

The Legacy of the Arrow

Even though it was terminated abruptly in 1959, that the airframes, plans drawings and flight data were shredded, that the Diefenbaker's Government tried to make us believe it never happened, the Arrow project was a reality: A fine group of dedicated and talented people designed, built and flew an aircraft that was many years ahead of its time. The Arrow's legacy lives on, in the Aviation and Aerospace industry, in many of today's aircrafts and in a message to the Canadian people and industries in general.

The Arrow... and the industry

As soon as the Arrow project was terminated, the aviation and aerospace companies worldwide, started making their moves to hire the people left "available" by Avro. The Arrow team was among the best (if not THE best) in the world. Here is a list of some of the ex-Avro staff, where they went and what they did. This list does not pretend to be complete.

Bob Lindley

NASA Director of Engineering and Operations in manned space flight.

Owen Maynard

NASA Space Task Force, Chief Engineering Designer of the Lunar Landing Module

John Hodges

Flight Director, Gemini and Appolo Programs

Fred Mathews

Backup Flight Director, Gemini and Appolo Programs and Director of Flight Monitor and Control

Tex Roberts

Head of Space task Force, Trajectory Group in Mission Control Center

John Sanford

Director of Engineering, North American Aviation, Space Shuttle Launch System

Mario Pesando

NASA Senior Engineering Scientist, Saturn V Project

Bryan Erb

Assistant Manager, US-Canadian Space Station Project

Carl Lindow

Boeing Development Program Manager, Space Programs

Ken Cook

Landing gear Designer, NASA Space Task Group & Concorde Program

Frank Brame

Boeing Chief Project Engineer on SST, 767 and 777 Projects

Alan Buley

Vice-President of Fokker Aviation

Peter Martin

Project Engineer, DeHavilland Canada, DHC2 Beaver and DHC6 Twin Otter

Tom Higgins

Senior Designer, DeHavilland Canada, DHC5 Buffalo

Don Whitley

Aerodynamist, De Havilland Canada

Pat Mckenzie

Engineer, Concorde Program

Colin Marshall

System Specialist, Concorde Program

Joe Farridge

Project Analyst, Concorde Program

John McCulloch

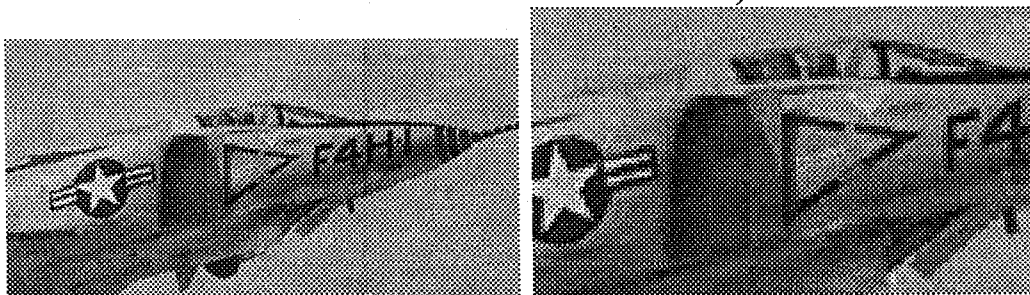
Aerodynamist, Concorde Program

John MorrisChief Aerodynamist, Concorde Program. Director of Advance Engineering,
McDonnell Douglas

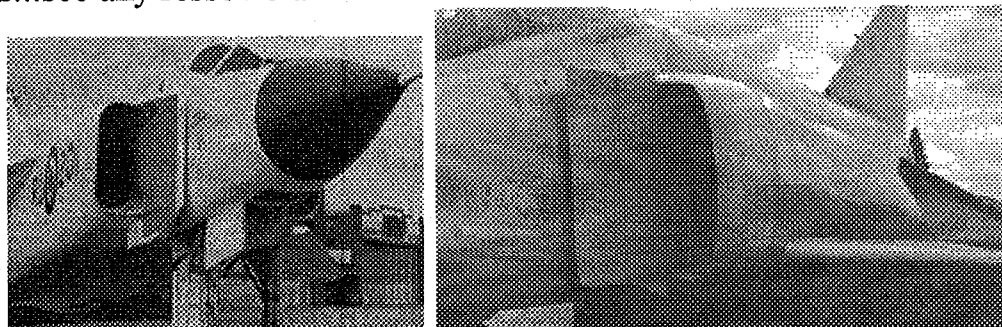
The Arrow... and other aircrafts

The Arrow and the Phantom

If you look at these pictures of the prototype of the F4 Phantom on its first flight (May 27th 1958), you can see the intended engines intakes (Note the rounded top and the splitter plate that is flush with the bottom of the intake hole).



