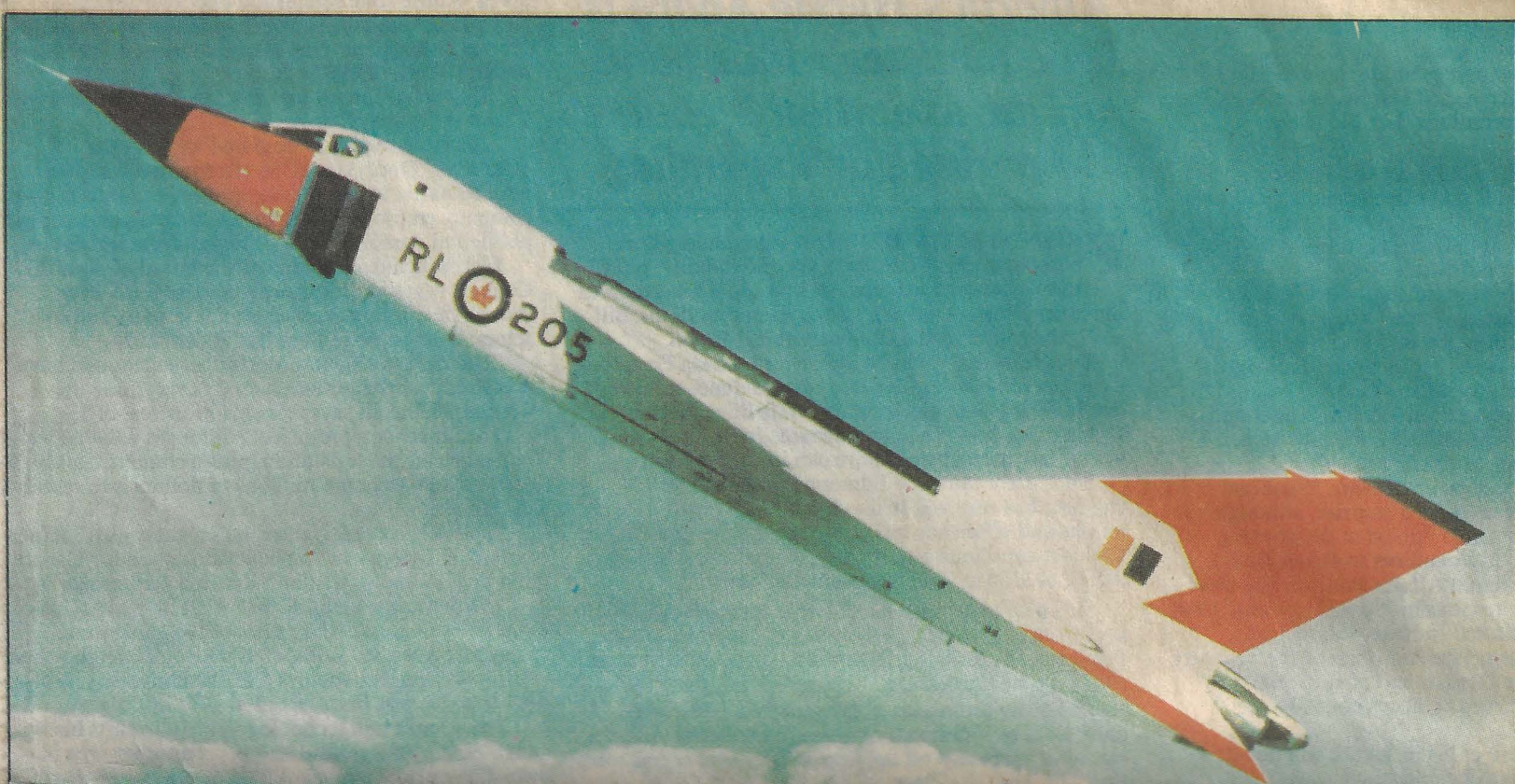


Eyeopene

From airplane to mythological creature



The day they shot down the Arrow

The fifth of six Arrows built soars over Ontario on its first and only test flight, less than six weeks before the project was cancelled. The move dismembered what was called the finest industrial design team ever assembled in Canada



PICTURE, DRAWINGS: courtesy Boston Mills Press

The CF-105 flew faster 30 years ago than Canadian Forces jets do today. Diefenbaker killed the project and controversy rages still

By JIM ROBB
Ottawa Citizen

JOHN DIEFENBAKER slew a dragon on a bitterly cold February Friday 30 years ago. He created a legend, and a controversy that rages to this day.

