

As for the Chiefs of Staff Committee and the RCAF, the real culprits in this tale, just as Foulkes and the Chiefs had feared, it was 1961 before the RCAF received sixty-six U.S.-built CF-101B Voodoos, an interceptor which had previously been rejected by the RCAF in 1953. To Diefenbaker, purchase of a U.S. interceptor soon after cancellation was not politically acceptable. The government went on to infuriate the Kennedy administration by refusing to honour its commitment to accept nuclear warheads for the weapons, thereby rendering hundreds of millions of dollars worth of other weapons-systems virtually useless. In 1963, the Diefenbaker government fell after a non-confidence vote condemning its conduct of Canada's foreign and defence policy. In the final analysis, the Arrow had proved to be the first link in a chain of events which

destroyed the government.

The existing Arrows were offered to Canadian, U.S. and British aeronautical agencies for research purposes, but they were rejected because it was simply too expensive to keep such a small number of aircraft flying. The six prototypes and the thirty-seven nearly complete pre-production aircraft were then unceremoniously stripped of all classified material and scrapped by Crown Assets Disposal, though not out of Diefenbaker's vindictiveness as has been claimed. Canada's brief and unrealistic experiment with air defence self-sufficiency had come to an end, and the Arrow, as much a victim of bad timing as poor decision-making, passed into legend where it will probably soldier on far longer than if it had entered service.

The Avro Arrow Story

Bill Zuk



RL-204 and Avro CF-100, December 13, 1958. Note how closely this was duplicated at WCAM.

(Federal newsphoto via Bill Zuk)

When Avro Canada was finally able to showcase their remarkable new interceptor, the Honourable George Pearkes, Minister of National Defence, announced "I now have the pleasure of unveiling the Avro Arrow, Canada's first supersonic aircraft, a symbol of a new era for Canada in the air."

This was merely the official ceremony, as for most knowledgeable observers of Canadian military aviation, the CF-105 Avro Arrow had already been an object of much attention. Avro Arrow RL-201 was the first of a planned series of 100 aircraft. Construction of "201" would take only 28 months from the release of the first blueprints to its roll-out, but the story of the Arrow had begun much earlier.

Designed to RCAF specifications in 1953 that

called for a twin-engine, two seat interceptor capable of protecting the Arctic frontier of Canada, the Avro Arrow was remarkable in its execution. Unlike its subsonic predecessor, the CF-100 Canuck, the Arrow represented an advanced technological achievement. Developed by A.V. Roe of Canada, its origins stem from the innovative research and design programs carried out by the company in the 1940s.

The Avro CF-105 Arrow was one of the world's most advanced fighter aircraft during the 1950s. The developed Arrow Mk. II powered by Canadian-designed Iroquois engines would have been capable of Mach 2.4 speeds—remarkable for 1959! An innovative approach was also undertaken by the Avro

Company to establish production tooling from the outset, resulting in the first Arrow reaching completion status on October 4, 1957.

RL-201 was the first of five Arrow Mk.I's that would fly as prototypes for the series (RL-201, 202, 203, 204 and 205). Carrying Pratt and Whitney J-75s, the initial production batch still was a fascinating hint of the future. Utilizing a complex "fly-by-wire" control, an advanced weapons system and remote ground-controlled operation, the Arrow was, arguably, the most advanced fighter aircraft of its day.