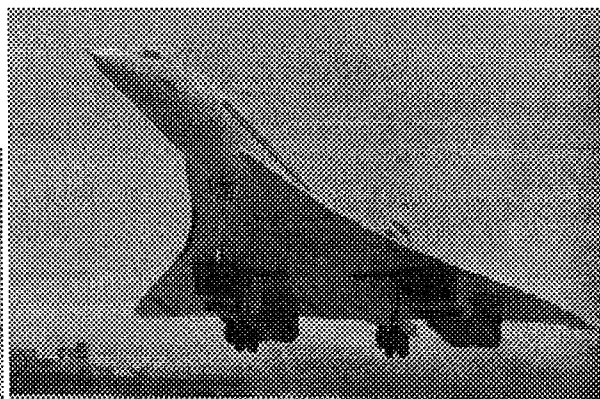
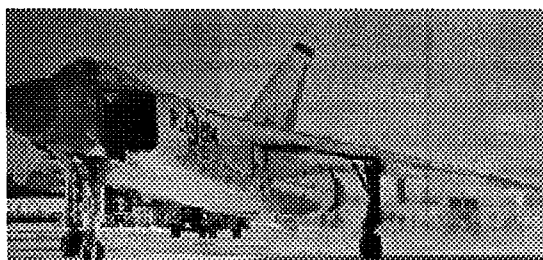
During that time in Canada, the Arrow project was well underway. The Arrow was capable of high angle of attack climbs and accelerations, without any loss of air supply to the engines. This was made possible, in part by the splitter plates that extended under the engines intakes and were cut to angle. In 1959, McDonnell Douglas (manufacturer of the F4 Phantom) presented the F4-A, with slight modifications to the original concept. Take a look at the intakes... and the splitter plates that extend under the intakes...see any resemblance ?



I am not saying that McDonnell copied the Arrow's technologies or findings but the similarities (related or not) show that the Avro's engineers were, once again, on the right track.

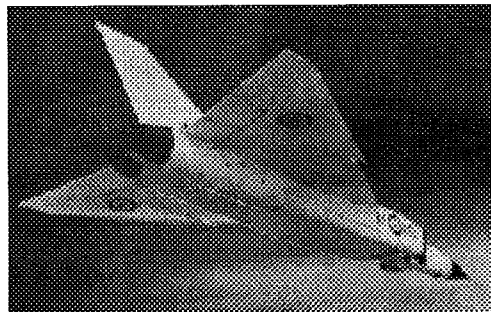
The Arrow and the Concorde

The Arrow was not the only delta-winged aircraft of its time, and it was not the first either. What the aerodynamists of Avro did was to implement a slightly negative curved wing (curved downwards) of the outer portion on the wings. (see photo of RL-204, just after the strut of the main landing gear) As we know, some of ex-Avro's engineers went to work on the Concorde project (so this is not a coincidence). Note the curved wing on the Concorde, just outside the engine's fairing. Note also the resemblance between the landing gears of the two aircraft.



The Arrow and the NightHawk

What can possibly be similar between the Arrow (of 1958) and the Stealth Fighter ? Even though it can not be seen in those photographs, both of these aircraft use the fly-by-wire system. The Arrow was the first aircraft in the world to fly using this technology. Many of today's modern fighters also use the fly-by-wire: The F16, the F18, the Panavia Tornado and the F22, just to name a few. Also note that both the Arrow and the NightHawk use internal weapons bay to reduce radar signature and drag. Today's high-tech systems in an "obsolete" aircraft of 1958 !! The Arrow was truly ahead of its time.



The Arrow... and Canada

Many said that the shutting down of the Arrow project would be the final blow to the Canadian Aeronautics Industry. Indeed it was a great one, but the industry survived.

Canada continued to produce military aircrafts (under license), while adding Canadian contents and innovations. For example, Canadair designed a more powerful, longer-ranged, air- refuelable CF-116 Freedom Fighter, while DeHavilland built a shorter CP-121 Tracker with superior radar systems. Improving on other people's designs is good but the Canadian Aeronautics Industry wanted to do more.

So it turned to the civilian market, and started climbing back to the top. The DeHavilland Canada family of aircrafts is known and appreciated worldwide; Beaver, Otter, Twin Otter, Caribou, Buffalo, Dash 7 and Dash 8.

The Canadair aircrafts also enjoy worldwide fame; The CL-215 and 415 water-bombers, Challenger, Regional Jet and Global Express.

How many aircrafts, built in Canada or around the world, get airborne every day using the Canadian designed and Canadian built Pratt & Whitney PT-6 family of turboprops engines ? How many pilots train in a flight simulator built by CAE ? What would the Space Shuttle be without the Canadarm ?

We could go on and on, talking about Canadian products on the international scene. I guess that some Canadian industrials got the message, hidden in the Arrow project: Canada has the capacity, the talent and the knowledge to compete against any nation in the world, in any field of expertise if the most important ingredient is present: **desire...**

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