.

For the balance of the war, Chamberlin was a research engineer at Noorduy Aviation in Montreal, where he worked on the Noorduy Norseman and led design projects for the Royal Canadian Air Force.

In February, 1946, Chamberlin joined the engineering staff at Avro Aircraft Ltd., of Toronto. He was one of the top people at Avro Canada, working as chief aerodynamicist on the Avro C-102 Jetliner and the CF-100 Canuck jet interceptor. Both of these aircraft broke new ground for the Canadian aircraft industry.

While only one Jetliner was ever manufactured, the Jetliner missed being the world's first jet transport aircraft by only a matter of days when it made its maiden flight in 1949. The Jetliner was ahead of any transport aircraft in North America, a fact noted by appreciative observers in the United States.

A Canadian government decision to concentrate on military aircraft production during the Korean War was the major reason the Jetliner never went into mass production. As chief aerodynamicist, Chamberlin was responsible for many of the innovations contained in that aircraft.

The CF-100, the first and only Canadian designed military jet aircraft put into mass production, was a subsonic, twin-engined aircraft that had a difficult development process and certain flaws which took time to iron out. Yet the CF-100 served in the RCAF and the Canadian Forces around Canada and Europe in a variety of roles for more than 30 years. The CF-100 also saw service in the Belgian Air Force. Chamberlin was a key member of the design team for this unique aircraft.

By the time Avro moved into design and construction of the CF-105 Avro Arrow in the mid 1950s, Chamberlin was Avro's chief of technical design. The story of the Avro Arrow is well known. The twin-engined delta-winged supersonic jet interceptor is considered the most advanced aircraft of its time. Even without the engines that were designed for it, the Arrow could fly near Mach 2.

As is well known, only five Arrows flew before the project was cancelled by the Canadian government on February 20, 1959. Avro Canada didn't last long after the demise of the Arrow, and within a few weeks of the Arrow's cancellation, Chamberlin's career in Canada was over.

Although his achievements were already remarkable by almost any standard, the most

extraordinary part of his career was about to begin.

In April, 1959, Chamberlin and two dozen other engineers from Avro were recruited by the fledgling National Aeronautics and Space Administration in the United States. The Avro group, which eventually included 32 engineers, joined NASA's Space Task Group at the Langley Research Center in Hampton, Virginia. The group later moved to Houston, Texas, to become the core of what is today the Johnson Space Center.

Chamberlin soon became head of engineering for Project Mercury, the first U.S. manned spacecraft. In that role, he became the de facto project manager for Mercury and saw the spacecraft through their manufacturing processes. He was also responsible for troubleshooting problems that cropped up during the early Mercury flights.

Mercury was already designed by the time Chamberlin joined NASA, but once Mercury was flying, Chamberlin began working on a spacecraft that would be an improvement on Mercury.

In 1961, Chamberlin began work on a two-man spacecraft capable of changing its orbit, docking with other spacecraft, and permitting astronauts to "walk" in space.

In 1961, he became the first project manager for the Gemini spacecraft. Although he left that position in 1963, the Gemini spacecraft he designed marked a clear advance over Mercury. In 10 manned Gemini flights in 1965 and 1966, U.S. astronauts captured the lead in the space race with the Soviet Union and laid down the foundation for the success of the Apollo moon program.

Chamberlin made many direct contributions to the success of Apollo. He was one of the first people at NASA to see that Apollo would succeed by using the lunar orbit rendezvous flight mode, rather than the direct flight mode favoured at NASA in 1961, when President Kennedy launched the moon program.

Apollo met Kennedy's goal to a large part because it used the lunar orbit rendezvous mode, which utilized a lunar module for operations on the lunar surface.

After he left Gemini in 1963, Chamberlin became one of NASA's top troubleshooters in Apollo. He helped solve problems with the Apollo command and service modules, the lunar module, the mobility unit used by astronauts to walk on the moon, and the Saturn rockets. Before he left NASA in 1970, Chamberlin was involved in drawing up early design concepts for the space shuttle.

While at NASA, Chamberlin received many honours, including the NASA Exceptional Scientific Achievement Medal and the NASA Exceptional Service Medal. With his design of Gemini, Chamberlin is one of the few people to have designed a successful manned spacecraft.

After leaving NASA, Chamberlin worked for McDonnell Douglas Astronautics, first participating in its unsuccessful bid for the space shuttle contract and later working as technical director for advanced space programs.

Jim Chamberlin died in Houston, Texas, on March 8, 1981. He had become a U.S. citizen in 1964. Chamberlin and his wife Ella had two children, Arthur Chamberlin and Shirley Ditloff.

He was a Professional Engineer of the Province of Ontario, a member of the Institute of Aeronautical Scientists and an Associate Fellow of the Canadian Aeronautical Institute. In 2001, he is being inducted into Canada's Aviation Hall of Fame.

By Chris Gainor



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