Cancelled Arrow program killed air technology

By RON LOWMAN
Special to The Sun

TORONTO — Twenty-five years ago a Polish-born test pilot lifted a fighter-aircraft off a Malton runway near here, watched by hundreds of Canadians whose skills had produced her.

"It was certainly more exciting for them than for me," recalled Jan Zurakowski of Barry's Bay, former chief test pilot for A.V. Roe Canada Ltd. (Avro).

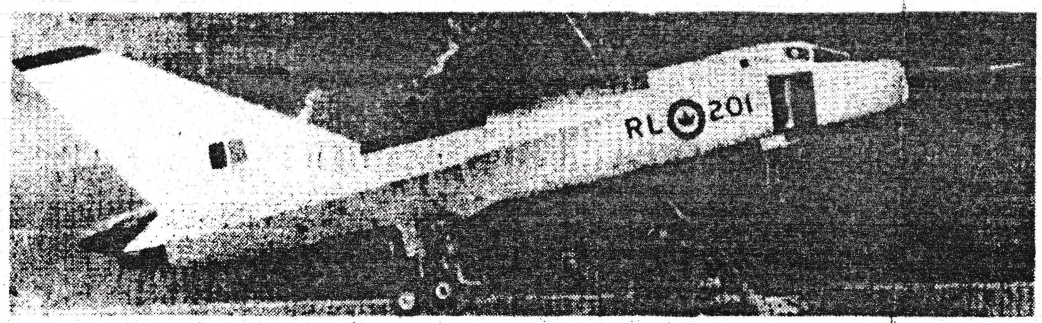
"I was up there in the cockpit struggling to remember all the dos and don'ts, very conscious of my responsibilities and aware that success depended upon thousands of components, only a few of which were under my direct control," he says.

Zurakowski remembers Mach 1.98 as the highest speed he achieved in the Avro Arrow. Mach 1 is the speed of sound, which at sea level is roughly 1,220 kilometres per hour (760 miles per hour). With the Iroquois engines planned for later models, Mach 2.5 would have been possible — "and that's faster than today's CF-18 Hornet."

Canada is buying 138 U.S.-built, CF-18 Hornet fighter-interceptors from McDonnell Douglas Corp. for a price which is expected to hit $5 billion, depending upon inflation, by the time the last one is delivered in 1988. Hornet vital statistics list its speed as Mach 1.8 plus.

The faster-than-sound era of flight was just dawning when Zura eased back the Arrow's stick. This was Canada's first supersonic aircraft. That first Arrow - RL 25201 - was powered by two Pratt and Whitney engines, but the later models were scheduled to be hurled through the sky by enormously powerful Orenda Iroquois jets.

Five Arrows were built. They were flown by Zura, Spud Potocki, Peter Cope and Flight Lieutenant Jack Woodman of the Royal Canadian Air Force. Only 70½ highly-successful hours were recorded before Conservative Prime Minister John Diefenbaker cancelled the program on Feb. 20, 1959. He ordered all Arrows dismantled, erased from the scene.



—CP photo

AVRO ARROW . . . later models of the jet could have been faster than a CF-18 Hornet

Today, the memory of the Arrow lives on — as a constant reminder of a Canadian high-technology triumph that might have been.

Jacques DesRoches, president of the Aerospace Industries Association of Canada, said to avoid the mistakes of the past and to originate and acquire high technology in Canada, there has to be a massive, strategic government plan, by sectors.

"It needs sustained investment and we must know where we want to go and how we propose to get there," he said. "We need to regain our ability to develop major systems."

DesRoches said it all begins in the universities, with the training of professional engineers and an assurance of their future.

"The real tragedy of the Arrow decision is that the government didn't develop an alternative for using the wonderful knowledge available (of the Arrow design and production team)," DesRoches said. "It was an abrupt break in a well-established pattern of innovation and development of highly-specialized products in Canada. We didn't have the leverage in world markets."

When Diefenbaker killed the Arrow program, union officials charged his government with "economic treason, political servitude and moral prostitution." They said Diefenbaker had virtually erased the Canadian-U.S. border in favor of U.S. domination of defence production.

Diefenbaker told the House of Commons that the decision was due to the rapidly-diminishing need for fighter-interceptors and the cost of $7.8 million for each Arrow.

Production aircraft were expected to be $3.75 million each. Approximate cost of a Hornet in today's inflated dollars is around $24 million.

Twenty months earlier, the (military) chiefs of staff had recommended that the Arrow program be abandoned. Six months before the announcement the government made up its mind.

Jim Floyd, vice-president of engineering at the time of the Arrow, says the great loss was enormously talented research-and-development people.

"They were the cream of the crop," he said. "We were able in 1946, starting from scratch, to gather a magnificent team from Canada, Britain, Poland and the U.S. The world will never see a team like it again."

Many who had to sell their homes and find new aerospace jobs, filtered down to the large U.S. corporations. Some joined the U.S. National Aeronautics and Space Administration (NASA) and helped put Americans into space and on the moon.

Many engineers and technicians with McDonnell Douglas and General Dynamics in the U.S., are graduates of the Avro Arrow debacle.

"I took seven to Britain with me," said Floyd. "And we made a deal with NASA for the 30 people they took down there."

Floyd recalled the late Jim Chamberlain, a graduate of the University of Toronto and of the Imperial College of Science and Technology in London, England, who helped run the 12-flight U.S. Gemini space program. Chamberlain, one of the Arrow's designers, won a NASA gold medal for his work. He became a U.S. citizen and died in League City, Texas, in 1981.

Another Arrow graduate was Don Hodges, who became flight director on the Gemini space shots. Alan Buley, an Arrow project designer, is now managing director of Fokker International in The Netherlands.

Floyd, who ran his own consulting company in Britain and advised the government on the supersonic Concorde airliner before coming home to Canada in 1981, blamed much of the Arrow mess on "Canada's fantastic inferiority complex. So many good inventions and ideas are frittered away.

Recalling wistfully the aircraft, on which $335 million and eight years of work had been spent, Floyd said everything new in the way of avionics and weapons today could have been fitted into it. The big weapons bay in the fuselage, had to extend, fire its missiles and retract all in one-third of a second.

"Incredible," Floyd said.

Specifications for the Arrow with the Iroquois engine said it had to pull 2G (twice the force of gravity), maintain manoeuvrability, with no loss of speed, or altitude, while doing Mach 1.5 at 15,000 metres.

"I don't think the Hornet can do that today," he said. "We had an aircraft which would have lasted 30 years. I'm sure it would still have been in service today, if not in production."

Mike Cooper-Slipper and Don Rogers, Avro test pilots who were close to the program, said in many respects the Arrow was as good as the Hornet today.

"I thought the cancellation was just political. Diefenbaker and Crawford Gordon (Avro president) just locked horns," said Cooper-Slipper.

Rogers says he's sure that if the Arrow had been developed, it would have been every bit as good as the Hornet today.

VANCOUVER SUN
APRIL 7, 1983
PAGE A17

RL 893-1983