Our Canadian Aerospace Industry:
Towards a Second Century of History-making

Presentation by

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Good morning, Ladies and Gentlemen.

It is a pleasure for me to be here today and acknowledge the presence of so many friends and business partners.

Next year, Canada will mark the 100th anniversary of the first airplane flight over our land. In February 1909, a pioneer by the name of J.A.D. McCurdy took to the sky in a frail-looking biplane called the Silver Dart. Young McCurdy and Canada's tiny aviation community never looked back, and as a result, their daring achievement led to the development of a whole new industry — our own aerospace industry.

How did a country with a population of 7 million in the early 20th century become the fourth nation in the world in the field of aerospace? How did Montreal become the only place in the world where you can build an entire aircraft? How did we manage to attract, develop and hang on to global leaders like Bell Helicopter Textron, Pratt & Whitney Canada and Bombardier? And, closer to my own heart, how did an enterprise like CAE become a world leader in civil simulation, with more than 70% of the market? How can a country as small as Canada, have such a glorious jewel in its crown?

To find the answers to these questions, one must go back in time.

Shortly after McCurdy's groundbreaking flight, World War 1 saw Canada's aviation industry take off. Almost overnight, Canada became a training ground for British pilots and, as quickly, a manufacturer of training planes. This led to the creation of Canadian Aeroplanes Limited, a dedicated crown corporation that manufactured nearly 3,000 planes at its peak.

With the end of the First Great War, many of our returning pilots wanted to continue flying and soon the country's first bush flying operation entered into service. Laurentide Air Service was thus launched in the summer of 1920.

The need for improved aircraft led Montreal-based Canadian Vickers to design the "Vedette" — Canada's first specialized bush plane, which was sold to Chile. It was the first Canadian production plane to be exported.

As demand for aircraft from commercial operators and the Royal Canadian Air Force increased, other Canadian manufacturers appeared.

De Havilland Canada and Pratt & Whitney Canada started operations in 1928. Noorduyn Aircraft developed its first "Norseman" bush plane in 1935 in Montreal. In spite of the Depression, each firm struggled and survived, and eventually blossomed as orders for military aircraft poured in during World War 2.

By this time, Montreal and Toronto were Canada's key aviation industry hubs and Boeing also had a solid presence in Vancouver. In 1935, Canada's aircraft industry totalled about 4,000 employees producing 40 aircraft annually. During the second war, this would soar to a peak of 116,000 workers with 16,500 aircraft built during the conflict years. Furthermore, over 130,000 air crew members graduated in all trades from the British Commonwealth Air Training Plan at bases across Canada.

At the same time, the Canadian government was in talks with our neighbour to the South. The collapse of France in 1940 begged the question: What if Britain also fell to the Nazis? In the worst-case scenario, North America would be facing a Nazi-dominated Europe.

So both President Roosevelt and Prime Minister Mackenzie King agreed that our governments needed to work with the industry to ensure military self-sufficiency. In 1941, they signed the Ogdensburg Agreement – creating a joint board to oversee defence and harmonize Canada and U.S. defence resources. They followed through with the Hyde Park Declaration, designed to make the most effective use of our production facilities in Canada and the U.S.

When World War 2 officially ended and European countries started repatriating their capabilities, Canada was left with an unprecedented wealth of highly qualified people and of transferred technology. With strong government support, we continued building innovative aircraft.

The post-war boom heralded many Canadian firsts with Canadair producing the “North Star”, Canada’s first modern airliner; the “Tutor”, a basic jet trainer, selected by the Royal Canadian Air Force and the “Yukon”, the first swing-tail cargo aircraft among others.

De Havilland also pioneered the Short Take-Off and Landing market, introducing the “Beaver”– the world’s first short-take-off-and-landing utility transport, as well as one of its most famous bush planes.

Avro Canada developed the “Avro Arrow”, a supersonic aircraft well ahead of its time. The Arrow was widely recognized as both an advanced technical and aerodynamic achievement for the Canadian aviation industry. It held the promise of Mach 2 speeds at 50,000 feet or more. Unfortunately, this project was cancelled in February 1959 on what’s known today as Black Friday.

