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The advanced manufacturing sector is one with many opportunities, challenges and complexities. The advanced manufacturing technologies involve new manufacturing techniques and machines, and are a vital enabler to meet and surpass the demands of a competitive, global market. This study examines two areas of the advanced manufacturing sector, specifically the automotive and aerospace clusters in Mississauga,

In the Hub of Automotive Manufacturers

Located in the centre of several automotive manufacturing and assembly plants, Mississauga has a significant number of auto parts and component suppliers, which account for nearly 70 per cent of an automotive's content value. Since most of the auto components have a heavy "just-in-time" requirement for the automobile maker, Mississauga is an excellent location choice.

Today, there are 17,000 people employed in 500 firms in the automotive industry.
Employment in this cluster is forecasted to grow 5 per cent from 2005 to 2010. This
estimate is based upon worldwide forecasts and the recent investment announcements
from the Original Equipment Manufacturers (OEMs).

A Rich History in Aerospace

The City of Mississauga's rich history in the aerospace industry began decades ago. One of the biggest influencers on the aerospace industry in Mississauga is, most notably, Toronto Pearson International Airport. What began as the little airport in Malton has since matured within Mississauga to become Canada's largest and busiest international airport. As a result, Malton acquired an international reputation as a leader in aeronautical design and manufacturing. It was once home of the famous Avro Arrow airplane, Canada's first supersonic aircraft, once considered one of the most remarkable planes in history and ahead of its time in fundamental design.

Today, there are more than 22,000 people employed in more than 200 firms in the aerospace manufacturing, airline and airport related industries. Employment in this cluster is forecasted to achieve a growth rate of 12 per cent from 2005 to 2010. While the aerospace industry is undergoing some restructuring and change, Mississauga's sector will continue to be a major contributor to the City's vibrant and flourishing economy.

It is clear that Mississauga's automotive and aerospace clusters will continue to be major contributors to the diverse economy.

Key Reasons Mississauga Attracts these Important Sectors

Mississauga's costs, such as property taxes, services and utilities, are noticeably competitive and rank among the lowest of the major cities in Canada and the Greater Toronto Area. Mississauga, as part of the GTA has overall business costs approximately 4.5 per cent lower as compared to the United States. The GTA's cost advantage in aerospace manufacturing amounts to 5.7 per cent lower as compared to the United States. (Source: 2006 KPMG Competitive Alternatives Study).

Mississauga's developed road, rail, sea and air transportation infrastructure, allow the advanced manufacturing sector easy access to their global clientele. Mississauga's proximity to a large pool of labour that is highly-skilled for the advanced manufacturing sector, generous access to R&D incentives, a large and established concentration of the advanced manufacturing sector, offer further reasons why the City's advanced manufacturing sector continues to flourish.

Accelerating Growth

- The City of Mississauga is committed to furthering the automotive and aerospace sectors' growth and continuously champions efforts to intensify innovative activity
- Mississauga is an integral part of the Western Greater Toronto Area Convergence Centre, a network of business, education, institutions and government partners working together to accelerate new business opportunities and innovation
- Thriving partnerships between business and educational research institutions create new products and technologies
- Aerospace and automotive firms in Mississauga benefit from some of the most generous R&D incentives in the world

Diverse and Dynamic Business Community

- Diversified business community of more than 52,000, offering potential for convergence of ideas and business-to-business opportunities
- Fourth largest head office centre in Canada
- Leading clusters in the following sectors:
 - Automotive and Aerospace Industries
 - Information and Communications Technologies
 - Biomedical and Pharmaceutical
 - Financial, Insurance and Business Services

Huge Accessible Market: Canada and the U.S. Provide Vast Market

- Mississauga is the sixth largest city in Canada, with a population of 704,000
- Strategically located in the hub of the Greater Toronto Area (GTA), with a population
 of 5.4 million
- Mississauga is within a one-day drive of 164 million people
- Offers direct access to North America's vast, and quickly growing and affluent (\$13.8 trillion GDP) 420-million consumer base

Intellectual Capital

- Over 82 per cent of Mississauga's resident labour force has post-secondary education
- Access to over 440,000 employees from the City of Mississauga and approximately 3.1 million employees located in the Greater Toronto Area
- 10 major universities and 11 community colleges located within commuting distance of Mississauga

Telecommunications Network

- Highly developed telecommunications network and infrastructure
- Sophisticated infrastructure, offering 100 per cent digital switching
- Existing fibre optic networks are rapidly evolving to leading-edge technologies to provide survivability
- Network services all business parks and offers bandwidth scalability on a simplified service portfolio
- Mississauga is well-covered by several wireless service providers, offering 100 per cent integrated voice and data network services

Transportation Infrastructure

- Home to Toronto Pearson International Airport
- Only city in the GTA serviced by seven major highways
- Two principle railways servicing the city
- A well-developed local transit system

Automotive Growth Analysis Highlights:

Past Growth:

- Mississauga's automotive sector has experienced tremendous growth
- Between 1995 and 2005, the number of employed in the automotive sector increased
 167 per cent
- On average, the automotive sector has added 1.106 jobs per annum, over a 10 year period

Projected Growth:

 Employment in the automotive sector is estimated to reach 18,548 employees by the end of 2010, achieving a growth rate of 5 per cent over five years

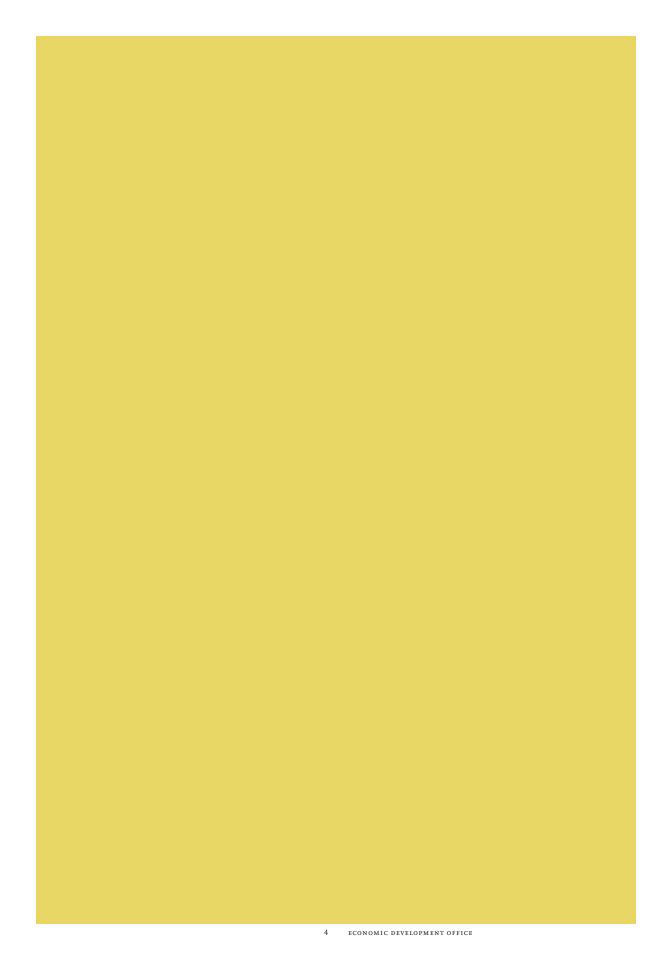
Aerospace Manufacturing, Airline, Airport and Related (AMAA) Growth Analysis Highlights:

Past Growth

- Mississauga's Aerospace Manufacturing, Airline, Airport and Related (AMAA) sector has experienced rapid and continuous growth
- Between 1995 and 2005, the number of employed in the AMAA sector increased 64 per cent
- On average, the AMAA sector has added 868 jobs per annum over a 10 year period

Projected Growth

 Employment in the AMAA sector is estimated to reach 25,058 employees by the end of 2010 achieving a growth rate of 12 per cent over 5 years.



CHAPTER 1

Study Context Automotive Manufacturing Sector

A. Background

The automotive manufacturing sector is a highly productive and important economic sector, contributing to the vibrant economy of the City of Mississauga, the Province of Ontario and Canada as a whole. The Economic Development Office (EDO), City of Mississauga, recognizes that the automotive manufacturing sector is of great significance to Mississauga's current and future economic growth, and therefore also recognizes the importance of researching this sector.

The global automotive manufacturing sector, particularly in North America, is undergoing significant business restructuring. Factors such as access to markets, global sourcing, manufacturing over-capacity, changing market share, employee health care costs, pension costs, and the decline of international trade barriers have all had a major impact on new automotive investments.

There have been a number of major investments and announcements recently by the Original Equipment Manufacturers (OEMs), namely, Toyota Motor Corp., Honda Canada Inc., Ford Motor Company, and General Motors Corp. in southern Ontario. As a spillover effect of these investments, it is anticipated that there will be future investment announcements from parts and component suppliers who will supply to these OEMs.

The EDO recognizes the significance of parts and component suppliers in our economy as they account for nearly 70 per cent of an automobile's content value, and that most of these components have, "just-in-time" requirements.

The City of Mississauga offers the automotive sector numerous advantages. Located in the centre of major automotive assembly plants, Ford (Oakville), Daimler Chrysler (Brampton), GM (Oshawa), Honda (Alliston), and Toyota (Cambridge, Woodstock), the city provides the sector with established logistics and infrastructure to address its "just-in-time" requirements and a diverse sector base to meet additional needs.

The EDO strives to continue to attract automotive related investments to the City of Mississauga. To accomplish this, the EDO sought to analyze the automotive manufacturing sector, plan and market key strengths, and develop a strategic plan to meet the needs of this sector.

B. The Automotive Sector Defined

The primary focus of this research report is the automotive manufacturing sector. However, the study provides an opportunity to look at Mississauga's automotive sector as a whole.

The automotive sector is a complex one, with many stakeholders including manufacturing, distribution and retailers to name a few.

As described in KPMG's 2006 Competitive Alternatives study, "The global automotive industry is dominated by world-scale manufacturers, such as Toyota, Honda, Daimler-Chrysler, General Motors, and others. These manufacturers outsource much of their parts production to larger 'Tier 1' suppliers, who in turn often sub-contract production to smaller 'Tier 2/3' manufacturers. Parts manufacturers may supply both Original Equipment Manufacturers (OEMs) and the replacement parts market."

For the purposes of the study, the automotive sub-sectors have been defined as:

1. Automotive Manufacturers

These include businesses that are engaged in manufacturing and assembly of automobiles, buses, light-duty trucks, heavy-duty trucks, parts and components of the vehicles, including head offices and businesses that are involved in research and development.