The dragon and now the legend is the Avro Arrow, the supersonic interceptor fighter plane that was ahead of its time and, in the government's eyes, beyond the ability of this country to bankroll.

Three decades after the fateful Feb. 20 that ended its career, the fabled aircraft lives on in six books, stories, souvenirs, memorabilia, and in the minds and memories of men old and young as the ultimate "might-have-been."

There are those who still rage at Diefenbaker for doing in the aircraft. Others still feel an overwhelming sadness at its loss.

The decision to cancel the Arrow was "absolutely flat wrong," says retired air force

Next: nuclear-powered submarines B6

Brig.-Gen. John Collins. As a junior officer, he worked on the Arrow armaments design and later held a high ranking NORAD command position and served as an adviser on space policy to defence headquarters staff.

"Diefenbaker not only misplayed his cards, he didn't understand the cards he had."

What he had, historians and experts agree, was an aircraft that was unparalleled in speed and performance.

Arrow test pilot Jan Zurakowski suggested in his foreword to a new book on the plane that the Arrow was flying faster 30 years ago than the CF-18 flies today. He also said that its performance was similar to that achieved by the Soviet Union's MIG-31, which went into service in 1983.

The Arrow and its interim engines had a sizzling rate of climb that could more than

match its contemporaries. It could climb at 38,450 feet a minute and was designed to operate at near 70,000 feet in altitude.

Collins says Diefenbaker might have been able to extract a deal from the Americans to support development of the Arrow in exchange for signing the first NORAD agreement.

From cancellation of the Arrow "it took less than 20 years" for Canada to become third rate in technology, Collins says.

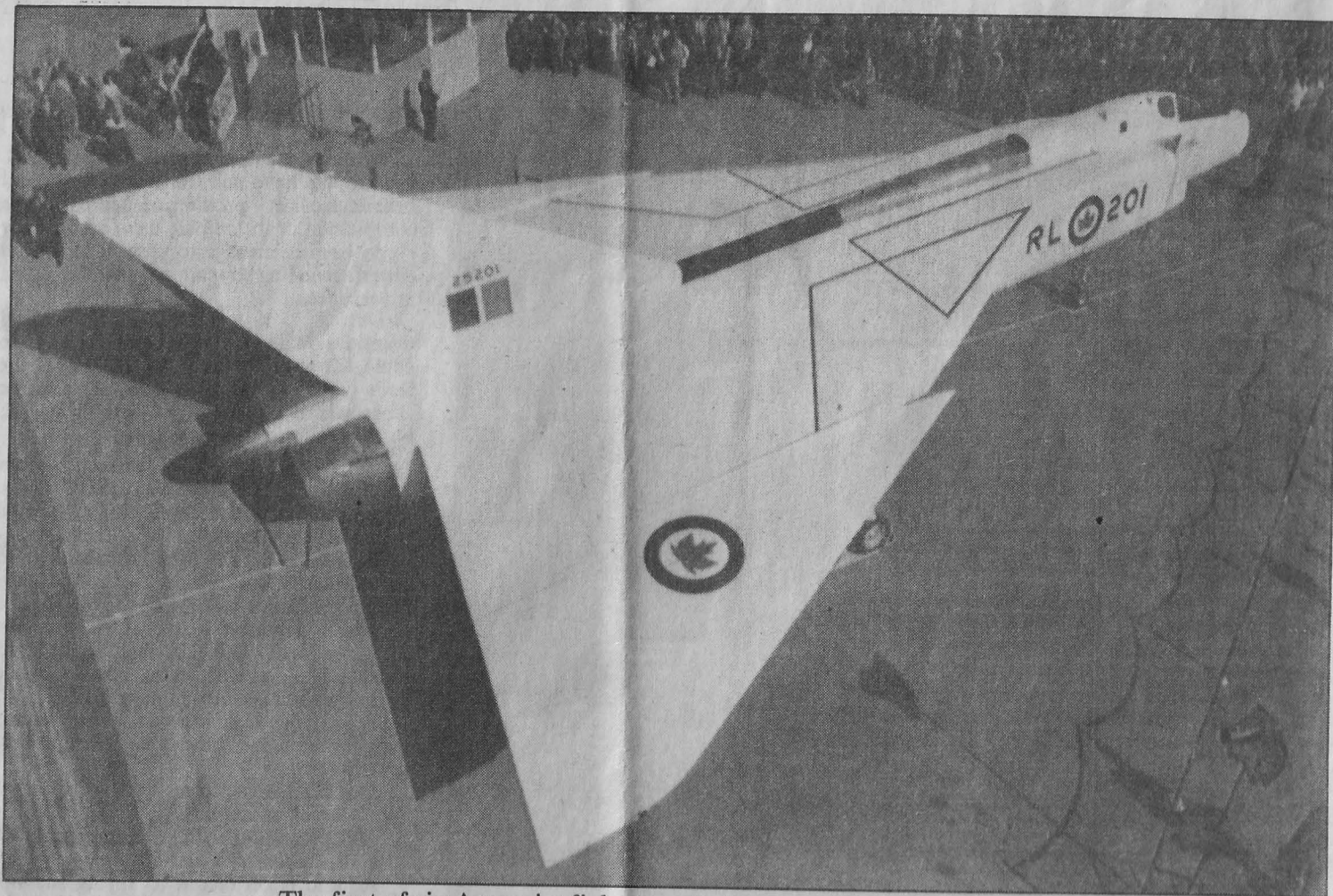
Arrow designer Jim Floyd says the decision to kill his beloved aircraft was "absolutely irresponsible" because Canada had to replace it at almost the same cost with an American fighter.

