



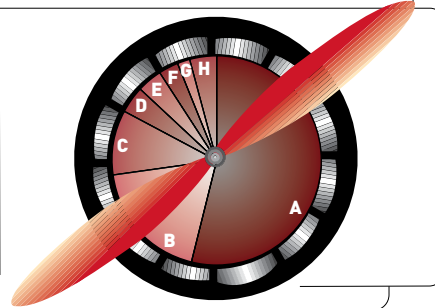
# Aerospace and Defence in Atlantic Canada

The aerospace and defence industry in Atlantic Canada is one of the more dynamic and growth orientated business sectors. Industry leaders such as General Dynamics, Honeywell, Pratt & Whitney and IMP have chosen Atlantic Canada, which is gaining worldwide recognition for its expertise in the industry. With four business parks focused on aerospace and defence, excellent research and development facilities, four international airports, and support from all levels of government, Atlantic Canada is well positioned for continued, strong growth in this industry.

## ATLANTIC CANADA EXPORTS (2005)

### GEOGRAPHIC BREAKDOWN-AEROSPACE PRODUCTS AND PARTS

<b>UNITED STATES</b>	<b>54% A</b>
<b>UNITED KINGDOM</b>	<b>19% B</b>
<b>CZECH REPUBLIC</b>	<b>10% C</b>
<b>*ITALY</b>	<b>4% D</b>
<b>**FRANCE</b>	<b>4% E</b>
<b>NORWAY</b>	<b>3% F</b>
<b>IRELAND</b>	<b>2% G</b>
<b>OTHER</b>	<b>4% H</b>



source: Statistics Canada (2006); NAICS code 3364 - Aerospace Product and Parts Manufacturing

\* Includes Vatican City State

\*\* Includes Monaco, French Antilles

## BUSINESS COSTS

Atlantic Canada has the lowest business costs among the G7 countries, with savings of up to 25%. The greatest cost advantages are in the areas of land, construction, labour and energy. This is according to *Competitive Alternatives: KPMG's guide to international business costs, 2006* which compares the costs of an aircraft parts manufacturing operation in over 125 cities around the world.

## COMPARATIVE BUSINESS COSTS INDEX \*

### AEROSPACE INDUSTRY / AIRCRAFT PARTS MANUFACTURING

<b>FRANKFURT, DE</b>	<b>108.3</b>	<b>ATLANTIC CANADA</b>	<b>CHARLOTTETOWN, PE</b>	<b>90.1</b>
<b>LONDON, UK</b>	<b>106.8</b>		<b>ST. JOHN'S, NL</b>	<b>92.6</b>
<b>SEATTLE, WA</b>	<b>104.5</b>		<b>HALIFAX, NS</b>	<b>91.2</b>
<b>SAN DIEGO, CA</b>	<b>104.2</b>		<b>MONCTON, NB</b>	<b>90.5</b>
<b>**NORTH VIRGINIA, VA</b>	<b>99.5</b>		<b>SYDNEY, NS</b>	<b>91.6</b>
<b>PARIS, FR</b>	<b>98.1</b>		<b>TRURO, NS</b>	<b>88.7</b>
<b>DALLAS / FORT WORTH, TX</b>	<b>101.3</b>		<b>PICTOU, NS</b>	<b>89.7</b>

source: Competitive Alternatives: KPMG's guide to international business costs, 2006 Edition.

\* Business costs are expressed as an index, with the United States average being assigned the baseline index of 100. A cost index of less than 100 indicates lower costs than those in the U.S.

\*\* Metro DC

## ATLANTIC CANADA AEROSPACE AND DEFENCE INDUSTRY: SUMMARY PROFILE

Total Companies	200+
Total Employment	10,000+
Industry Revenue	\$920 million
Export Growth (1992 to 2005)	480%

source: Aerospace Industries Association of Canada (2005) and Statistics Canada (2005)

## CHARACTERISTICS

Companies in Atlantic Canada produce a wide range of products and services ranging from aircraft component parts and aviation IT systems to advanced aerospace and defence training programs and shipbuilding.

Exports in Atlantic Canada's aerospace industry have risen rapidly in recent years and the momentum continues to grow. The United States is the primary market for these products and services, with more than 50% of the aerospace and defence products manufactured in Atlantic Canada being shipped to the U.S.

Another sign of growth in the aerospace and defence industry is its increased employment rate. The growth in the number of aerospace engineers in Atlantic Canada has outpaced the national average and is up by 137% in recent years, and employment growth for aircraft technicians, mechanics and inspectors is 142%, double the national average. The region continues to produce highly qualified professionals thanks to its training facilities and post-secondary institutions.