2. Automotive Distributors

These include all businesses that are primarily engaged in the wholesale and distribution of new and used automobiles, light-duty trucks, and heavy-duty trucks, and new parts for these vehicles.

3. Other Related Automotive Industries

These include all businesses that are primarily engaged as new or used car dealers, automotive parts and accessories stores and tire dealers.

The data and the analysis presented in the Canada, Ontario, and the Greater Toronto Area sections, and the greater geographical regions are based on the automotive manufacturing sub-sector alone.

In the City of Mississauga section, the data and analysis recognizes the importance of all three sub-sectors to Mississauga's economy. Each of the sub-sectors also presents a detailed analysis, for comparative purposes, with the greater geographical regions.

CHAPTER 2

A. The Global Perspective

The automotive sector is one of the largest manufacturing sectors in the world. The investment made by an Automotive Original Equipment Manufacturer (OEM) to build an assembly plant within a community generally results in an economic boom. Hence, these investments are highly sought after by communities around the world.

Automotive Investments in North America

In North America, the automotive industry is generally located within three main geographical regions. These regions include; the Great Lakes region (including the upper Midwest U.S. and southern Ontario), the southern U.S. region, and the Mexico region.

Traditionally, the Great Lakes region was the exclusive domain of the North American automobile industry. However, since the late 1980s, the southern U.S. region and Mexico region have successfully competed for new automotive investments.

Over the last two decades, the OEMs have faced a number of new factors that has changed investment attitudes. One of the most important drivers of this change has been the market share redistribution.

The change in market share distribution

towards the new domestic OEMs, such as Toyota and Honda, is affecting the profits, operations and investment decisions of the traditional domestic OEMs (Big 3), namely General Motors, Ford and DaimlerChrysler.

The newer OEMs are increasing their production capacity by investing in technologically advanced plants that are engineered with flexible assembly lines that produce two or more cars on the same line. In doing this, these OEMs are able to minimize costs per unit of production.

To maintain cost effectiveness, OEMs build five or more unique car models in one plant. This way, if one or two models are successful in the market place, production of those models will cover 80 to 95 per cent of capacity and the remainder models will help keep production at full capacity.

The Big 3 OEMs, who are losing market share, have invariably ended up with excess manufacturing capacity. This directly increases the per unit cost of manufacturing a car, since there are less cars being produced in an assembly plant, even though the overall cost of operating that plant is constant or fixed.

Consequently, the Big 3 OEMs have undertaken a number of initiatives to reduce their production costs and regain market share.

a) Major restructuring of manufacturing capacity

Over the last two years, the Big 3 OEMs have implemented major restructuring plans by closing older plants to help eliminate excess capacity. As part of this plan, investments covered upgrading assembly lines of newer plants to become more flexible, so that two or more car models are built on one assembly line. The reduction in excess capacity and increase in flexible assembly lines will enable the Big 3 OEMs to reduce the overall cost of production and become more competitive.

b) The downloading of research and development (R&D) costs to their suppliers

In support of restructuring, the Big 3 OEMs have continued to download R&D costs to its suppliers and also demand lower costs from them. This downloading of costs has resulted in mergers, acquisitions or bankruptcies among Tier 1/2/3 automotive parts manufacturers. The cost pressures have forced these manufacturers to become bigger and more productive in order to compete for business from the OEMs.

c) Employment shift in the automotive industry

The need to lower manufacturing costs and protect market share continues to influence the automotive industry. The closure of Big 3 OEM plants and shifting cost pressures to suppliers is causing employment movement from OEMs to their suppliers. In some cases, it is causing a shifting of employment from one community to another.

The Automotive Parts Manufacturers Facing Global Competition:

In addition to OEMs downloading their cost pressures to the Tier 1/2/3 parts manufacturers, these same manufacturers will be facing more global competition.

The Auto Part Manufacturing Association (APMA), representing Canada's automotive parts manufacturers and suppliers, is forecasting the continual globalization of the auto industry and the entry of emerging economies like China, India, Thailand, Slovakia, Hungary, Poland and the Czech Republic.

Due to the global sourcing of components, the Canadian auto parts industry will continue to experience change. North American suppliers must compete with companies around the world that often have a lower cost base.

B. Canada: A Significant Automotive Industry Player

Canada has a global reputation for leading edge innovation, research and development, quality and productivity. Since the 1900s, the development of the Canadian automotive industry has been fuelled by a passion for innovation. Canadians are constantly exploring, designing, building and testing new ways to make cars efficient, safer and stronger. Canada also has a well-developed dealer network and world class after market sales and service sector that supplies replacement parts and accessories nation wide.

Canada has steadily grown into the third largest automotive exporter in the world, after Japan and the U.S. Since 1993, the Canadian

(Figure 2.1)

NORTH AMERICAN PRODUCTION BY SOURCE 2005

Source: Ward's AutoInfoBank,

Available: Industry Canada, North America

Production Quarterly — 2005, www.strategis.gc.ca

SOURCE	TOTAL UNITS	PERCENTAGE OF
COUNTRY	PRODUCED	TOTAL PRODUCTION
Canada	2,689,224	16.48
Mexico	1,682,125	10.31
U.S. A	11,948,598	73.21
Total	16,319,947	100.00

¹ Source: Province of Ontario, "Ontario's Auto Industry" study, Queen's Printer for Ontario, 2004, www.2ontario.com

Quick Facts:

Production

- Canada currently ranks 8th in the world for motor vehicle production.
- Canada accounts for over 16 per cent of North American vehicle production.

Sales

- Vehicle sales have increased steadily since the mid-1990s, and reached their third highest level ever in 2003.
- Canadians buy more small, fuel-efficient cars and trucks than Americans.

Employment

- Assembly employment has decreased in recent years, while production has increased significantly.
- Employment growth has been highest in the auto parts manufacturing sector, as output rose to supply North American vehicle production.

Source: Industry Canada, "Cars on the brain", Canada's Automotive Industry 2004, www.strategis.gc.ca

automotive industry shipments have risen from \$37.8 billion in vehicles and \$14.7 billion in parts 2, to \$69 billion in vehicles and \$32 billion in parts in 2005.3

The automotive industry is Canada's largest manufacturing sector, accounting for 12 per cent of manufacturing GDP and 25 per cent of manufacturing trade. It employs 171,002 people in automotive assembly and component manufacturing and another 33,529 in distribution and aftermarket sales and service. Manufacturing is clustered in southern Ontario, in the heart of the North American auto industry, while distribution is spread across the country.

As of 2004, the automotive assembly sector in Canada employs 48,735 people and manufactures 2.5 million passenger and commercial vehicles. The automotive parts and component manufacturers employs 103,413 people and has shipments of \$31.4 billion. The motor vehicle body and trailer sector employs 18,854 and has shipments of \$3.7 billion. The authorized automobile dealer network employs 165,510 people and has retail

sales of more than \$82.1 billion in new and used vehicles. The automotive aftermarket sector employs 168,019 people and has retail sales of \$18.4 billion.²

Canadian Trade Advantages

There are a number of trade advantages in selecting Canada as a location for assembly, manufacturing, and research and development. Some of the advantages are:

- Canada has an overall automotive trade surplus of \$4.6 billion.²
- Canada is part of a fully integrated North American market with annual sales of 20 million vehicles.²
- Canada has bilateral free trade agreements with countries such as Chile and Israel; regional agreements through the North American Free Trade Agreement (NAFTA), the Free Trade Area of the Americas (FTAA) and Asia-Pacific Economic Cooperation (APEC); and multilateral agreements through the World Trade Organization (WTO).
- Under NAFTA, Canada has provided assured access to nearly 420 million.

² Source: Industry Canada, "Cars on the Brain", Canada's Automotive Industry 2004, www.strategis.gc.ca

³ Source: Industry Canada, "Statistical Review of the Canadian Automotive Industry: 2005 Edition", www.strategis.gc.ca

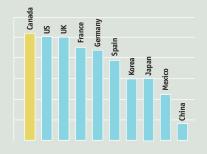
North Americans with a combined GDP of more than U.S. \$13.8 trillion.⁴ Canada has eliminated tariffs on NAFTA-originating automotive goods, and auto parts imported for use in the manufacturing of vehicles.⁵ Canada and the United States have the world's largest trading partnership, with two-way trade amounting to more than U.S. \$580 billion in 2005.⁶ Canadian companies serve North American markets through a well-integrated transportation system that is among the best in the world.

- The 2006 KPMG Competitive Alternatives study shows that Canada has a 4.5 per cent after-tax manufacturing cost advantage over the U.S. and a 10.9 per cent advantage for R&D.⁷
- Corporate income taxes are generally lower and capital taxes has been eliminated.8
- The Economist Intelligence Unit, in April 2005, assessed that Canada is the best place to do business from 2005 to 2009 (Figure 2.2).

(Figure 2.2)

WORLD RANK-BUSINESS ENVIRONMENT 2005-2009 AUTOMOTIVE COUNTRIES

Source: Economist Intellingence Unit, April 2005, assessment of 70 indicators of business friendliness, infrastructure and competition



Canadian Automotive R&D Advantages

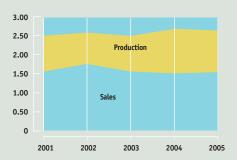
Canada is expanding its capacity for automotive R&D and innovation, and is investing heavily in skills development and highly qualified personnel.

- Research activities are supported by attractive R&D tax credits and programs. Canada's R&D tax treatment is the most generous in the industrial world. It includes immediate full write-offs for all expenditures in R&D capital equipment, and appreciable tax credits. Firms can significantly reduce R&D costs through direct investment and subcontracting in Canada. The KPMG 2006 study, "Competitive Alternatives" indicated that Canada's after-tax cost advantage over the United States, for dedicated R&D facilities, amounts to more than 10.9 per cent.
- Canada's core competencies include metal processing; advanced materials and technologies; information and communications technology; and advanced design, visualization and manufacturing. Canada is the

(Figure 2.3)

LIGHT VEHICLE PRODUCTION AND SALES IN CANADA (IN MILLIONS OF UNITS)

Source: Ward's Automotive, Published by Industry Canada, available: Industry Canada



⁴ Source: Province of Ontario, "Ontario's Auto Industry" brochure, Queen's Printer for Ontario, 2006, www.2ontario.com

⁵ Source: Industry Canada, "Cars on the Brain", Canada's Automotive Industry 2004, www.strategis.gc.ca

⁶ Source: Industry Canada, Trade Data Online, www.strategis.gc.ca

⁷ Source: KPMG, "Competitive Alternatives, KPMG's Guide to International Business Costs", 2006 edition, www.competitivealternatives.com

⁸ Source: Canada Revenue Agency, "Corporations — What's new?", www.cra-arc.gc.ca

world leader in fuel cell technology, lightweight materials, metal forming, and 3D industrial design.⁹

 Canada's innovation infrastructure includes dozens of private-public R&D partnerships, such as the National Research Council and the AUTO21 network of centres of excellence.⁹

Abundant, Affordable Energy

Canada has an abundance of oil, gas and coal and a reliable supply of hydro-electricity. ¹⁰ According to the KPMG 2006 study, electricity and natural gas rates are, on average, 21 per cent and 2 per cent respectively lower in Canada than in the United States.