BUT IN THE EYES of many others, the military marvel held the capacity to bleed white the federal treasury. In less than a decade it had chewed up close to \$400 million

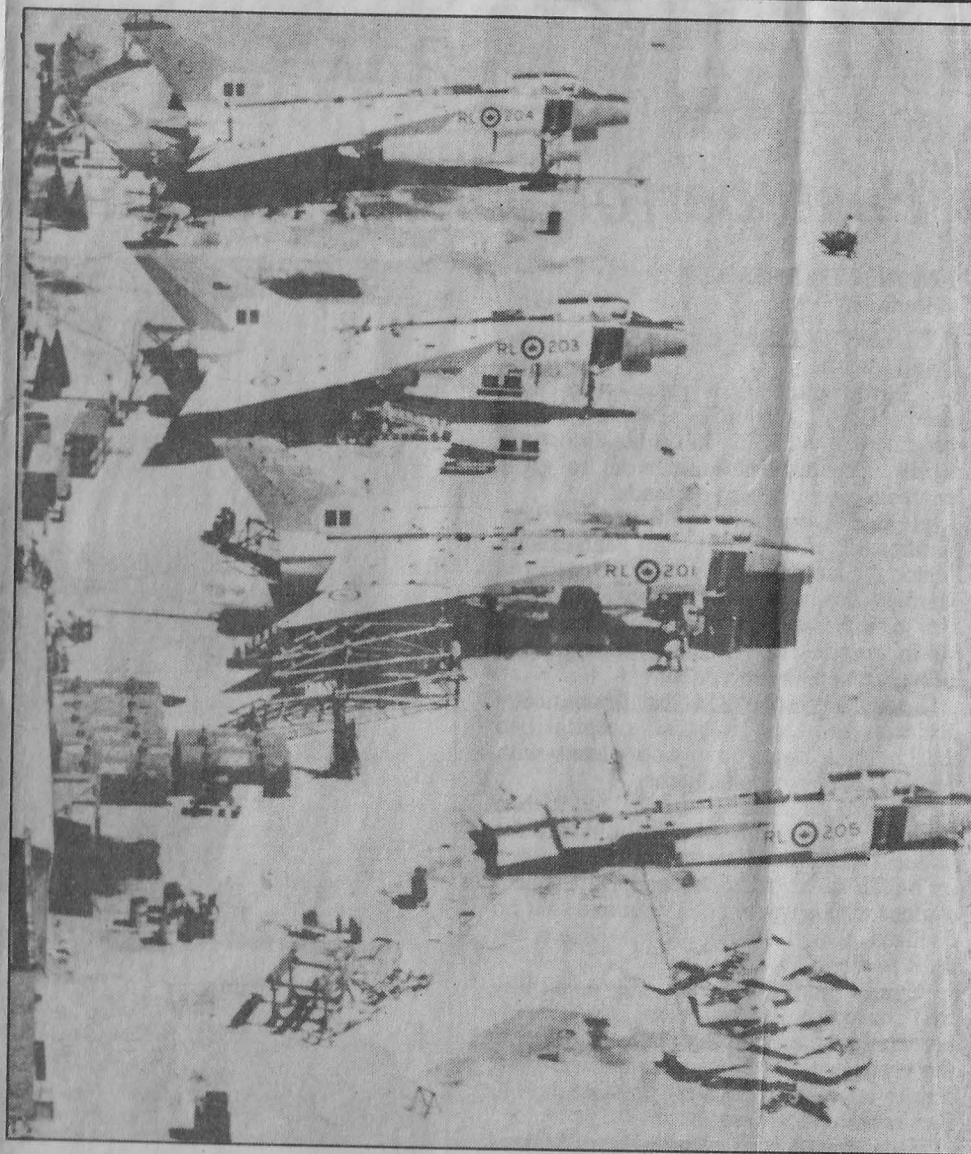
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Canada

