

[AEROSPACE INDUSTRIES]



INVEST IN CANADA



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Canada's competitive advantages

Canada



CANADA'S AEROSPACE SECTOR

Canada ranks third globally in terms of civil-aircraft production — a remarkable achievement given the country's relatively small population. With some 700 companies, Canada's aerospace manufacturing and maintenance, repair, and overhaul industries are estimated by Industry Canada to have generated direct annual revenues of more than \$28 billion in 2014. The sector directly employs 76,000 people and is responsible for approximately 180,000 jobs across Canada. Highly integrated into global value chains, the industry is reported to export 80 percent of its production. Although focused on civil aviation, the industry also serves a remarkable diversity of market subsectors. ¹

The Canadian aerospace sector is an international leader in terms of export intensity and trade diversity, with value chain partners in the United States, Europe, Asia and South America.

Thanks to Canada's membership in the North American Free Trade Agreement (NAFTA) and one of the world's best multi-modal transportation systems, the sector is well integrated into the North American market.

Aircraft parts manufacturers based in Canada typically enjoy a 32.6 percent saving on total labour costs (including benefits) relative to their U.S.-based counterparts. When all cost factors are considered, Canada has the lowest cost structure among G7 countries. ²

The aerospace-manufacturing sector is one of the most research and development (R&D) intensive in the Canadian economy. Nearly 20 percent of its activity is dedicated to R&D, representing a \$1.8 billion investment in 2014. ¹

Canada's expertise in flight training is also recognized around the world. In 2015, Canada's 169 certified flight schools issued 1,186 commercial-pilot licenses. ³ Canadian flight schools provide training in diverse climates and geographies, enabling pilots to develop superior professional skills.

Canada's Maintenance, Repair and Overhaul (MRO) sector generates more than \$7.4 billion in annual revenues and directly employs 30,000 highly skilled workers. ¹ Its strengths include:

- Full 'nose-to-tail' services for single and twin-aisle commercial transports, regional jets and turboprops, as well as business and military aircraft, and helicopters
- Engine and accessory repair and overhaul for gas-turbine and piston engines

CANADA'S KEY STRENGTHS

- | | |
|--|--|
| ▪ Commercial and business aircraft | ▪ Flight simulation, pilot and air-traffic-control training |
| ▪ Helicopters | ▪ Landing-gear systems |
| ▪ Utility and general-aviation aircraft | ▪ Advanced-composites manufacturing |
| ▪ Aircraft engines | ▪ Airframe, engine and component MRO |
| ▪ Avionics | ▪ Satellites, robotics and space-based services |
| ▪ Aerostructures | ▪ Product development and testing for cold weather conditions |

¹ Industry Canada. The State of the Canadian Aerospace Industry: 2015 Report.

² KPMG. *Competitive Alternatives 2016*.

³ Air Transport Association of Canada; Transport Canada (2015).

AEROSPACE CLUSTERS



WESTERN PROVINCES

- » Aerostructures, composites, airframe MRO, helicopter MRO, defence electronics, space systems, earth observation, engines, engine MRO, small-aircraft manufacturing , cold-weather engine testing
- » **Leading companies:**
Asco Aerospace Canada Ltd., Avcorp, Boeing Canada, Cascade Aerospace (IMP Group), Vector Aerospace (Airbus Group), General Dynamics Canada, KF Aerospace, Magellan Aerospace, MacDonald Dettwiler and Associates (MDA), Pratt & Whitney Canada (P&WC), StandardAero, Viking Air Ltd

ONTARIO

- » Rotorcraft manufacturer, commercial and business aircraft, satellite-payload subsystems, landing gear, ECS, electrical power, engine parts, MRO, space robotics, display systems, aerostructures, gears and gears assemblies, engines
- » **Leading companies:**
Airbus Helicopters Canada, Bombardier, United Technologies Aerospace Systems, Honeywell Canada, Magellan Aerospace, MDA, Messier-Bugatti-Dowty, L-3 Electronic Systems Services, MHI Canada Aerospace, Northstar Aerospace, P&WC