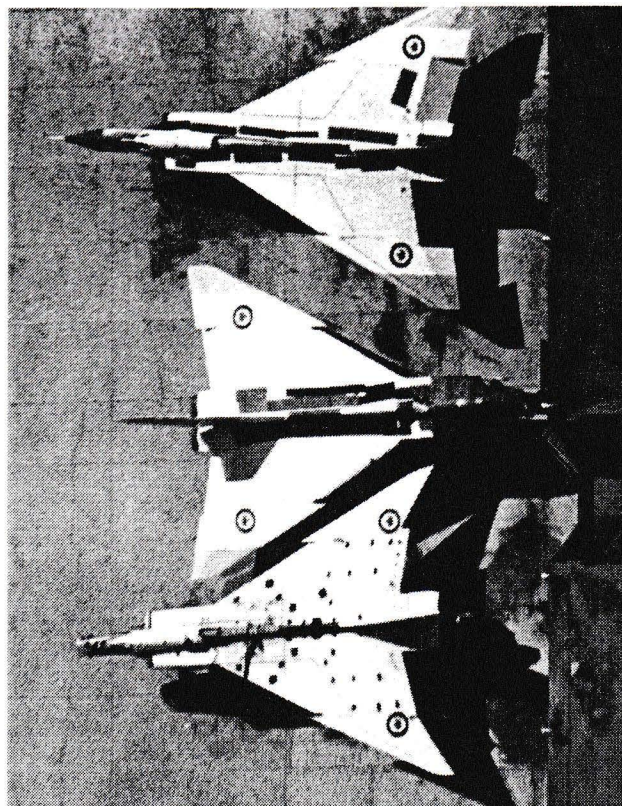
An earlier design from the Avro Company was the Avro C-102 Jetliner, North America's first jet airliner, was one of the outstanding aeronautical achievements of its day. It never saw production, as the Canadian government insisted that Avro concentrate on their other jet program, the CF-100 fighter. After no sales were generated in foreign markets, the Avro Jetliner was sold for scrap in 1956.

Avro's main jet programs in the 1950s were based on the CF-100 Canuck, the first military aircraft wholly designed and built in Canada and one of its first jet fighters. The Avro CF-100 was a long-range, all-weather interceptor equipped with two Avro designed and built Orenda engines. The CF-100 became operational in April 1953 and served 10 years in NORAD and NATO squadrons (692 were eventually built with 53 sold to Belgium). Two Avro CF-100 Canucks are preserved in the National Aviation Museum, one in the Calgary Centennial Planetarium, one at the Western Canada Aviation Museum and others in parks and bases across Canada including The Air Command HQ Air Heritage Park in Winnipeg.

In the 1950s, Canadian and American air-defence organizations were intergrated under the NORAD Agreement. The RCAF role of northern air defence depended on the next development from the Avro Company — the Arrow. The Liberal government of the time authorized two prototype airframes of an advanced supersonic interceptor in December 1953. It was anticipated that a production run of up to 600 aircraft costing \$2 million apiece was needed.

During the design phase, the Avro Company, led by its dynamic CEO, Crawford Gordon, undertook the expensive development of the Arrow's engine, and fire-control and missile systems, with estimated costs rising to \$12.5 million per aircraft. Test flights indicated that, with the proper engines, the plane could well be the world's fastest and most advanced interceptor. However, doubts in the military and the government over the role of the Arrow mounted and the government's order shrank to 100 and unit costs rose.

The potential of the CF-105 Avro Arrow was realized by Avro's chief test pilot, Janusz Zurakowski. He piloted the Arrow on its first flight on March



(Malton, Ontario, May 8, 1959). Pockmarked Arrow is seen here with two others of the abandoned five CF-105 aircraft in the Avro yards at Malton, Ontario. The government refused to continue the project and five of them await destruction.

(Federal newsphoto Toronto via Bill Zuk)

25, 1958 and exceeded 1600 km/h on the seventh flight of RL-201. Zurakowski was awarded the McKee Trophy in 1958 primarily for his work on the CF-105 program. In all, 66 test flights totalling 70 hours and 30 minutes were completed by four test pilots flying five aircraft between March 25, 1958 and February 20, 1959.

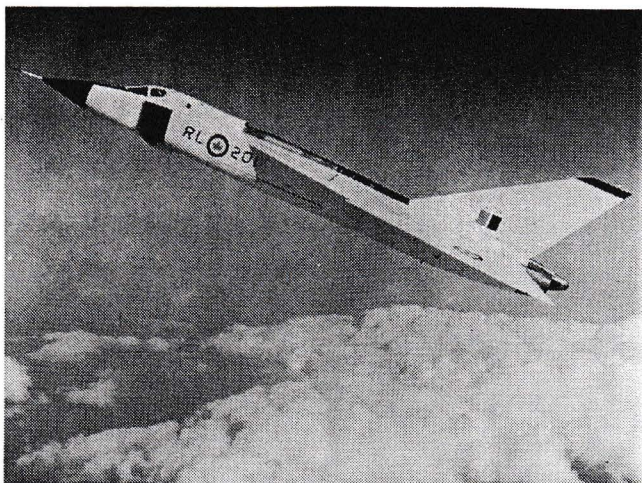
Other events were soon to overtake the Arrow project. In October 1958, to cut costs, the newly elected Progressive Conservative government of John Diefenbaker terminated the Canadian fire-control