The Arrow



The first of six Arrow jet fighters at its inaugural roll-out on Oct. 4, 1957
... it was a 'magnificent, frivolous thing' which no-one wanted to buy — but it has become a legend



The planes were dismantled for scrap after the cancellation
... the government's move had a devastating impact on people and jobs

'Diefenbaker was frightened of the cost'

ARROW

(Continued from Page B1)

in development costs. In those far off days, that vast sum made it a megaproject in the same league as the massive St. Lawrence Seaway and the controversial TransCanada pipeline.

"Diefenbaker was frightened of the cost," says Greig Stewart, author of *Shutting Down the National Dream*, the latest book to explore the plane and the extraordinary grip it has on the Canadian imagination. "Even C.D. Howe (Liberal defence production minister and the man ultimately responsible for giving the go ahead for Arrow development) was frightened of the cost."

Stewart and others are certain that if the Liberals had been returned to power instead of the minority Conservative government following the 1957 election, Howe would have cancelled the Arrow program too.

"The Arrow was a super-duper technological achievement but it was a champagne taste on a beer budget," says Fred Shortt, curator of the National Aviation Museum.

More than cost influenced the cancellation. Military thinking was downplaying the need for manned fighters because of a perceived decrease in the threat from Soviet bombers. Missiles became the focus of military thinking and when the Arrow was cancelled, the government announced it was acquiring U.S. Bomarc missiles for air defence.

"No government tried harder to save the Arrow than the Diefenbaker administration, but no other country would buy the thing from us," says retired MP Alvin Hamilton, a Diefenbaker cabinet minister.

Faced with an aircraft that had only one possible buyer and that threatened to plunge his government into heavy debt, the Conservative prime minister bit the bullet. He brought the eight-year development program to a shuddering halt with an



John Diefenbaker, at the time
... his gov't tried to save the plane

unheralded announcement to the Commons at 9:30 a.m. on Friday, Feb. 20.

It was "Black Friday" for some 14,000 workers in A.V. Roe Canada's aircraft and engine companies — 2,000 members of the Arrow design team, and another 12,000 executives, office employees and production workers. A.V. Roe Canada fired them the same day.

THE DECISION dismembered what many acknowledge was the finest industrial design team ever assembled in Canada. The team had designed and built the CF-100. The first operational jet fighter designed in this country, it first flew in 1950 and more than 600 were manufactured by 1958. The team also created the Orenda engine that powered the CF-100 and the Royal Canadian Air Force's Sabre fighters.

The six completed Arrows and another

five on the assembly line were soon to be cut up for scrap.

It also destroyed the hundreds of small companies dependent on the Arrow as a main market for their products.

Within months, a massive drain of talent flowed to the United States as American aircraft companies and the U.S. space program snapped up the suddenly available Canadian engineers.