QUEBEC

- » Aerostructures, civil helicopters, commercial and business aircraft, training and simulation, avionics, engine components, landing gear, engines, engine MRO
- » **Leading companies:**
Aerolia, Bell Helicopter, Bombardier, CAE, Esterline CMC Electronics, GE Canada, Héroux-Devtek, LSI, Mechtronix, P&WC, Premier Aviation, Rolls-Royce Canada, Safran, Stelia,Thales Canada, Turbomeca Canada

ATLANTIC PROVINCES

- » Precision machining and complex assemblies, composites, gas turbine MRO, MRO, design and manufacturing, engines
- » **Leading companies:**
APEX Industries, Bluedrop, Vector Aerospace (Airbus Group), IMP Group, P&WC, Slemon Park

RECENT INVESTMENTS

COMPANY	BUSINESS ACTIVITY
Bell Helicopter Textron (U.S.)	Assembly of Bell 505 Helicopter in Mirabel, Quebec
GE Aviation (U.S.)	Jet-Engine testing facility in Winnipeg, Manitoba
LSI Aerospace (France)	Lithium-component assembly in Dorval, Quebec
Pratt & Whitney (U.S.)	Engine-parts manufacturing in Enfield, N.S.



CANADA'S ADVANTAGES

RESEARCH & DEVELOPMENT (R&D)

With annual R&D and capital investment of more than \$1.8 billion in 2014, Canada is an industry leader in the development of aircraft technology and applications.¹

HIGH R&D INTENSITY

The Canadian aerospace manufacturing sector is five times more R&D intensive than Canada's total manufacturing average; R&D investment increased 60 percent in the last 10 years (2004–2014).⁴

EXPORT COMPETITIVENESS

Export Development Canada (EDC) provides commercial solutions ranging from commercial financing support for inbound foreign investment to export-market financing of aircraft sales. Also, the Canadian Commercial Corporation (CCC) is the Government of Canada's defence and security export-sales organization, connecting government buyers in other nations to Canadian technology and expertise through government-to-government contracts.

LOGISTICS AND MARKET ACCESS

Canada has a highly developed transportation infrastructure and duty-free access to the U.S., Mexico and many other global markets. Under NAFTA, Canada enjoys preferential access to one of the largest and most important markets in the world. Further, once the Comprehensive Economic and Trade Agreement (CETA) with the European Union is fully in force, Canada will have guaranteed preferential access to European markets. In addition, Canada's FTA with South Korea, which entered into force on January 1, 2015, represents Canada's first FTA in Asia and provides a strategic gateway to this dynamic and fast-growing region. These trade agreements enable aerospace investors in Canada to benefit from integrated global supply-chains and seize new export-market opportunities.

LOCATION

Canada is an attractive location for all tiers of the aerospace value-chain. Tier 1 multinationals can leverage Canada's supplier base and skilled labour while using Canada as a base to pursue markets in the U.S. and other countries. Tiers 2 and 3 suppliers can use a Canadian location to enter into the many global value-chains present in Canada.

DUTY-FREE MANUFACTURING TARIFF REGIME

Canada is the first country in the G20 to offer a tariff-free zone for industrial manufacturers; there are no tariffs on manufacturing inputs. As a result, investors can import advanced machinery and equipment free of import duties. Along with the straight-line depreciation that Canada allows for manufacturing and processing equipment, these duty-free policies mean that investors can quickly write off capital investment in Canada.

SKILLED LABOUR

The Canadian aerospace industry has a deep talent pool and employs 76,000 workers. Canada has a world-class higher-education system with 21 Canadian universities among the top 500 in the world.⁵ Canadian institutions awarded almost 14,000 undergraduate degrees in engineering in 2014⁶—more than the U.S. on a per-capita basis—and approximately 3,000 students graduate from aerospace-related courses programs at Canadian institutions each year.

BELL HELICOPTER:

"Mirabel is a vital part of Bell Helicopter's long-term growth strategy and the decision to move final assembly of the Bell 505 Jet Ranger X to Canada confirms our commitment to our Mirabel, Quebec, workforce and infrastructure."

Mitch Snyder, President and CEO,
Bell Helicopter

⁴ Industry Canada. Economic modelling based on data from Statistics Canada (Business Registry, Census and CANSIM), OECD and firm level observation, 2014.