Labour Wages and Benefits

Labour wages and benefits are generally lower, due largely to Canada's universal health care system. Statutory and employer-sponsored benefits are lower in Canada than in the United States and the total payments amount to 25.6 per cent of salaries and wages in Canada, compared to 34.2 per cent in the United States. Because of Canada's national universal health care system, employer-paid health benefits amount to 2.1 per cent of workers gross pay in Canada, compared to 9.6 per cent in the United States. The Canadian national health care is the biggest cost advantage to OEMs when compared to business costs in the U.S."

(Figure 2.4)

AVERAGE BASE SALARIES \$US

Source: Economic Research Institute, The Geographic Reference Report, updated January 2005

CDN \$0.80 = US \$1.00

Available: Greater Toronto Marketing Alliance, "Automotive & Advanced Manufacturing", www.greatertoronto.org/investing_sec_01.htm

CITIES/OCCUPATION	MACHINIST	ELECTRICAL ENGINEER	ENGINEERING TECHNICIAN	TOOL & DIE MAKER
Toronto, ON	\$38,190	\$58,080	\$46,984	\$39,798
Grand Rapids, MI	\$54,853	\$87,210	\$56,904	\$53,593
Syracuse, NY	\$54,091	\$86,620	\$56,156	\$52,819
St. Louis, MO	\$53,805	\$86,558	\$55,884	\$52,508
Fort Wayne, IN	\$51,759	\$83,515	\$53,740	\$50,524

(Figure 2.5)

WORLD MOTOR VEHICLE PRODUCTION (IN THOUSANDS OF UNITS) 2005

Source: CSM Worldwide, Global Production Summary by Region & Country (000s), www.newsletter.csmauto.com/1stQtr2006/

	2005		2005
U.S.	11,568.9	France	3,455.2
Japan	10,036.4	Canada	2,621.6
Germany	5,189.3	Spain	2,620.7
China	4,316.0	Brazil	2,209.6
South Korea	3,630.0	Rest of the world	7,776.0

⁹ Source: Industry Canada, "Cars on the Brain", Canada's Automotive Industry 2004, www.strategis.gc.ca

¹⁰ Source: Government of Canada, "Canada Automotive", available: www.strategis.ic.gc.ca.

Automotive Manufacturing and Distribution in Canada

(Figure 2.6)

MAJOR MOTOR VEHICLE ASSEMBLY PLANTS IN CANADA

Source: Industry Canada, www.strategis.gc.ca

* Source: www.toyota.ca

LOCATION PRODUCTS

CAMI Automotive Inc.

Ingersoll, Ontario Chevrolet Equinox, Pontiac Torrent; a GM-Suzuki joint venture

DaimlerChrysler Canada Inc.

Brampton, Ontario Chrysler 300, Dodge Magnum; Dodge Charger
Windsor, Ontario Dodge Caravan, Chrysler Town & Country, Pacifica

Ford of Canada Ltd.

Oakville, Ontario Ford Freestar and Mercury Monterey

St. Thomas, Ontario Ford Crown Victoria, Mercury Grand Marquis

Honda Canada Manufacturing Inc.

Alliston, Ontario Civic, Acura CSX

Alliston, Ontario Acura MDX, Pilot, Ridgeline

General Motors of Canada Ltd.

Oshawa, Ontario Chevrolet Monte Carlo, Impala

Oshawa, Ontario Buick LaCrosse (Allure in Canada), Pontiac Grand Prix

Oshawa, Ontario GMC Sierra and Chevrolet Silverado pickups

Toyota Motor Manufacturing Canada Inc.

Cambridge, Ontario Corolla and Matrix
Cambridge, Ontario Lexus RX330

Woodstock, Ontario* New satellite plant to come online in 2008*

C. Ontario: The Automotive Advantage

The automotive industry is Ontario's largest manufacturing sector, accounting for 20 per cent of manufacturing GDP and 4.2 per cent of the total GDP (2005)."

In the increasingly competitive auto

industry, Ontario provides manufacturers with a winning edge. This is why six of the world's largest car makers (DaimlerChrysler, Ford, GM, Toyota, Honda and Suzuki) build vehicles in Ontario, and why they place important product lines here.¹²

In June 2005, fDi magazine (part of the internationally recognized Financial Times Group) awarded Ontario the title of "Canadian Province of the Future" based on the following criteria: economic potential, workforce, transportation, IT and telecommunications and quality of life.

II Source: Province of Ontario, "GDP by Industry", www.2ontario.com

¹² Source: Province of Ontario, "Ontario's Auto Industry" brochure, Queen's Printer for Ontario, 2005, www.2ontario.com

In 2005 alone, GM and Ford committed \$2 billion and \$800 million respectively in new expenditures, and Toyota announced the construction of a new \$1.1 billion assembly plant.

(Figure 2.7)

BUILDING VEHICLES TAKES LESS TIME IN ONTARIO NORTH AMERICAN ASSEMBLY PLANT HOURS PER VEHICLE, 2005

Source: Harbour Report 2005

Available: Province of Ontario, "Ontario's auto industry" brochure, Queen's Printer for Ontario, 2006, www.2ontario.com

VEHICLE TYPE	ASSEMBLY HOURS
Mid-size Cars	
Segment Average	19.2
GM Oshawa Car (Plants #1 & #2)	17.1
Sub-compact Cars	
Segment Average	21.3
Toyota Cambridge (North Plant)	19.4
Mid-size SUV's	
Segment Average	20.5
Honda Alliston (Plant #2)	19.5

Steps the Ontario Government has Taken to Attract Investments

The economic impact of having an automotive assembly plant locate within a community is felt well beyond the geographic jurisdiction of the community. An auto assembly plant is a huge economic generator, which is why the province of Ontario has been aggressively courting auto companies to assemble vehicles here.

The Ontario government has been encouraging automotive investments through incentive programs in an effort to build a stronger economy with an emphasis on innovation, research and leading-edge manufacturing techniques which are part of the automotive industry.

To accelerate investment, the provincial government has established and implemented two important programs to support the automotive industry in Ontario. They include:

1. The Ontario Automotive Investment Strategy (OAIS)

The \$500 million, five-year OAIS program, introduced in April 2004, is designed to support large-scale capital projects that contribute to the long-term competitiveness of the automotive industry.

Under the program, automotive assemblers and Tier I auto parts companies are eligible for government investment in strategic projects that are at least \$300 million and / or create 300 jobs involving corporate innovation, advanced skills training, public infrastructure, improved energy efficiencies, and new environmental technologies. Recognizing that innovation requires a flexible approach, projects are evaluated on a case-by-case basis.

2. The Ontario Advanced Manufacturing Investment Strategy (OAMIS)

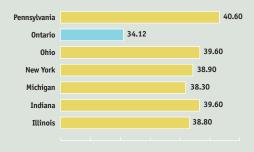
The Ontario Advanced Manufacturing Investment Strategy is designed to attract investment by assisting companies across the

(Figure 2.8)

CORPORATE TAX RATES FOR MANUFACTURING, 2006

Source: Ministry of Finance 2006; Deloitte Tax Facts 2005 (5/2006);

Available: www.2ontario.com/facts/fact09.asp



province to take immediate steps to develop and use leading technologies and innovations to keep them globally competitive. Government support will focus on manufacturing processes and technologies, material innovations, innovative waste management technologies and energy efficiencies. In the last two years, automotive investments in Ontario have topped \$6 billion. In the past decade, the automotive sector has invested about \$2.6 billion per year in new plants and equipment.¹³ Employment in the automotive sector has grown by about 30,000 over the last decade.

Figure 2.9 lists a few of the larger automotive investments/announcements made since 2003.

(Figure 2.9)

RECENT MAJOR INVESTMENTS IN ONTARIO

Source: 1. Ontario Investment and Trade services web site, www.2ontario.com

2. Province of Ontario, "Ontario's auto industry" brochure, Queen's Printer for Ontario, 2006, www.2ontario.com

DATE ANNOUNCED	ANNOUNCEMENTS	AMOUNT OF INVESTMENT (CDN.)	TYPE OF INVESTMENT	J O B S CREATED	O N T A R I O I N V E S T M E N T
Aug. 2006	General Motors (Oshawa)	\$740 million	Plant Modernization	N/A	N/A
May 2006	Linamar Corp (Guelph)	\$1.1 billion	New Plant	3,000	\$44.5 million
May 2006	Honda (Alliston)	\$154 million	New Engine Plant	250	N/A
2005	Toyota Motor Manufacturing (Woodstock)	\$1.1 billion	New Plant	2,000	N/A
2005	General Motors (Oshawa)	\$2.1 billion	Termed the "Beacon Project" this investment focuses on new vehicle and engine program, employment and skills training, automotive engineering, R&D, and manufacturing.		N/A
2005	CAMI, General Motors (Ingersol)	\$557 million	Plant retooling	N/A	N/A
2003	Ford (Oakville)	\$1.2 billion	Plant retooling/ R&D Fuel Cell Technology center		N/A
2003	DaimlerChrysler (Brampton)	\$1.4 billion	Chrysler 300 Series/ Dodge Magnum		N/A

¹³ Source: Province of Ontario, "Ontario's Auto Industry" brochure, Queen's Printer for Ontario, 2006, www.2ontario.com

In 2005, Ontario surpassed Michigan in vehicle production (figure 2.10).

(Figure 2.10)

TOP VEHICLE MANUFACTURING JURISDICTIONS IN NORTH AMERICA

Source: Ward's AutoInfoBank, February 6, 2006.