On the government of the day's orders, the five Arrow aircraft already built were destroyed for scrap metal and sold for six and a half cents a pound to a Hamilton junk dealer. The cancellation struck a terrible blow by putting more than 50,000 people out of work at the plants and their outside suppliers. What happened to this great pool of talent? Fortunately, many stayed in Canada and continued to work in the aerospace industry. Others moved to Europe to become important players in developing the now retired Concorde. Others moved to the USA to work on the US Apollo space program which put a man on the moon.

In the mid-1950s, Canada was already impressing the world with our talent in aerospace. In those years, with the Ogdensburg and Hyde Park precedents, another development involving this country and the United States would again benefit our industry. Our respective governments concluded the Canada/U.S. Defence Production Sharing Agreement, known as DPSA, which set up a common market. The goal was to better utilize all of the industrial, scientific and technical resources of our two countries towards our mutual defence.

These were very important programs, which made it possible for Canadian companies to perform R&D work to meet the requirements of U.S. Armed Forces. They also allowed Canada to establish second-source production facilities and gave us priority access to the significant U.S. defence market.

Many significant projects would later be funded through the Defence Industry Productivity Program, known as DIPP, which followed. Its initial focus was the defence sector but the concept of dual-use civil/military projects was embraced by the late-1960s. It importantly put Canadian companies on a level playing field with their foreign competitors who were supported by their governments.

During this period, Canadair developed the world's first purpose-built water bomber, the CL-215; the world's first surveillance drones as well as the CL-84,the vertical take-off and landing aircraft. It also launched Canada as a leading manufacturer of business and regional jets when it introduced the "Challenger", the first purpose-built wide body business aircraft.

For its part, Pratt & Whitney Canada developed the PW200 turbo shaft engine, the leader in the light helicopter market; and the PW300, an advanced technology engine of choice in the mid-size business jet market. And I should mention the PT6, the most successful turbo prop engine of all times.

CAE also pioneered several simulation training firsts at that time, including:

- the introduction of a newly designed six-degrees-of-freedom motion system;
- the use of workload-reducing CRT displays in instructor stations;
- simulation's first low-friction hydrostatic flight control-loading system with accurate digital/analog technology;
- the first new generation combat simulators;
- the first fully hydrostatic motion system.

During these years, the Royal Canadian Air Force became a prime customer for CAE's CP-107 Argus fully integrated tactical anti-submarine mission aircraft. CAE also received its first order for a digital-flight simulator, and by the late-1970s, it had grown internationally holding 50 per cent of the world's commercial flight simulator market!

These few examples are testimony of the innovative spirit of this period. Working with our government, our industry was able to make great strides and Canada had already become a world leader in aerospace.

Then, in the mid-1980s, the economy began to slide and the government divested itself of crown corporations. First Canadair, then de Havilland were privatized, DIPP was cancelled and a new program introduced

Technology Partnerships Canada or TPC you will recall, was set up to provide funding support for strategic R&D and demonstration projects that produced benefits to Canadians. The bulk went to aerospace. But, contrary to DIPP, which included important defence projects, the new TPC opened the door for discussions under the World Trade Organization to the detriment of many companies. We all remember the struggle between Bombardier and Embraer, which garnered quite a bit of attention in the media.

While this new program may not have been perfect, several companies leveraged real success stories during the TPC years:

- We all know of Canadair's success with the regional jet.
- Pratt & Whitney Canada developed and advanced innovative engine technologies, including the PW308, the largest and most complex turbofan jet engine ever designed, built and certified in Canada.

- Héroux-Devtek, in collaboration with Messier-Dowty and B. F. Goodrich, developed new, more environmentally-friendly landing gear coatings. Their technology also shortens processing time and is expected to be less costly for both suppliers and aircraft operators.

- My own company, CAE has had many programs under TPC. We used it to simplify the operating systems for our training systems, making them available over the Internet for distance learning. Our latest R&D program, called Phoenix, has already produced a new, more cost-effective simulator— the CAE 5000 Series that we launched in 2007. This breakthrough product addresses training requirements for high-volume commercial narrow-body aircraft, as well as the business jet market. We have already sold 14.