It was that human loss plus the abrupt and poorly orchestrated way in which Diefenbaker did the inevitable that contributed to the outcry then and the controversy that continues to this day.

University of Toronto historian Robert Bothwell, Howe's biographer, says the Liberal industrial czar was ultimately responsible for the Arrow fiasco. Howe, as minister of defence production, gave the go ahead for the Arrow in 1951.

A.V. Roe Canada and its complex of engine and aircraft companies owed their existence to Howe's drive and support. In the immediate postwar years, he was doing everything at any cost to keep Canada's wartime-spawned aircraft industry intact and on the leading edge of technical development.

But Howe and fellow Liberal ministers failed to put the brakes on Arrow spending even when costs began to worry the government.

Bothwell says the Arrow was finished when the British rejected the Liberal government's efforts to sell the interceptor to the Royal Air Force before the 1957 election. That, plus American refusal to purchase anything but American-built aircraft, sealed the Arrow's doom.

SALVAGING something from the Arrow program rather than simply scrapping it "would have required more scientific management (skill) than the government of Canada had at the time," says Bothwell. He said cabinet had "no high-powered science adviser."

Defence analyst Brian MacDonald, of the Canadian Institute of Strategic Studies,

says the Diefenbaker government was between a rock and a hard place because the Canadian market for such an expensive aircraft — projected per plane cost had climbed from \$2 million in 1953 for 600 aircraft to some \$12.5 million when the program was cancelled — was small and there was no external market.

The decision, he says, was a major turning point in Canada's defence production industry. MacDonald says Canada hasn't attempted to design and produce a complete weapons system since.

Shortt says the impact of the Arrow cancellation can be seen even today in Canada's Challenger business jet. It's Canadian-designed and Canadian-built but most of the components are from the U.S.

Shortt says the Arrow was "one of the most advanced aircraft of its day."

If it had been fitted with new Canadian-designed Iroquois engines it could have established a world speed record. The record at the time of 2,260 kmh was held by the American Starfighter.

The Arrow, unfortunately, never flew with the Iroquois engines. It was cut up for scrap before any were installed.

Even without the Iroquois engine, the Arrow was fast. In one test, it flew at 2,125 kmh with its interim American engines. That's about the same speed the CF-18 flies at today.

AVIATION HISTORIAN and writer Larry Milberry believes that Diefenbaker made almost the only decision possible.

The Arrow, he says was "magnificent" but also "a frivolous thing," a one-task interceptor for high flying Soviet bombers at a time when that threat was diminishing.

Milberry doesn't buy the argument that the Arrow cancellation ruined the Canadian aircraft industry.

"There was a devastating immediate impact on people and jobs," he says. However, he feels today's aircraft industry "has never been healthier."

Telesat Canada chairman David

Golden, who was deputy minister of defence production in 1959, once told the CBC "there never was an Arrow," in the sense of a completely operational fighter, says it was a big mistake to embark on a project of such magnitude.

Getting involved in that kind of project, he says, makes "even the wealthiest countries nervous."

Golden says the Liberals would likely have terminated the plane after the 1957 election, if they had won.

And 1957 cabinet documents released last January suggest Diefenbaker held off the cancellation until 1959 because he feared Avro layoffs could have damaged his 1958 election chances.

The government was also under pressure from the army and navy brass, who feared that if the Arrow continued to gobble up funds there would be none left for their services.

Scientist George Lindsey, who retired in 1988 after a lengthy career as head of operational research and analysis at the Department of National Defence, says the 1950s "were great days for Canada's defence (establishment). It's been downhill ever since."

Lindsey says the engineers involved with the Arrow "really had their tails up" with pride.

"People with a knowledge of economics could see it was doomed," he says, but the designers weren't prepared to listen.

"For 10 years after the Second World War, when the armed forces wanted something, the government bought it," Lindsey recalls.

With the Arrow, "it was the first time that stopped being the case."

While the Arrow is long dead, the controversy surrounding it has continued unchecked for 30 years. The aircraft has become a part of Canadian folk history.

Says aviation museum curator Shortt, the long-gone aircraft has ceased to be just a plane and has become "a mythological creature."

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