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Original Avro Arrow promo RL-201 over Malton, Ontario.
(Photo via Bill Zuk)

and missile development, and renewed efforts to sell the aircraft to the United States. Diefenbaker, as well, considered the Avro Arrow program a Liberal "pet" project.

The PM and Minister of National Defence George Pearkes, just installed in office, hastily accepted the advice of the Canadian military and agreed to integrate the RCAF with the USAF for the air defence of the continent. The Diefenbaker Cabinet proposed the Bomarc missile as an adequate deterrent. The cost-effective (but flawed) Bomarc was greatly resented by supporters of the CF-105 Avro Arrow. As Crawford Gordon launched a last-ditch effort to keep the Arrow project going, it was clear there was considerable resistance in the Diefenbaker government to continue with the costly development of the Arrow.

The Arrow project was officially cancelled by Prime Minister Diefenbaker on February 20, 1959 (known as "Black Friday" at Avro). A.V. Roe Company directors led by Gordon fired nearly 14,000 employees. The Diefenbaker government cited high costs and its new commitment to missile rather than manned aircraft defence, as the reasons for the program cancellation. Three months later, the govern-

ment also ordered that all aircraft completed, including RL-206, the first Arrow Mk.II, and all partially completed Arrows on the assembly line, be destroyed.

This vindictive decision by the government was further bolstered by demands that all evidence of the CF-105's existence, including tools, dies, drawings and photographs also be destroyed. The resulting flight of scientists and engineers meant the end of Canada's aviation industry. The Avro Company completed the destruction, but not surprisingly, the Arrow remains alive in people's memories, along with the few fragments of the aircraft that had been preserved.

The Avro Arrow program was one of great promise but unfulfilled objectives. It was undoubtedly one of the most advanced jet interceptors in the world but owing to the prohibitive costs of development, it was an extremely costly military venture for Canada. With changing political and military policy considerations that emerged in the late 1950s, the Avro Arrow was doomed. However, its cancellation was a disaster for the military aviation industry in Canada and practically ensured that future military aircraft would have to be purchased abroad.

Today, the Avro Arrow only remains as a memory although there are some sections of Arrow Mk.II RL-206 (nose, front landing gear and definitive Avro Iroquois engine) preserved in the National Aeronautical Collection in Ottawa. In a quirk of fate, the Avro Arrow sits near the chopped up nose section of the Avro Jetliner, another unrealized dream of Canadian aeronautics.

Editor's Note: Bill Zuk is an amateur aviation historian and writer whose interest in the Avro Arrow is long-standing. Currently a teacher-librarian in St. Vital School Division, he is also an active member of a number of associations involved in literature, modelling and aviation history. When the Straight Arrow production team began work in Winnipeg, he asked for and received permission to chronicle the making of *The Arrow* film for various publications.

Letters to The Editor

August 26, 1996
Ottawa, ON

Dear Mrs. Render:

This will recall earlier correspondence with you concerning the raising of a memorial to Canadian Airmen who died when their B-24 hit the side of a mountain near St. Donat, Quebec. I now enclose the program of the memorial event held June 27, 1996. The Program was issued in French only, and because of illness it has not yet been possible to translate the

four page program. But there are many French-speaking residents in Manitoba who can translate this material for your archives.

I was delighted to see horse heads on the June '96 covers. Long after the war, ex-RCAF officers moved into civilian public service occupations where many displayed the opposite ends of horses. Thank you for showing the real horses.

Every best wish,
Truly yours,
John J.O. Berry