Available: Province of Ontario, "Ontario's auto industry" brochure, Queen's Printer for Ontario, 2006, www.2ontario.com

	STATE/PROVINCE	2005 LIGHT VEHICLE PRODUCTION
1	Ontario	2,624,212
2	Michigan	2,476,123
3	Ohio	1,795,626
4	Missouri	1,147,896
5	Kentucky	1,109,480
6	Indiana	772,858
7	Tennessee	692,966
8	Alabama	479,465
9	Illinois	455,262
10	Georgia	417,369

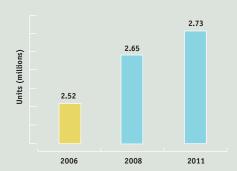
The Future of the Automotive Industry in Canada and Ontario is Sustainable

Canada and Ontario's light vehicle production is forecasted to grow from its current 2.66 million units in 2005 to 2.73 million units by 2011 (figure 2.11).

(Figure 2.11)

CANADA'S/ONTARIO'S LIGHT VEHICLE PRODUCTION FORECAST

Source: CSM Worldwide, Global Production Summary by Region & Country, Available: www.newsletter.csmauto.com/2ndQtr2006/



In 2006, vehicle production in Ontario will see a slight decline due to restructuring by the Big 3. However, by 2008, Toyota's new plant in Woodstock will be operational along with other OEM plants that are increasing their production, which will help raise production rates in 2008 and beyond.

Ontario should continue to succeed, guided by the automotive strategy and supported by all levels of government and the academic structure that currently exists.

D. GTA: Automotive Sector

The Greater Toronto Area (GTA) is Ontario's number one automotive cluster, with 58 per cent of Ontario's total vehicle production.

The three major auto assemblers, General Motors, Ford and DaimlerChrysler, collectively operate six assembly plants in the GTA, making it one of the top two automotive clusters in North America.

In addition, General Motors, Ford, Honda, KIA, Mazda, Suzuki, Nissan, Volkswagen, Toyota are just a few of the automotive OEMs that have chosen the GTA for their Canadian headquarters.

In fact, more than 500 parts manufacturers help make the GTA one of the most vital and diverse automotive clusters on the continent. GTA automotive companies employ nearly 50,000 workers (*figure 2.12*) and produce more than 1.1 million cars, trucks and minivans per year. This is 58 per cent of Ontario's total vehicle production (October 2004).¹⁴

¹⁴ Source: Greater Toronto Marketing Alliance, "Automotive & Advanced Manufacturing", www.greatertoronto.org/investing_sec_01.htm

Freightliner Canada Limited is centrally located in the GTA, and in the middle of Canada's largest truck market. This site allows for close proximity to several top customers in the transportation industry, and its location near major highways enables easy access to Toronto Pearson International Airport and the rest of the GTA.

(Figure 2.12)

THE GREATER TORONTO AREA IS THE SECOND LARGEST AUTOMOTIVE CLUSTER IN NORTH AMERICA

Source: Statistic Canada, U.S. Department of Labor, Bureau of Labor Statistics., 2001

METROPOLITAN AREA CMA AND MSA		EMPLOYMENT
1	Detroit, MI	154,056
2	Greater Toronto Area, ON	50,907
3	Dayton-Springfield, OH	32,414
4	Grand Rapids-Muskegon-Holland, MI	32,284
5	Chicago, IL	28,956
6	Cleveland-Lorain-Elvira, OH	27,464
7	Los Angeles-Long Beach, CA	27,085
8	Flint, MI	26,717
9	Indianapolis, IN	23,308
10	Ann Arbor, MI	23,191

CHAPTER 3

Mississauga: Strengths for the Automotive Sector

Overall, the Province of Ontario ranks Mississauga second in the number of auto parts manufacturing businesses.¹⁵

The City of Mississauga has an established automotive cluster that employs 17,673 employees and has approximately 500 automotive businesses.¹⁶

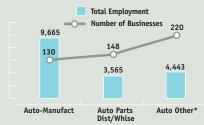
This automotive cluster is diversified with primary strength in Tier 1/2/3 manufacturers, wholesalers and distributors. Mississauga is home to OEM head offices like Subaru, Nissan, KIA, Mitsubishi and Hino. Our top five automotive manufacturers by employment are DaimlerChrysler Commercial Buses North America (Orion Bus Industries Ltd.), Faurecia Automotive Seating Canada Ltd., Lear Corp., Rollstar Metal Forming and Stackpole Automotive Gear Division. Appendix B shows a list of the top 25 Mississauga manufacturing companies included in this cluster.

A. Number of Businesses by Classification

As per figure 3.1, the auto-manufacturers subsector accounts for more than 9,600 employees or 54.7 per cent of the total cluster. The auto parts distribution/wholesalers and the auto other sub-sectors account for 20.2 per cent and 25.1 per cent of employment respectively.

In 2005, the auto industry employment accounted for 4.4 per cent (17,673) of the total employment in Mississauga.

(Figure 3.1)
2005 CITY OF MISSISSAUGA'S AUTOMOTIVE SECTOR
Source: 2005 Mississauga Employment Database



*Distributors, Aftermarket, Retail/Service, Sales

Hino Canada's head office is located in Mississauga with 32 years of history in Canada. Hino is well known as a supplier of high quality, medium duty, single axle straight trucks which range from Class 4 (16,000 lbs) to Class 7 (33,000 lbs). With our coast-to-coast dealership network, we are committed to providing the highest level of customer service possible, with a dependable parts supply and service availability. Being located in Mississauga is very important to Hino Motors Canada, Ltd. because of the close proximity to the airport, the highway system and our new plant in Woodstock. Hino Motors Canada, Ltd.

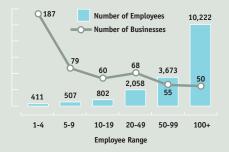
¹⁵ Source: Province of Ontario, "Ontario's Auto Industry" brochure, Queen's Printer for Ontario, 2006, www.2ontario.com

¹⁶ Source: Source: City of Mississauga, Economic Development Office, Mississauga Employment Database, 2005

(Figure 3.2)

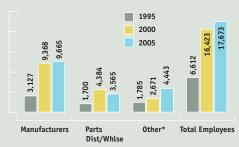
2005 CITY OF MISSISSAUGA'S AUTOMOTIVE COMPANIES BY EMPLOYEE RANGE

Source: 2005 Mississauga Employment Database



(Figure 3.3)
AUTOMOTIVE SECTOR GROWTH OF EMPLOYMENT

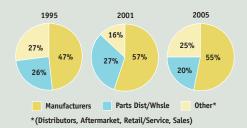
Source: 2005 Mississauga Employment Database



*Distributors, Aftermarket, Retail/Service, Sales

(Figure 3.4) MISSISSAUGA AUTO SECTOR COMPOSITION EMPLOYMENT PERCENTAGE

Source: 1995, 2000 and 2005 Mississauga Employment Database



B. Number of Businesses by Employee Range

The larger businesses in the automotive sector, account for more than 75 per cent of the total employment in the sector.

(Refer to figure 3.2)

- 21 per cent (105) with more than 50 employees accounted for 78.6 per cent (13,895) of the total employment
- 25.7 per cent (128) of businesses have 10-49 employees. They account for 16.2 per cent (2860) of the total employment
- 53.3 per cent (266) of businesses with less than 10 employees accounted for 5.2 per cent (918) of the total employment

C. Growth Analysis and Highlights

The total employment of the City of Mississauga's automotive sector has experienced enormous growth since 1995. The sector grew from 6,612 employees (as of 1995) to 17,673 employees (as of 2005), posting a growth rate of 167 per cent over 10 years. On average, the automotive sector has added 1,106 jobs per annum to Mississauga's economy.

The following figure 3.3 illustrates each of Mississauga's automotive sub-sectors and their employment in 1995, 2000 and 2005.

- Between 1995 and 2005, employment in the manufacturing sub-sector grew by 209 per cent from 3,127 employees to 9,665 employees.
- In spite of the global restructuring and other challenges, as discussed previously, the auto-manufacturing sub-sector also posted a positive employment growth rate of 3 per cent, between 2000 and 2005, from 9,368 employees to 9,665 employees.

D. Sector Composition

Figure 3.4 illustrates the Mississauga auto sector composition in 1995, 2001 and 2005. It demonstrates that the manufacturing subsector has increased its proportionate share during this time.



A location quotient analysis helps to determine the relative concentration of the automotive sector in Mississauga's economy, in relation to the broader geographic economy. A location quotient greater than one indicates that the local sector is stronger. A location quotient of less than one indicates that the broader geographic economy has a stronger sector.

The location quotient analysis presented in this section is based on the automotive manufacturing sub-sector alone. Compared to Canada, Mississauga had a 1.3 location quotient in 2005 and compared to Ontario, Mississauga had a 0.8 location quotient.

A. Mississauga's Ranking in Canada

Mississauga's automotive parts manufacturing industry has been ranked as the second largest in Ontario.¹⁷ Ontario's automotive cluster is the largest in Canada and is North America's top vehicle manufacturing jurisdiction (*Refer back to Figure 2.10*).

Mississauga's automotive sector has increased during the last decade and is now home to 500 automotive businesses and approximately 17,700 employees, representing 4.4 per cent of total employment in Mississauga.

B. Mississauga's Automotive Manufacturing Sectors GDP Value

In 2005, Mississauga's total nominal GDP was estimated at more than \$33.67 billion. The automotive manufacturing sector's contribution was estimated at \$1.26 billion. The combined total GDP, including manufacturing, distribution and services sectors' GDP contribution was estimated at \$2.30 billion (Refer to figure 4.1).

(Figure 4.1)

2005 GDP CONTRIBUTION OF THE AUTOMOTIVE

MANUFACTURING SECTOR IN MISSISSAUGA

Source: City of Mississauga, Economic Development Office



¹⁷ Source: Province of Ontario, "Ontario's auto industry", Queen's Printer for Ontario, 2006



Mississauga has a highly established infrastructure and a diversified economy and is strategically located amongst leading automotive manufacturers and assembly plants, making Mississauga a primary location for the automotive sector's supply chain.

A skilled workforce, competitive lease rates and land prices, low tax rates and utility costs and access to major transportation infrastructure, including an international airport, also makes Mississauga a location of choice for the automotive sector.

A. Competitive Advantages of Mississauga

1. Catalyst for Innovation Activities

In a knowledge-based economy, the link between economic success and education is integral. Mississauga recognizes that the ability to draw a highly qualified talent pool of employees with the necessary skills to help automotive companies compete globally is a prime concern. For this reason, Mississauga continuously champions efforts to intensify innovation activity. The City of Mississauga is an integral part of the Western Greater Toronto Area Convergence Centre (WGTACC) – a network of business, education, institutions, and government partners, working together to accelerate new business opportunities and innovation.