⁵ Shanghai Jiao Tong University, Academic Ranking of World Universities (2014).

⁶ Engineers Canada, Canadian Engineers for Tomorrow (2010–2014).



SUPPORT PROGRAMS AND INNOVATION

Government of Canada resources and programs stimulate innovation by substantially reducing the associated costs across the supply chain and the technology-readiness spectrum. Provincial support customized to regional needs complements these federal initiatives.

Strategic Aerospace and Defence Initiative (SADI): Repayable contributions to Canadian aerospace and defence companies to support R&D

The Technology Demonstration Program (TDP): Non-repayable contributions in support of large-scale technology-demonstration projects in the aerospace, defence, space and security sectors

National Research Council (NRC) Industrial Research Assistance Program (IRAP): Innovation assistance to SMEs includes advisory services, funding for innovation, networking and youth employment

Scientific Research and Experimental Development (SR&ED): Income tax credits and refunds for expenditures on eligible R&D activity in Canada

Natural Sciences and Engineering Research Council (NSERC): Funding for university researchers

Canada also facilitates collaborative R&D and initiatives supported by the federal and provincial governments:

- **Green Aviation Research and Development Network (GARDN)**
 - > *Business-led network of centres of excellence*
 - > *Collaborative R&D projects focussed on reducing the environmental footprint of the aerospace sector*
- **Consortium of Research and Innovation in Aerospace in Quebec (CRIAQ)**
 - > *Based in Quebec, includes researchers from across Canada*
 - > *Collaborative R&D with strong training component*
- **Consortium for Aerospace Research and Innovation in Canada (CARIC)**
 - > *Newly established national research and technology network that unites stakeholders from industry, academia and research institutions*
- **Composites Innovation Centre (CIC)**
 - > *Based in Manitoba, collaborative R&D*
 - > *Manages Canadian Composites Manufacturing R&D (CCMRD)*
- **Composites Research Network**
 - > *Based in British Columbia, collaborative R&D*
- **CANNAPE**
 - > *Increase engagement between Canadian and EU aeronautics R&D communities*
- **NRC Aerospace**
 - > *Based in Ontario, Quebec and Manitoba.*
 - > *Collaborative research and technology-development opportunities focused on safety, and decreasing weight, costs and environmental impacts*

INVEST IN CANADA TO ACHIEVE GLOBAL EXCELLENCE

A WELCOMING BUSINESS ENVIRONMENT

Canada is ranked as the best country for business in the G20.

Source: Forbes and Bloomberg

A HIGHLY EDUCATED AND TALENTED WORKFORCE

Canada has the most highly educated workforce among members of the OECD. One in five Canadians speaks one of more than 200 languages in addition to English and/or French.

Source: Organisation for Economic Co-operation and Development (OECD)

COMPETITIVE TAXES

Canada is the most tax-competitive country in the G7.

Source: KPMG

NORTH AMERICAN MARKET ACCESS

Canada's NAFTA advantage gives investors tariff-free access to a US\$20 trillion market of almost 480 million consumers. Furthermore, many Canadian production hubs are closer to U.S. markets than American production sites—of Canada's 20 largest cities, 16 are within a 90-minute drive of the U.S.

Source: The World Bank

A GREAT PLACE TO INVEST, WORK AND LIVE

Canada is one of the world's most multicultural countries with world-class universities, a universal healthcare system and clean and friendly cities. The OECD's Better Life Index shows Canada as best in the G7 in terms of overall living conditions and quality of life.

Source: OECD

LOW BUSINESS COSTS

Canada's business costs continue to be the lowest in the G7 and are now 14.6 % lower than those in the U.S.

Source: KPMG

INVESTORS APPROVE

Over the past decade, Canada has witnessed substantial growth in both inward and outward FDI, reflecting Canada's strong connection to global supply-chains

Source: Statistics Canada

Unless otherwise noted, all values in this publication are in Canadian dollars. Content is based on the latest available information at time of publication.

Cover image: Bell 505 Helicopter, Amanda Gerards. **Inside images:** Page 2 - A member of the Bombardier Aerospace Global family. Page 4 - Atlantis Shuttle's Canadarm, NASA. Page 5 - Canadarm, Canadian Space Agency.



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