### AEROSPACE-RELATED TRAINING PROGRAMS IN ATLANTIC CANADA

#### College of the North Atlantic (NL)

Aircraft Maintenance Engineering Technology  
Aircraft Structural Repair

#### Holland College (PE)

Aircraft Gas Turbine Engine Repair and Overhaul  
Aircraft Maintenance Technology  
Aircraft Structural Repair

#### New Brunswick Community College (NB)

Aircraft Technology – Avionics  
Aircraft Maintenance

#### Nova Scotia Community College Aviation Institute (NS)

Commercial Pilot and Aircraft Technician  
Aircraft Flight Attendant  
Aircraft Flight Dispatcher

#### University of New Brunswick (NB)

Bachelor of Business Administration (BBA)  
with a concentration in Aviation and  
Operations Management

#### Moncton Flight College (NB)

Commercial Pilot

Canadian aerospace firms are global market leaders in the manufacture and maintenance of regional aircraft, business jets, commercial helicopters, small gas turbine engines, flight simulation, landing gear and space applications.

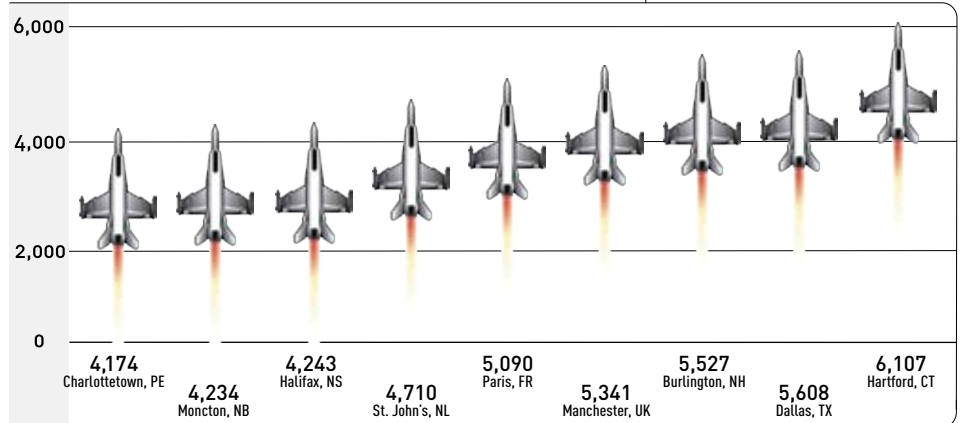
### AEROSPACE BUSINESS PARKS IN ATLANTIC CANADA

- Slemon Park Corporation - Aviation, Aerospace & Training Facilities, Summerside (PE)
- Aerotech Business Park, Halifax (NS)
- Fredericton Aerospace, Defence and Business Park, Fredericton (NB)
- Canada East Aerospace and Technology Park, Moncton (NB)

### ANNUAL OPERATING COSTS (\$US 000)

#### AIRCRAFT PARTS MANUFACTURE

Based on a business model for aircraft parts manufacturing utilizing a 76,500 square feet facility with 85 employees.



source: *Competitive Alternatives: KPMG's guide to international business costs, 2006 Edition.*

### BUSINESS ENVIRONMENT

The aerospace and defence industry is a strategic growth engine for the Atlantic Canadian economy. Industry trade associations in Atlantic Canada have coordinated a number of important industry-wide initiatives in areas such as export, trade and training.

Home to a significant portion of Canada's defence forces – the **Department of National Defence (DND)** and the **Canadian Forces (CF)** employ over 24,000 men and women as members of the Regular and Reserve Forces and civilian personnel – the defence industry in Atlantic Canada is founded on this historic customer base. The DND/CF contribute approximately \$1.25 billion annually to the region's economy, supporting such activities as weapon systems software development and services, aerostructures manufacturing, highly engineered niche products and military maintenance repair and overhaul.

#### The Atlantic Alliance of Aerospace and Defence Associations

includes the Aerospace and Defence Industry Association of Newfoundland and Labrador, the Aerospace and Defence Industries Association of Nova Scotia, Aerospace Prince Edward Island and the New Brunswick Aerospace and Defence Association. The alliance is designed to bring together representatives from industry and government in the four provinces, to work in partnership for the overall development of the industry in Atlantic Canada.

Atlantic Canada has four business parks dedicated to aerospace and defence

initiatives. Slemon Park, on Prince Edward Island, is one of the most successful aerospace parks in Canada with a large number of world-class industry tenants and facilities. The Aerotech Business Park in Nova Scotia is home to a growing number of companies. The Fredericton Aerospace, Defence and Business Park and Dieppe's Canada East Aerospace and Technology Park are facilitating the growth of the aerospace and defence industry in New Brunswick.