Mississauga fosters business education partnerships that contribute to a superior education climate and an internationally successful business community. The City actively supports the University of Toronto, Mississauga Campus and its academic and expansion plans.

2. Diverse and Dynamic Business Community

Mississauga's 52,000-strong, business community is diverse and includes leading clusters in the aerospace, automotive, Information Communications Technologies (ICT), biomedical and financial and real estate services.

Mississauga is a great venue for us for many reasons. With its proximity to Pearson International Airport and our close access to the 401 series of highways, we accomplish two very important objectives for our business. Firstly, this location is adjacent to large residential areas, which provides the connection to our experienced and dedicated workforce. Secondly, this locale is the most convenient location to not only service our client base around the country, but for our channel partners in the GTA who can pick up from this location as well.

Affinia Canada Corporation

- Mississauga's automotive sector is composed of approximately 500 businesses employing 17,673 people.
- Mississauga's aerospace sector is comprised of more than 205 businesses employing 22,305 people.
- Mississauga's biomedical cluster is the third largest cluster in Canada and is an integral part of the GTA biomedical community.
- The Mississauga ICT sector continues to be a major catalyst for growth, powering advances in the bio sector and synergies for further innovation.
- Mississauga is also home to Canada's third largest financial, insurance and real estate (FIRE) cluster. Our location, adjacent to the financial capital of Canada, allows for easy access to various venture capital and other financing options that invest in automotive sector firms and spin-off businesses.
- The City is the location of choice for many world-renowned corporations who operate their head office and facilities here. More than 56 of the Fortune 500 U.S. companies chose Mississauga as the site of their Canadian head office. Canadian companies realize the advantages of locating in Mississauga with over 40 of the country's top 500 corporations headquartered here. Mississauga ranks as the fourth largest head office centre in the country.¹⁸

3. Intellectual Capital

• Some of Ontario's finest post-secondary institutions surround Mississauga, offering a wide variety of educational opportunities. These include greatly respected academic institutions, such as University of Toronto's Mississauga campus (UTM), a highly recognized research-based university; and a campus of the University of Western Ontario's Richard Ivey School of Business. In total, there are 10 major universities and 11 com-

- munity colleges within commuting distance of Mississauga.
- The City of Mississauga is part of the largest labour force market in Canada, the Greater Toronto Area (GTA). Within the GTA, employees can be recruited from a large employment base of 3.1 million people.
- Sheridan College has opened the Advanced Manufacturing Centre that targets key skills in advanced manufacturing by offering a combination of apprenticeship, diploma and graduate certificate programs. The Centre also offers intensive industry training on technical, business and soft skill upgrading for industry employees.
- The Centre for Engineering Design and Rapid Manufacturing Toronto was established by Centennial College with a goal to increase the number of full time technologists and technicians by 200 annually. The skills taught include mechanical engineering, design, manufacturing, and tool & die.
- In Mississauga alone, there are more than 440,000 employees more than 82 per cent of our resident labour force with post secondary education.
- The Toronto Census Metropolitan Area (CMA), which includes Mississauga, attracts the highest percentage of immigrants into Canada which adds to an increasing labour pool.¹⁹

4. Transportation and Telecommunications Infrastructure

• Transportation Infrastructure

Mississauga is located at the centre of one of the most accessible transportation hubs in North America and home to Toronto's Pearson International Airport. This allows our business community to enjoy ready access to the largest and busiest airport in Canada and is serviced by an extensive road and rail network.

 $^{^{\}mathrm{I8}}$ Source: National Post, Financial Post, Top 500 Canada's Largest Corporations, June 2005

¹⁹ Source: Source: Statistics Canada, 2001 Census

Nissan's proximity to Pearson International Airport allows for convenient travel for Nissan's global visitors. The building's visibility, from highway 401, as well as the reasonable land taxes, which allowed Nissan to build its desired facility, was also deciding factors in locating the headquarters in Mississauga.

Nissan Canada Inc.

• Telecommunications Network

The automotive sector benefits from Mississauga's extensive and highly developed telecommunications network and infrastructure. Existing fibre optic networks are rapidly evolving to become leading-edge technologies to provide speed and stability of the data. The network services all business parks and offers bandwidth scalability on a simplified service portfolio. Mississauga is fully covered by several wireless service providers offering 100 per cent integrated voice and data network services.

• Energy Distribution

Enersource Hydro Mississauga, the regulated electricity distribution affiliate of Enersource's Corporation, has delivered electricity throughout Mississauga since 1917. The company, owned 90 per cent by the City of Mississauga, is Ontario's only public-private partnership in the local electricity distribution sector. Enersource is the fourth largest local energy distribution company in Ontario.

Enersource's reliability record is stellar. In 2005, the company averaged 32 minutes annual outage time per customer. This reliability is far ahead of most Canadian and U.S. large urban utility companies. Reliability such

as this, saves the Mississauga community approximately \$60 million each year. Due to the relatively low cost of power and high reliability of service, Enersource Hydro Mississauga is helping to attract investment and jobs to the area. ²⁰

5. Access to a Vast Consumer Base

Strategically centered in the hub of Ontario's thriving Greater Toronto Area (GTA), the City of Mississauga offers direct access to North America's vast, and quickly growing population which now stands at 420 million, with a combined GDP of more than U.S. \$13.8 trillion.

The City's location, in proximity to the U.S. border, allows businesses to quickly supply components and parts to the U.S. market. Our extensive infrastructure including seven major highways, two national railways and Canada's largest international airport, links Mississauga to the rest of Canada and strategic markets in the north-eastern United States. In fact, Canada and the United States have the world's largest trading partnership, with two-way trade amounting to more than U.S. \$580 billion in 2005.²²

²⁰ Source: : Enersource Hydro Mississauga, www.enersource.com/hydro/service.htm

²¹ Source: Province of Ontario, "Ontario's Auto Industry" brochure, Queen's Printer for Ontario, 2006, www.2ontario.com

²² Source: Industry Canada, Trade Data Online, www.strategis.gc.ca



Highlights and Forecast

Mississauga's automotive sector has experienced sustainable growth over the last decade, partly due to the dynamics of the City's strategic location and diversified business community.

Mississauga has been ranked second for the number of auto parts manufacturing businesses in the city, by the Province of Ontario.²³

The City's automotive sector, as a whole, continues to grow. The number of employees has increased from 6,612 in 1995 to 17,673 in 2005, an increase of 167 per cent over 10 years. On average, the Mississauga automotive sector has added 1,106 jobs per annum.

The manufacturing sub-sector posted the strongest employment growth of 209 per cent, equating to an additional 6,534 jobs, between 1995 and 2005. This sub-sector accounts for the largest portion of employment in the automotive sector, employing 9,661 people in 2005.

The sector's positive contribution to the Mississauga region is highlighted by its 2005 real GDP contribution, estimated at \$2.30 billion.

Mississauga's Automotive Sector is Positioned for Growth

Located in the centre of several automotive manufacturing and assembly plants, Mississauga's diverse economy offers opportunities to automotive businesses. With supportive government, a strong economic base, large and talented labour pool, and superior infrastructure, Mississauga will continue to attract new investments in the automotive sector.

Mississauga's automotive sector is estimated to grow from 17,673 employees in 2005, to 18,548 employees in 2010, achieving a growth rate of 5 per cent, over five years.

This estimate is based on the growth percentage rates posted by the Mississauga automotive sector between the years 2000 and 2005. The estimate also accounts for CSM Worldwide's forecasts of the Canadian light

Wilcox Bodies Limited has been in the same location in Mississauga for 44 years and in that period has acquired additional properties in order to expand its manufacturing operation. Over that period, Wilcox Bodies Limited has experienced tremendous positive growth as has the City of Mississauga.

Wilcox Bodies Limited

²³ Source: : Province of Ontario, "Ontario's Auto Industry" brochure, Queen's Printer for Ontario, 2006, www.2ontario.com

vehicle production (figure 2.11) and the recent investment announcements from the Original Equipment Manufacturers (OEMs).

It is clear that Mississauga's automotive sector will continue to be a major contributor to Mississauga's vibrant and flourishing economy.

(Figure 6.1)

MISSISSAUGA AUTOMOTIVE EMPLOYMENT FORECAST

Source: City of Mississauga, Economic Development Office
The estimate is based upon the forecasted data from CSM worldwide,
announcements made by the Original Equipment Manufacturers
(OEMs) in the past 3-4 years, and the percentage growth rate posted
by the Mississauga automotive sector between the years 2000-2005.





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1. Top 25 Automotive Manufacturing Companies by Employment:

Antomax Automotive Technologies (a division of Martin Rea International Inc.)

CTS of Canada Ltd.

Collins & Aikman Plastics Ltd.

DaimlerChrysler Commercial Buses North America

Dana Thermal Products

Dominion Spring Industries Corp.

Faurecia Automotive Seating Canada Ltd.

FMT (a division of Martin Rea International Inc.)

Industrial Tires Ltd.

Innovative Cooling Dynamics

Lear Corp.

Magnifoam Technology International Inc.(M T I I)

Mississauga Seating Systems

MJ Manufacturing

NTN Bearings Manufacturing Canada

Nissan Canada Finance

Petro-Canada

Plastcoat

R B & W Corporation of Canada

Rollstar Metal Forming (a division of Martin Rea International Inc.)

S M C Pneumatics (Canada) Ltd.

Stackpole Automotive Gear Division

Stackpole Ltd.

The Woodbridge Group

Wheeltronic Ltd.

2. Mississauga Automotive Company Profiles

The following pages feature company profiles from some of the many successful automotive head office, manufacturing, and distribution companies in Mississauga.



Advance Precision Ltd.

Advance Precision produces high quality precision machined components to customer specifications. Component design specifications can vary from moderately simple to highly complex. Our primary equipment is leading edge rotary transfer machining.

Advance Precision also provides a wide range of auxiliary operations such as grinding, anodizing, plating and heat treatment. As a result, fully finished precision parts are processed quickly and economically.

Positioning itself for growth, Advance Precision is continuously evaluating its capacity and auxiliary process capabilities.

Company History / Market

Advance Precision strives to be a world-leading supplier of machined parts and assemblies for the automotive industry. Advance Precision was registered in April 2005 to TS16949, an ISO Technical Specification which aligns existing automotive quality system requirements within the global automotive industry.