Despite its many successes however, concerns were raised about minimal TPC funding repayments, a significant factor in developing what would follow the TPC – the Strategic Aerospace and Defence Initiative, or SADI.

This brings us to the present day.

Let us take a moment to look at the Canadian aerospace sector today:

- $23 billion in revenues, with 82% exports;
- 82,000 jobs;
- At an average salary of $70,000, our employees are paid $4.8 billion a year;
- Approximately $1.5 billion in annual income taxes;
- 1.6 billion invested in R&D in 2007—more than half of which was spent by the top 5 spenders alone;
- World leadership for small engines through Pratt & Whitney Canada, in regional jets through Bombardier, in simulation through CAE, and much more.

Although Canada currently ranks fourth among nations, China, Korea, Japan, India and others have put the world on notice that they are starting to build their own aerospace industries.

We all recently witnessed the Olympic Games held in Beijing. They demonstrated that when China is determined to succeed, it could accomplish anything. And who would have thought, decades ago, that Japan and South Korea would one day cause the automotive plant closures we are now witnessing in North America?

Several questions come to mind:

- where is our industry going?
- what must we do to ensure its continued success?
- How can we keep R&D in Canada and continue to develop our talent pool here?
- How can we avoid a brain drain like other sectors are experiencing?
- What does it take for companies to continue to want to invest in our industry and our country?

Today, information can be transmitted at the speed of light, so geography plays but a minor role in our industry, and in fact, in business as a whole. As such, when companies are looking to invest and develop new products, what they look for is a great talent pool, the stability to ensure success, contract potential and government support to ensure a level-playing field on a world scale.

Together with our partners in government, we have created a jewel that benefits all Canadians and the world through our ever-advancing technologies. We have achieved this because of our great pool of talents

that have consistently developed the most advanced products in their field, and because we had a government that supported our industry through various programs or through defence contracts.

Moving forward, we need to realize that the civil and military aerospace industry around the world is closely linked, especially given the obvious movement towards globalization.

We must also accept that there is a new market reality out there.

We have seen that the development of electronics is very quickly taking over the aerospace industry. We have witnessed this through the design and development of new aircraft simulators and in the aircraft cockpits where fly-by-wire is now the standard.

As mentioned, other countries are entering the industry at an incredibly fast pace and we are facing the development of huge markets in China and India.

So, what do we need to do to ensure we have the right foundations for the future?

The first factor that comes to mind is a stable environment, an environment where support is for the long-term. Specifically, that translates into our government's continued support

- through programs like SADI;
- support in keeping the doors open to international trade in order for our Canadian aerospace companies to have unfettered access to foreign markets; and
- its strong commitment to our industry while it rebuilds Canada's military.

Canada may be a relatively small country, but we have earmarked $20 billion for defence spending over the next 20 years to ensure our troops are properly equipped. As such, we, as an industry, must not only be allowed to compete for the related contracts, but be assured that quality Industrial Regional Benefits and military procurement will go to Canadian firms that are recognized as world leaders. Therefore, the associated IRBs for this $20 billion investment should mean as much as $20 billion of quality contracts to Canadian companies and incremental activity in Canada over the next two decades. Canadian companies should also be in a good position to get ISS contracts, allowing them to leverage their expertise to other countries later. With this kind of long-term commitment, we can leverage the expertise gained around the world.

If we want to continue having the strong aerospace industry we have in Canada, we require partnerships with the government we can depend on. When Canada embarks on military programs, such as the Joint Strike Fighter program, our industry should be involved in the discussions. We have insight and expertise that can only add value to these important forums. To this end, our industry also should also be part of any policy development related to our national security and defence.

As Canada prepares to celebrate the 100th anniversary of its first airplane flight, it is overwhelming to think of how much history we have repeatedly made over the last century. And, how we have continuously pushed the technological envelope in ways our predecessors could only have imagined.

Our capacity to maintain our leadership position is within our reach.

At the end of the day, our Canadian aerospace industry is not only an engine of Canada's economy, but also a source of great pride for all Canadians. I, for one, am certainly proud to be a part of it, as I know all present are. Thank you.