### LEADERSHIP

Aerospace and defence is one of the fastest growing industries in Atlantic Canada, with centres of expertise and specialization established in each of the region's four provinces. Atlantic Canadian firms have a high standard of performance on the ISO and AS quality certification programs. These programs are recognized as the international standard for quality management and the benchmark against which supplier relationships are measured. Each of Atlantic Canada's four provinces offers a variety of solutions for the aerospace and defence industry.

#### Nova Scotia

Nova Scotia is home to the largest aerospace industry in Atlantic Canada with over 40 companies delivering products and services ranging from component manufacturing to advanced engineering and IT systems. When combined with the prominent presence of the Department of National Defence, Nova Scotia boasts an aerospace and defence industry that employs approximately 6,000 people and generates approximately \$600 million in revenue.

The Aerotech Business Park, located adjacent to the Halifax International Airport, is home to a growing number of aerospace and defence companies, including **L-3 Communications Electronics Systems**, a division of Canada's largest defence contractor, **L-3 Communications**, as well as **Pratt & Whitney**, with its production facility for turbine engines for business and regional jets, as well as helicopters.

### **Composites Atlantic Limited**

(Lunenburg, NS) designs and manufactures advanced composites for the aerospace, space and defence industries. The company specializes in aeronautics, helicopters and commercial aircrafts with an emphasis on primary structures, subcomponents, assembly and integration. Composites Atlantic Limited supplies both Airbus and Boeing, including the advanced composite diagonal brace for the 787 Dreamliner.

**IMP Group International Inc.** (Enfield, NS) is a major supplier to the Canadian and several foreign militaries, providing aircraft design engineering, component parts manufacture, formed sheet metal details and assemblies. IMP has been particularly successful in securing large fleet aircraft and avionics repair and overhaul contracts.

**Irving Shipbuilding Inc.** (Halifax, NS) is one of Eastern Canada's leading industrial groups. Specializing in small, complex vessel building, Irving Shipbuilding offers a full range of marine repair and refit services, from basic blast and paint, engine overhaul, shafting and structural modifications, and minor welding to major refits and conversions.

### **Prince Edward Island**

The aerospace and defence industry is the fourth largest industry in Prince Edward Island, accounting for 25% of the province's international exports. In 2004, the sector generated \$150 million in sales. Prince Edward Island is home to Slemon Park Corporation - Aviation, Aerospace & Training Facilities. The province also boasts a number of global aerospace and defence companies including:

### **Atlantic Turbines International Inc.**

(Summerside, PE) specializes in the repair and overhaul of engines which power many of the aircraft used in today's commuter airline industry, as well as in private aviation. The company delivers the fastest turn-around times in the industry.

**Honeywell Aerospace** (Summerside, PE) operates a Repair and Overhaul Centre of Excellence in Summerside, PE. The Centre's full service capabilities for turbofan and turboprop engine accessories include fuel controls, fuel pumps, hydraulic pumps, governors, nozzles and other controllers, 24-hour AOG support, and a commitment to Six Sigma Plus and Learn Manufacturing practices. The facility is also a manufacturing centre for "build to print" wiring harnesses.

**Wiebel Aerospace** (Summerside, PE) provides innovative specialty manufacturing for landing gear components and aircraft hydraulic systems. The company serves many international clients including Bombardier, Goodrich and Mecaer.

### **New Brunswick**

New Brunswick is home to the Fredericton Aerospace, Defence and Business Park and Dieppe's Canada East Aerospace and Technology Park and a host of successful companies supplying products and services to the demanding aerospace and defence industry.

**Apex Industries** (Moncton, NB) produces precision parts for several major clients in the aerospace and defence industry. The company is developing production techniques for high-velocity machining of monolithic structures for aircraft and defence vehicles.

### **Industrial Rubber Company Ltd.**

(Bathurst, NB) specializes in the manufacture of tank wear components such as tank wheels, pads, and tracks, and also provides other components used in the defence industry such as hydraulic hoses, couplings, and belts. The company supplies defence forces in the United States, Canada, South America, and Europe.

**Moncton Flight College** (Moncton, NB) is a leading trainer of commercial pilots and has been training pilots from around the world since 1929. The school graduates 120 students a year. In 2005, the college signed a historic Memorandum of Understanding with the Beijing University of Aeronautics and Astronautics to deliver pilot training to 100 pilots per year. The agreement, worth approximately \$60 million, is the largest civilian pilot training contract ever awarded to a flight training school in Canada.