Advance Precision purchased its first Rotary Transfer machine in 1993 and has added 12 machines since. Advance Precision moved into its current 26,000 square foot facility in Mississauga, Ontario in August 1999. Most of our product is exported and we ship parts to Canada, United States, Mexico, England and Australia.

Advance Precision Products and Technology

All tooling programs in use at Advance Precision are fully engineered by our Engineering Department. This includes designing machining processes, gauging processes, cutting tools, tool holders, gauging, special machine attachments and machinery replacement parts. Advance Precision also regularly uses the expertise of its tooling and equipment suppliers to augment our own expertise and innovative capabilities.

Using AutoCAD and AutoDesk Inventor design software, we create both 2D and 3D designs. We continuously apply this technology to provide complete and detailed engineered information to our production department, suppliers and customers.

Advance Precision has developed an engineering capability within the company that provides us with the technology to put our innovation to work. We are fully equipped to work independently of our suppliers' and customers' capabilities or limitations.

www.adv-precision.com



Affinia Canada Corp.

Affinia Canada Corp. is a global manufacturer of automotive parts for light duty automotive, light duty truck, heavy-duty truck and off-road equipment applications. We provide brands such as Raybestos Brake Products, Spicer Chassis, and WIX Filters to suite these applications through our distribution centre located in Mississauga, Ontario.

We have been part of this corporate community for over 15 years and employ in excess of 200 people in this location.

Our purpose is to service all the major automotive warehouse distributors in Canada who in turn provide our products to the automotive service providers.

Mississauga is a great venue for us for many reasons. With its proximity to Pearson International Airport and our close access to the 401 series of highways, we accomplish two very important objectives for our business. Firstly, this location is adjacent to large residential areas, which provides the connection to our experienced and dedicated workforce. And secondly, this locale is the most convenient location to not only service our client base around the country, but for our channel partners in the GTA who can pick up from this location as well.

www.affiniagroup.com



Chalmers Suspensions International Inc.

Chalmers Suspensions International Inc. a QS 9000 company, is part of the Chalmers Group of Companies with its office situated on 6400 Northam Drive in Mississauga, Ontario.

We are the manufacturers of on/off road suspension systems for heavy duty trucks and trailers and export almost 90 per cent of our product. We supply to the major OEMs e.g. Kenworth, Peterbilt, Freightliner, International Trucks, Volvo, Mack etc. and are a just- in- time supplier of our suspension systems. The company has designed, manufactured and marketed innovative top quality rubber spring suspensions for the last thirty years. Chalmers positive reputation for its suspension is based on advantages such as high stability, excellent articulation, full equalization, smooth ride and minimum maintenance. It has proven itself in its field and the application is widely used on dump trucks, concrete mixers, refuse trucks, mining, logging, oil patch, utility trucks, sweepers, airport fuelers, fire trucks etc. The Chalmers product line is divided into single, tandem and tridem axle suspensions and can suit various weights and load capacities. We have also currently developed a bus suspension for the export market.

Chalmers major strengths are not limited to its product line. Its dedication to quality, technology and engineering plus extensive testing, in conjunction with a team oriented group of individuals dedicated to the overall goal of providing a top quality product, strong emphasis for exceptional customer service, truly make Chalmers a leader in the suspension industry.

Our mission is to be the industry leader in selected global markets by delivering quality products in a niche market and building long term partnerships through an exceptional team of dedicated and service driven business professionals.

Our sister Company, CSI Gear Corporation, also located in Mississauga, manufactures high quality precision parts of very tight tolerances mainly for the defense and auto industry. Specialized gears, friction clutches and specialized tubes are just some of their product offerings.

Chalmers Suspensions was the winner of the Outstanding Business Achievement Award by The Ontario Chamber of Commerce in 1999 as well as the Small Business Achievement Award by the Mississauga Board of Trade.

www.chalmerssuspensions.com



Freightliner Canada Limited

Freightliner LLC, a wholly-owned subsidiary of DaimlerChrysler, is the largest heavy-duty truck manufacturer in North America and a leading manufacturer of medium-duty trucks and specialized commercial vehicles. Its Canadian head office headquarters, Freightliner Canada Limited, is located in Mississauga, Ont., and employs 70 people in its sales and operations department and parts distribution center.

Freightliner Canada Limited supports the nationwide dealer network for several renowned vehicle brands, including Freightliner (heavy-duty and medium-duty trucks), Sterling (trucks for vocational applications and local and regional distribution) and Western Star (heavy-duty over-the-road and vocational trucks). The Canadian district general managers for all three brands are based there, and the parts distribution center serves eastern Canada and the northeast U.S. The Mississauga operation also houses the Canadian office for SelecTrucks, Freightliner LLC's used truck retailer. In addition, Mississauga is home to Freightliner Mid-Ontario, Inc., Canada's largest Freightliner dealer with approximately 200 employees.

Centrally located in the GTA, Freightliner Canada Limited is in the middle of Canada's largest truck market. This site allows for close proximity to several top customers in the transportation industry, and its location near major highways enables easy access to Pearson International Airport and the rest of the GTA.

Plus, Mississauga's booming economy attracts an ample supply of skilled employees. Mayor Hazel McCallion has been a tremendous asset to Mississauga by making it easy for companies like Freightliner Canada Limited to conduct and expand business in the area. In fact, Freightliner Canada Limited's growing parts distribution center will soon move in to a new 200,000 square foot facility which is more than twice as large as its current facility.

Every day, the 20,000 North American employees of Freightliner LLC work hard to fulfill the company's vision while exemplifying its core values. By continually pursuing strong brands, maintaining a reputation for reliability and achieving superior financial performance, Freightliner LLC aspires to continually serve its customers, DaimlerChrysler shareholders, employees, dealers and local communities like Mississauga.

www.freightliner.com



Hino Motors Canada, Ltd.

Hino represents the Toyota Group in the global market for heavy-duty trucks and buses and is the leading Japanese company in the sales of these types of vehicles. Hino employs nearly 10,000 people world-wide with annual production of over 90,000 units.

In Canada, Hino Motors Canada, Ltd. is the exclusive distributor of Hino products in Canada. In May 2006, Hino opened a new assembly plant in Woodstock, Ontario. This 132,000 sq. ft. facility employs 45 staff with the capacity to produce 2,000 units per year. Using leading edge engineering and manufacturing technologies, Hino produces reliable, comfortable and cost efficient trucks.

Hino Canada's head office is located in Mississauga, Ontario, with regional sales offices located in Montreal, Quebec, and Calgary, Alberta. With 32 years of history in Canada, Hino is well known as a supplier of high quality, medium duty, single axle straight trucks which range from Class 4 (16,000 lbs) to Class 7 (33,000 lbs).

Our customers have come to depend upon the outstanding reliability and superb fuel economy of our trucks, which are often required to operate under very demanding conditions. Hino's concern for the environment and superior engineering capability ensures compliance with the most stringent emissions regulations. Together with our coast to coast dealership network, we are committed to providing the highest level of customer service possible, with a dependable parts supply and service availability.

Being located in Mississauga is very important to Hino Motors Canada, Ltd. because of the close proximity to the airport, the highway system and our new plant in Woodstock.

www.hinocanada.com



MTD Metro Tool & Die Limited

MTD Metro Tool & Die Limited is in its thirty-fourth year of manufacturing in the Mississauga area. MTD's founder, Andy Pantano started MTD in 1972 building quality dies for the Aerospace industry. In 1978, Andy's son Marcel joined MTD and added stamping to compliment MTD's Die building expertise. Over time, MTD picked up many manufacturing practices such as Welding, Assembly and Automated Powder Coating to make MTD a value-added manufacturing solution.

MTD became a major supplier to the business machine OEMs in 1981 and even today is considered a preferred supplier. MTD's ability to supply tested modular components allows our customers to use us as a distribution point to their technical representatives in the field.

In 1991, MTD started supplying dies to automotive customers, establishing MTD as a viable alternative to overseas competition. MTD not only builds dies for the automotive sector, but also stamps metal components that are on many of the top selling vehicles in North America.

MTD's niche is our customer-support when deadlines are unrealistic or when engineering changes are needed immediately. With our onsite designers, we can handle a rapidly changing project without missing deadlines.

MTD's value-added approach has given us an advantage since many customers are trying to limit the amount of suppliers that they manage. Fewer logistical complications means quick turn around, excellent control on quality and affordable pricing.

MTD has three facilities within Mississauga our main facility at 1065 Pantera Dr., which is the center point for our Tool & Die division, our Stamping division and Automated Powder Coating division. MTD2 location at 1025 Pantera Dr. is our Assembly and Packaging area, housing our manual and robotic weld cells. MTD assembly department produces electro-mechanical assemblies and safety items for many different companies within North America and Europe. Our 1318 Britannia Rd. facility is our warehouse and die crib.

MTD has been ISO certified since 1998, currently certified to ISO 9001:2000. Our (3) facilities cover over 80,000 sq. ft, and 100 employees. MTD can design – build – try out - manufacture - weld - assembly - paint and package your product giving you absolute value added service.

www.mtdmetro.com



Nissan Canada Inc.

In January 1965, Nissan Canada Inc. (NCI), originally named Nissan Automobile Company (Canada) Ltd., became the first Japanese-based automotive manufacturer to incorporate in Canada. Nissan is dedicated to the fusion of the most advanced technology and design in order to create vehicles that stand for truly breakthrough innovation. In addition to Canada, Nissan operates in over 80 countries worldwide.

With President Mark Grimm in the driver's seat, NCI and its dealers employ over 4,000 people across Canada including 300 stationed at the head office in Mississauga. Located on Orbitor Drive, the head office houses several NCI divisions, including communications, dealer operations, sales and marketing.

Under its two brands, Nissan and Infiniti, NCI offers a wide range of vehicles to Canadians. Nissan's vehicle models include the all-new Versa, Sentra, Altima, Maxima, 350z, Quest, Murano, X-Trail, Pathfinder, Xterra, Armada, Frontier and Titan. Infiniti's vehicle models include G35, M35/45, FX45 and QX56.

NCI launched the Nissan Canada Foundation in 1993, which is dedicated to helping Canadian seniors and enhancing their quality of life. The Foundation helps raise funds and provides grants and vehicles to non-profit organizations such as Meals on Wheels and The Red Cross. At any given time, there are approximately 50 Nissan vehicles on loan to service organizations across Canada, most delivering meals but also providing other services to seniors. In addition to providing vehicles, the Foundation helps to raise money for Toronto Homes for the Aged and 30 other agencies in Ontario through the Toronto Challenge, a marathon/walk-a-thon held annually in June and the Nissan 5K at the Docks in July.

Aside from the support NCI receives from the City of Mississauga, there are several other advantages to having the head office in this city. Proximity to Pearson International Airport allows for convenient travel for Nissan's global visitors. The building's visibility from Highway 401, as well as the reasonable land taxes, which allowed Nissan to build its desired facility, were also deciding factors in locating the headquarters in Mississauga.

Mississauga fosters a warm environment and has a great sense of family. NCI looks forward to its expanding growth in this wonderful city and is excited for the bright future ahead.

www.nissan.ca



NTN Bearing Corporation of Canada Ltd.

NTN is one of the world's largest bearing producers. With manufacturing plants throughout the world, NTN is a leading bearing supplier to both the industrial and automotive markets. In addition to bearings of all sizes and types, NTN is also one of the largest producers of constant velocity joints, a key component for automotive drive trains. NTN is also a leader in the development of precision equipment in cutting-edge fields.

Headquartered in Osaka, Japan, NTN employs more than 12,000 employees in 19 countries with sales, engineering, production and service networks throughout Japan, the Americas, Europe, Asia and China.

Canadian Head Office

NTN Bearing Corporation of Canada, based in Mississauga, Ontario, manufactures and distributes a wide range of ball and roller bearings, serving the automotive, industrial and recreational markets.

Established in 1968, NTN Bearing Corporation of Canada Ltd. has enjoyed continuous growth and expansion over the past 30 years. The corporate head office of NTN Bearing Corporation of Canada Ltd. is located in Mississauga, Ontario. Feeding four strategically-located NTN warehouses from coast-to-coast, this location also serves as the National Distribution Centre.

NTN Bearings are available through more than three hundred distribution outlets across Canada. With this extensive network, NTN is able to offer prompt, off the shelf service anywhere in the country.

NTN is also a large supplier to a wide and diverse range of manufacturers. These manufacturers cover the spectrum of products; from automobiles to snowmobiles, from in-line skates to pulp and paper mills.

Canadian Manufacturing Facility

NTN Bearing Manufacturing Canada manufactures bearings for worldwide markets under license from the design authority of NTN Corporation. Our production team members demonstrate their capabilities through versatility and adaptability in a production environment that is constantly undergoing machine and design alteration.

The bearings produced at our facility have wide market appeal. They are effective in both radial and thrust loads and when used under high-speed rotation. Our Mississauga made bearings are used primarily in the manufacture of automobiles, but also see use in agricultural machinery, power motors, household appliances, and many other applications.

www.ntn.ca



Wilcox Bodies Limited

Wilcox Bodies Limited was founded as a small truck body company in 1962 in Streetsville by Rick Wilcox and manufactured van and stake bodies, tool boxes, and distributed truck equipment related to these bodies. In 1980, the company was purchased by John Dick and expanded to specialty manufacturing of service and utility bodies to customers throughout Canada and United States. The company remains a family owned business.

Wilcox Bodies Limited employs 30-40 people from the Mississauga, Brampton, Georgetown and Guelph area .The facilities are comprised of 16,000 sq. ft. manufacturing plant, plus separate administration and sales offices in a renovated 1800's era house.

Wilcox Bodies Limited specializes in manufacturing custom service, utility, crane bodies, emergency rescue units and tool boxes out of steel, aluminum and fiberglass. We are also currently a distributor for some of the top equipment in the industry including Stellar Shuttles and Compressors, Liftmore Cranes and V-Mac Compressors, Thieman, Tommy and Canadian Power Liftgates, Auto Crane Cranes, Van Air Compressors, and much more. Our customers include many hydro and, gas companies, public works, heavy equipment companies, local contractors, both in Canada and United States.

Wilcox Bodies Limited enjoys its location in west Mississauga which is close to the 401 and 407 highways as well as Pearson International Airport. The location allows customers ,suppliers as well as employees easy access to our facilities.

Wilcox Bodies Limited has been in the same location for 44 years and in that period has acquired additional properties in order to expand its manufacturing operation. Over that period Wilcox Bodies Limited has experienced tremendous positive growth as has the City of Mississauga.

www.wilcoxbodies.com



Würth Canada Limited

Würth Canada Limited is a subsidiary of Würth International AG, the world leader in the distribution of fasteners and fastening systems.

Würth Canada was founded in Montreal, Quebec in 1971 and we are happy to celebrate our 35th Anniversary in 2006. The head office has been located in Mississauga, Ontario since 1986. Since the late 80's and the early 90's, Würth Canada has established itself in the Automotive / Trucking aftermarket and has sales representatives servicing customers from Victoria, British Columbia to St. John's, Newfoundland.

In traditional Würth fashion, the market remains to be conquered through aggressive direct selling and offering our customers a "one-stop shopping experience". To promote customer loyalty, Würth Canada has actively established "Point of Sale" ORSY systems in all markets. Popular Würth brands include: Zebra, saBesto, Master, Firstec and ORSY.

The core product range consists of DIN fasteners to electrical connectors to the complete Würth line of chemicals, which has a well-received reputation for high quality worldwide. With the market to serve, products such as abrasives and safety articles have taken priority in product development and marketing.

Würth Canada Limited joins several other Würth companies around the globe, by receiving its ISO certification in December 2000 for the 9001-2000 standard. With this focus on quality management throughout its operations, Würth Canada focuses employee efforts in ensuring customer requirements are understood, met, and involved in activities designed to continually improve its performance.

Würth is happy to be located in Mississauga because of the access to the major highways which provide dependable distribution routes and also because of the growing employee base. The focus on business development by the municipal government has secured a strong place for Würth Canada in a vibrant business community.

www.wurthcanada.com

APPENDIX C

North American
Industrial Classification
System (NAICS) and
the Standard Industrial
Classification (SIC)

The Mississauga automotive sector utilizes the definitions of industry terms based on the North American Industrial Classification Systems (NAICS). The automotive sector is organized under the following categories: OEMs, auto parts and component manufacturing, motor vehicle and parts wholesalers and distributors, and auto other that include automotive dealers and automotive parts, accessories and tire stores.

OEMs (Original Equipment Manufacturers)

CLASSIFICATION	2005 & 2000 DATA IS BASED ON NAICS 1997	1995 DATA IS BASED ON SIC 1980
Automotive Manufacturers	Motor Vehicle Manufacturing 336110 Automobile and Light-Duty Motor Vehicle Manufacturing	E3231 Motor Vehicle Industry
	336120 Heavy-Duty Truck Manufacturing	E3241 Truck and Bus Body Industry
	Motor Vehicle Body and Trailer Manufacturing	
	336211 Motor Vehicle Body Manufacturing	E3256 Plastic Parts and Accessories for Motor Vehicles Industry
	336212 Truck Trailer Manufacturing	E3242 Commercial Trailer Industry
	336215 Motor Home, Travel Trailer and Camper Manufacturing	E3243 Non-Commercial Trailer Industry
	Motor Vehicle Parts Manufacturing 336310 Motor Vehicle Gasoline Engine and Engine Parts Manufacturing	E3251 Motor Vehicle Engine and Engine Parts Industry
	336320 Motor Vehicle Electrical and Electronic Equipment Manufacturing	E3252 Motor Vehicle Wiring Assemblies Industry

2005 & 2000 DATA IS BASED ON NAICS 1997	1995 DATA IS BASED ON SIC 1980
Motor Vehicle Parts Manufacturing 336330 Motor Vehicle Steering and Suspension Components (except Spring) Manufacturing	E3254 Motor Vehicle Steering and Suspension Parts Industry
336340 Motor Vehicle Brake System Manufacturing	E3255 Motor Vehicle Wheel and Brake Industry
336350 Motor Vehicle Transmission and Power Train Parts Manufacturing	E3259 Other Motor Vehicle Accessories, Parts and Assemblies Industries
336360 Motor Vehicle Seating and Interior Trim Manufacturing	E3257 Motor Vehicle Fabric Accessories Industry
336370 Motor Vehicle Metal Stamping	E3253 Motor Vehicle Stamping Industry
336390 Other Motor Vehicle Parts Manufacturing	E3259 Other Motor Vehicle Accessories, Parts and Assemblies Industries
Motor Vehicle Wholesaler-Distributors 415110 New and Used Automobile and Light-Duty Truck Wholesaler-Distributors	I5511—Automobiles, Wholesale
415110 New and Used Automobile and	I5511—Automobiles, Wholesale I5512—Trucks and Buses, Wholesale
415110 New and Used Automobile and Light-Duty Truck Wholesaler-Distributors 415120 Truck, Truck Tractor and Bus	
415110 New and Used Automobile and Light-Duty Truck Wholesaler-Distributors 415120 Truck, Truck Tractor and Bus Wholesaler-Distributors 415190 Recreational and Other Motor	I5512—Trucks and Buses, Wholesale I5519—Other Motor Vehicles and Trail
415110 New and Used Automobile and Light-Duty Truck Wholesaler-Distributors 415120 Truck, Truck Tractor and Bus Wholesaler-Distributors 415190 Recreational and Other Motor Vehicles Wholesaler - Distributors New Motor Vehicle Parts and Accessories Wholesaler-Distributors	I5512—Trucks and Buses, Wholesale I5519—Other Motor Vehicles and Trail ers, Wholesale
415110 New and Used Automobile and Light-Duty Truck Wholesaler-Distributors 415120 Truck, Truck Tractor and Bus Wholesaler-Distributors 415190 Recreational and Other Motor Vehicles Wholesaler - Distributors New Motor Vehicle Parts and Accessories Wholesaler-Distributors 415210 Tire Wholesaler- Distributors 415290 Other New Motor Vehicle Parts	I5512—Trucks and Buses, Wholesale I5519—Other Motor Vehicles and Trailers, Wholesale I5521—Tires and Tubes, Wholesale I5529 - Other Motor Vehicle Parts and
415110 New and Used Automobile and Light-Duty Truck Wholesaler-Distributors 415120 Truck, Truck Tractor and Bus Wholesaler-Distributors 415190 Recreational and Other Motor Vehicles Wholesaler - Distributors New Motor Vehicle Parts and Accessories Wholesaler-Distributors 415210 Tire Wholesaler-Distributors 415290 Other New Motor Vehicle Parts and Accessories Wholesaler-Distributors Used Motor Vehicle Parts and Accessories Wholesaler-Distributors 415310 Used Motor Vehicle Parts and	I5512—Trucks and Buses, Wholesale I5519—Other Motor Vehicles and Trailers, Wholesale I5521—Tires and Tubes, Wholesale I5529 - Other Motor Vehicle Parts and Accessories, Wholesale
	Motor Vehicle Parts Manufacturing 336330 Motor Vehicle Steering and Suspension Components (except Spring) Manufacturing 336340 Motor Vehicle Brake System Manufacturing 336350 Motor Vehicle Transmission and Power Train Parts Manufacturing 336360 Motor Vehicle Seating and Interior Trim Manufacturing 336370 Motor Vehicle Metal Stamping 336390 Other Motor Vehicle Parts

441320 Tire Dealers

441310 Automotive Parts and

Tire Stores

Accessories Stores

Automotive Parts, Accessories and

J6342- Tire, Battery, Parts and Accessories Stores

J6341- Home and Auto Supply Stores



The data analysis conducted within this automotive study was performed on data derived from the Mississauga Employment Databases for the years 1995, 2000 and 2005.

Mississauga Employment (ME) Database

The ME database is owned and maintained by the Economic Development Office and the Planning and Building Department of the City of Mississauga. The ME Database accounts for all industrial, commercial, office and retail establishments within the City of Mississauga. Home based businesses are not accounted for within this database.

Location Quotient (LQ)

The LQ analysis helps determine the relative concentration of the sector studied in the local economy, in relation to the broader geographic economy. A LQ greater than one indicates that the local sector is stronger. A location quotient of less than one indicates that the broader geographic economy has a stronger sector.

The formula for computing a location quotient is as follows:

LQ = (ei/e)/(Ei/E)

where:

ei = Local employment in industry

e = Total local employment

Ei = Employment in industry, in the broader geographic economy

E = Total employment in the broader geographic economy

The LQ analysis reported on within the automotive study was performed based on the geography of the City of Mississauga in relation to Canada and Province of Ontario.

Gross Domestic Product (GDP)

This study reports on GDP data from the City of Mississauga and the automotive sector within the City of Mississauga. The GDP analysis reported within this study is extrapolated and based on Statistics Canada reports of GDP figures, which are reported at the country (Canada) and at the provincial (Ontario) levels.

The formula used for computing a GDP is given below:

GDPL = (GDPC/EC) * EL

Where:

GDPL = Local GDP

EL = Local Employment

GDPC = Country/Provincial GDP as reported by Statistics Canada

EC= Country/Provincial Employment as reported by Statistics Canada



CHAPTER 1

Study Context
The Aerospace
Manufacturing, Airline
and Airport Related
(AMAA) Sector

A. Background

The Aerospace Manufacturing, Airline, and Airport and Related (AMAA) sector is a well-established and significant contributor to Canada's, the Ontario and Mississauga's economy. Certainly, the Economic Development Office (EDO), City of Mississauga recognizes that the recent expansion of Toronto Pearson International Airport, which is Canada's largest international airport, has contributed to Mississauga being recognized as a key location draw for the important AMAA sector.

The global aerospace manufacturing industry is in growth mode. The AMAA's existing cluster in Mississauga and the location of Toronto Pearson International Airport within the city, offer opportunities to attract additional AMAA industry investments to the city. In order to continue to attract AMAA-related investments to Mississauga, the EDO decided to analyze both the strengths and opportunities of the AMAA sector, develop plans to market key strengths, and put in place a plan to build upon those strengths.

Toronto Pearson International Airport began as a small airport in Malton and has had a great effect on Mississauga as the airport expanded to become Canada's largest and busiest international airport. Once home of the famous Avro Arrow airplane, Malton's global standing as a leader in aeronautical design and manufacturing helped lead the

growth of this sector in Mississauga.

Innovation in the aerospace industry continues today. There are emerging opportunities for the AMAA as the market further develops to service the needs of corporate Canada. One such opportunity is fractional ownership of small and affordable business jets. This may be the next step in the evolution for the Canadian aerospace manufacturing sector. First emerging in the 1980s, this market has become a steadily growing one for companies that rely on chartering corporate aircrafts. With the cost of owning an aircraft prohibitive for even some of the largest firms, fractional ownership allows for up to eight owners to share in the cost and maintenance of a small jet and have it available with eight hours notice.

Clearly, as the aerospace industry continues to innovate and grow, Mississauga firms will be able to take advantage of these opportunities.

B. The Aerospace Manufacturing, Airline and Airport Related (AMAA) Sector

Sector Defined

The primary focus of this research report is the aerospace manufacturing sub-sector. The data and the analysis presented in the Canada, Ontario, and the Greater Toronto Area sections, the greater geographical regions, are based on the aerospace manufacturing sub-sector alone.

The report, in the City of Mississauga section, recognizes the importance of all three sub-sectors to Mississauga's economy, and therefore relates to all of the sub-sectors. A detailed analysis, for comparison purposes with the greater geographical regions, is presented for each of the sub-sectors.

For the purposes of the study, the sub-sectors have been defined as:

1. Aerospace Manufacturers

1.1 Manufacturers

The manufacturers sub-sector includes businesses that are engaged in manufacturing of aircraft, missiles, space vehicles and their engines, propulsion units, auxiliary equipment, and parts thereof. Businesses that are involved in research and development, production of prototypes, aircraft factory overhaul and conversion of aircraft and propulsion systems are also included in this category.

1.2 Repair and Overhaul Aircraft

The repair and overhaul of aircraft businesses are included in the manufacturing category because of the high technology content and the requirement of highly skilled labour within their operations.

Businesses included in this category are primarily engaged in providing specialized services to the air transport industry. Their activities include, servicing aircraft, repairing and maintaining aircraft (except on a factory basis), and inspecting and testing aircraft.

2. Airlines

The airline sub-sector includes all businesses that operate as a common carrier for transportation purposes, of people and/or of goods, using aircraft, such as airplanes and helicopters.

3. Airport and Related Services

The airport and related services sub-sector includes all businesses who are primarily engaged in operating international, national and other civil airports. Their activities include operating airports, renting hangar space, providing air traffic control services, baggage handling, cargo handling and aircraft parking services.



A. The Global Perspective

The AMAA industry is one of the most lucrative and important drivers of the global knowledge industrial base. The industry incorporates cutting-edge technology and generates valuable benefits for the national economy, including exports, innovation, generates spin-off jobs and solid income. For this reason, the aerospace industry has consistently attracted a great deal of attention from governments around the world, all aiming to capture more aerospace investment and production for their respective areas. This sector's strategic economic importance has required governments to find ways to try to increase their share of valuable jobs and investments by offering subsidies, public procurement, trade interventions, and public ownership of aerospace facilities and companies.

The global aerospace travel industry experienced substantial restructuring over the last several years. Changes, caused by increased competition, the restructured airline industry, and the post-cold war era with its declining defence and space budgets, were and continue to be the driving force for consolidation experienced by the Original Equipment Manufacturers (OEMs) of the aerospace industry.

Traditionally, the OEMs had full vertical design and integration responsibility for all of their products. Contract purchasing of parts and component systems from suppliers was largely limited to the build-to-print elements and sub-systems.

The aerospace environment in comparison today has changed significantly. The OEMs have been refocusing their roles, leading to profound changes in industry supply chains. On the commercial side, the OEMs are striving to reduce design-development cycle times in order to bring new products to the market quicker and cheaper. In order to achieve this, the OEMs are shifting the responsibility of their core competencies in design, integration and assembly down the supply chain.

In response to financial pressures, the OEMs have moved to reduce their number of suppliers and have demanded that suppliers contribute to product development costs and take a share in the associated risks. This is forcing consolidation lower down the supply chain creating a small number of very large global companies that can provide complete sub-system packages.

The global commercial airline industry is in recovery mode since 2004. Requirements

for new commercial aircrafts for markets in Asia and Europe are also helping to boost the global aerospace manufacturing sector. Boeing has had a record number of new commercial airplane net orders (1,002) in 2005. Mississauga based firms supply this OEM and will benefit from the recovery of the global aerospace industry.

Mississauga firms will also benefit from the expected growth in the business aircraft market, a niche market with the Greater Toronto Area (GTA), based OEM Bombardier and the Mississauga-based Pratt & Whitney Canada, which are among the leading firms in this market.

B. Canada: A Significant AMAA Player

Canada is an important player in the global aerospace and defence industry. In terms of commercial aerospace, Canada is the fourth-largest producer in the world, after the United States, United Kingdom and France.²

The Canadian aerospace manufacturing industry is sometimes referred to as the "crown jewel" of the manufacturing sector. As such, aerospace production is a unique technology-intensive undertaking, considering the safety, reliability and complexity that is required of aircraft and their components.

Aerospace production tends to generate a disproportionate number of high-skill, knowledge based jobs.

The industry ranks as one of the top manufacturing sectors in terms of R&D intensity, export intensity and value-added per employee. It provides high-quality employment for upwards of 75,000 Canadians.³

The Canadian aerospace manufacturing industry generated revenues of \$21.7 billion in 2004, of which 84 per cent came from exports. Collectively, the Canadian aerospace and defence sector contributed \$9.2 billion toward Canada's gross domestic product (GDP); accounting for more than 5 per cent of Canada's total manufacturing GDP. The Canadian industry has tripled its share of world production in the past 25 years and has invested more than \$1.2 billion on R&D in 2004.³

Figure: 2.1

INDUSTRY SNAPSHOT 2005

Source: Aerospace Industry Association of Canada (AIAC), "Canadian Aerospace by the Numbers", January 2006, www.aiac.ca.

INDICATORS

- \$21.7 billion in sales
- \$18.3 billion in exports
- 75,000 employees
- \$1.1 billion in R&D

The Magellan Aerospace Corporation corporate headquarters houses what was formerly known as the Orenda Aerospace plant, where the Iroquois engines for the AVRO Arrow aircraft were built in the mid 1950s. Since the time of the Arrow, Orenda has developed into a world class component manufacturer and maintenance provider for gas turbine engine applications for commercial, military and industrial customers worldwide.

The manufacturing facilities make highly complex machined and fabricated parts for a range of gas turbine engines for Original Equipment Manufacturers such as General Electric, Rolls-Royce, United Technologies Pratt and Whitney, Honeywell, Volvo, MTU and the United States Government. Orenda is involved in some of the latest engine programs including the GE F414 and the Lightning II Joint Strike Fighter engines, the P&W F135 and GE/R-R F136.

Source: Magellan Aerospace Corporation

¹ Source: Boeing, "2005 Annual Report", www.boeing.com and Airbus (1,055) Source: Airbus, "Corporate Information", November 16, 2006, www.airbus.com

² