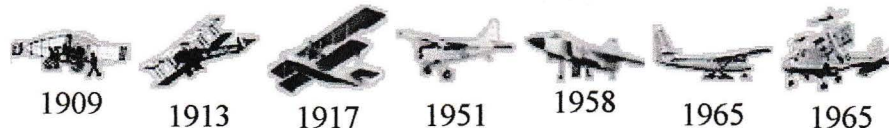


Milestones



Avro Arrow



For an in-depth look at the Avro Arrow story
Check out

[**EXN's Arrow site**](#)

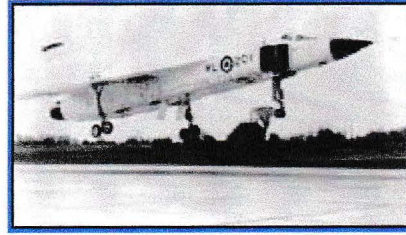
The fascinating rise and demise of the Avro Arrow is a chronicle of triumph and tragedy for Canadian aviation. Born deep in the Cold war (it was rolled out on October 4th 1957 -- the same day the USSR launched the Sputnik) the Arrow bore from the first the uniquely Canadian quality of functionality in a vast and limitless wilderness. It was envisaged as North America's first line of defense against the supersonic bombers believed to be under development in the Soviet Union, which would attack from across wastes of the great North.

Before giving the green light to Avro, the RCAF sent a top level evaluation team to assess all the countries in the Western alliance to find out if anyone was working on a craft that met their requirements. No one was. The Arrow was to be a twin-engined aircraft with a crew of two, a supersonic interceptor to destroy any enemy threat in the next decade or beyond, and was expected to fulfill a grueling performance specification issued by the RCAF in 1953.

It was a spec that Jim Floyd, Vice President of Engineering at Avro Canada's Malton headquarters and the man responsible for the development of the Arrow, described as "overkill". It called for a manoeuvre capability of at least 2 G at Mach 1.5 at 50,000 feet at full weight with all combat missiles aboard. This daunting list of requirements, which can scarcely be exceeded by combat aircraft today, was the reason the Arrow was to be powered by enormous engines especially designed for it, and had to stow all missiles inside for maximum drag reduction.

The Arrow was designed as a delta winged craft without a tail plane, an "inevitable compromise between aerodynamic, structural and aerolastic efficiency," as Floyd put it. The range of the new craft was specified at 200 nautical miles, which included five minutes of combat at Mach 1.5. Avro, however, considered this too little, and designed the aircraft for ranges of up to a 650 n.m. radius. A subsequent reconnaissance version of the Arrow was planned which would have a range of 2000 n.m.

While Avro's Gas Turbine Division (later to become Orenda Engines) was working on the powerful Iroquois engine that was to be used on the Mark 2 series, test flights went underway using an interim engine, the Pratt and Whitney J75 engine. When test flights began, the craft easily met all guarantees, according to Jack Woodman, the RCAF evaluation pilot assigned to the project. By the third test flight it broke the speed of sound, eventually reaching speeds as high as Mach 1.98.



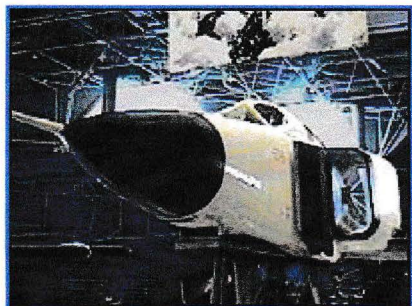
With the new Iroquois engine, which delivered considerably more power, the Arrow was expected to break world speed records. Indeed, projected versions of the plane were to go as fast as Mach 3. But on the 20th of February, 1959, days before the new Mark 2 series bearing the Iroquois engine was about to be tested, the bad news broke -- the Arrow was to be cancelled.

Avro was instructed to immediately halt all work, and to destroy all prototypes and plans. Employees were sent home, and 14,000 people lost their jobs. The cancellation is widely credited with contributing to the growing Canadian brain drain of the period - NASA grabbed up many of the key people displaced by the move, as did the Concorde and other projects.

The cancellation was a contentious affair, and its justification or demonization has been the subject of considerable debate. At the time, the threat that inspired the formidable characteristics of the Arrow, namely that of manned Soviet bombers emerging from across the polar regions, was perceived to be diminishing. The new menace of the day was believed to be from nuclear missiles, and missiles were to be the means of defense.

The Museum exhibit includes the only remaining parts of the Arrow to survive -- the nose and cockpit section from the Arrow RL 206, a main undercarriage leg, a PS-13 Iroquois engine, the outer wing panels and various smaller components.

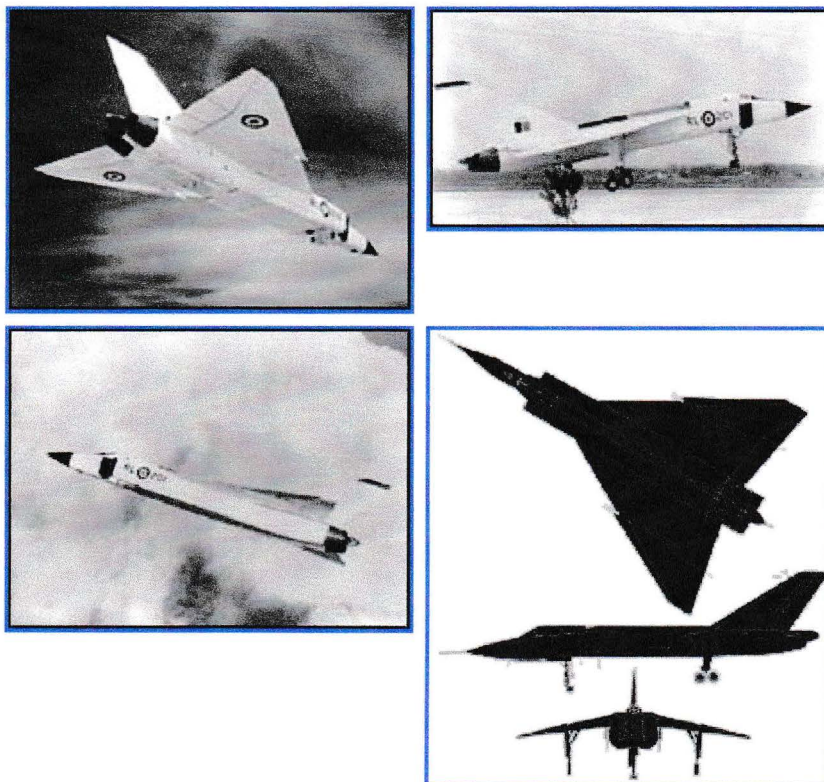
Multimedia



Click on the image for a video tour of the Museum's Arrow exhibit.

Audio Jan Zurakowski flew the first Arrow, achieving speeds of Mach 1.98. **Click here** and hear him talk about the day the project was cancelled.

Avro Arrow Gallery



Specifications

Period: Postwar

Uses: Interceptor

First Flight: 1958

Manufacturer: A.V. Roe Canada Ltd., Canada

Wing Span: 50 ft (15.2 m)

Length: 85 ft 6 in (26.1 m)

Height: 21 ft 3 in (6.5 m)

Weight, Empty: 43,960 lb (19,935 kg)

Weight, Gross: 62,431 lb (28,319 kg)

Cruising Speed: 701 mph (1,128 km/h)

Maximum Speed: 1,524 mph (2,453 km/h)

Rate of Climb: 50,000 ft (15,240 m)/4 min 24 sec

Service Ceiling: 58,500 ft (17,830 m)