## RESEARCH AND DEVELOPMENT

Atlantic Canada's aerospace and defence industry devotes considerable resources to R&D activity. The industry is supported by all levels of government, academia and the private sector through a broad infrastructure of research facilities.

The intricate research and development infrastructure, combined with some of the lowest after-tax R&D costs in the world, creates an ideal environment for fostering innovative technologies that yield new products, create high-quality jobs, and make the industry more competitive.

The **National Research Council** (NRC) is the Government of Canada's premier organization for research and development and has R&D facilities, industry partnerships, and innovation-to-commercialization offices throughout Atlantic Canada. Through its Industrial Research Assistance Program, NRC provides financial and management support to innovative companies.

The **Research and Productivity Council** combines top notch scientists, engineers and technologists with state-of-the-art equipment to provide solutions to the technological challenges faced by firms operating in the aerospace and defence industry. The Council operates independently on a cost-recovery basis, offering a broad range of services including analytical testing, prototype design and engineering.

**Defence R&D Canada - Atlantic** (Dartmouth, NS) is a branch of the Department of National Defence and the leading Canadian centre in sonar technology and torpedo defence. The Centre is conducting naval platform research and development for torpedo detection and counter-measures and also supports the design, operation and maintenance of Canadian Navy ships and submarines.

## AEROSPACE AND DEFENCE IN ATLANTIC CANADA



### PROVINCES AND ABBREVIATIONS

- NB** - NEW BRUNSWICK
- PE** - PRINCE EDWARD ISLAND
- NS** - NOVA SCOTIA
- NL** - NEWFOUNDLAND AND LABRADOR

If you would like more information on this industry, please contact:

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**Catalogue number:** IU89-4/3-7-2004E

**ISBN:** 0-662-37770-2 **ACOA:** 2007-03

The paper used for this document contains 10% post-consumer fibre. Vegetable-based inks were used in the printing process.



### Newfoundland and Labrador

The province is an established location for aircraft maintenance, aerospace engineering and IT systems development. Companies possessing these skill sets and with competencies in composite and metal component manufacturing, sector training, software development and sensor system development call Newfoundland and Labrador home.

### CHC Composites Inc. (Gander, NL)

A New York Stock Exchange listed company, CHC specializes in the manufacture of advanced composite and bonded metal components for the aerospace and defence industry.

### GFT Aerospace Technologies

(Gander, NL) is recognized as one of the top flight schools in Canada. In addition to offering a full range of flight training programs in both fixed wing and helicopter, the company offers training in aircraft maintenance, composite and sheet metal repair and manufacture, and avionics.

**ICAN** (St. John's, NL) designs and implements sophisticated navigation and communications software including Electronic Charting Systems (ECS) designed on the IMO specification for ECDIS. ICAN also provides differential

GPS infrastructure, including consulting services, system design, project management, and Hydrographic Survey Software, as well as Automated Identification Systems (AIS) solutions for use in maritime surveillance and homeland security.

**Northern Radar Inc.** (St. John's, NL) specializes in Surface Wave Radar (SWR) technology, which can detect and track shipping, aircraft (including low flying aircraft), icebergs and sea ice. It is also capable of measuring ocean surface currents, surface winds and sea-state. Northern Radar is partnered with the Department of National Defence for the provision of SWR products and services.

### EDUCATION AND TRAINING

Atlantic Canada has a ready supply of available and skilled personnel, both technical and non-technical. The region graduates hundreds of engineers, computer scientists and other related specialists each year and is home to more post-secondary graduates per capita than the Canadian and U.S. averages. In addition, each community college in Atlantic Canada has a diploma program related to the aerospace and defence industry, with courses ranging from avionics to engine repair and aircraft maintenance.

## AEROSPACE AND DEFENCE IN ACTION

**Seimac Limited** of Nova Scotia is a world leader in the design and manufacture of specialized radios for mission critical applications. The company designs, manufactures and markets a variety of products including a range of miniaturized ARGOS satellite radio transmitters, and was recently awarded contracts for aircrew survival radios by both the Danish Air Force and the Canadian Forces.

**Northstar Electronics Inc.** of Newfoundland and Labrador is collaborating with Lockheed Martin on the development of a swimmer detection system for military and commercial application. The company has also established a commercial relationship with Lockheed for the production of fire control systems consoles for use in submarines.

**MDS-PRAD Technologies Corporation** of Prince Edward Island produces a new erosion-resistant protective coating developed specifically for gas turbine engine compressor blades. It is being used by the U.S. Navy and other major clients.



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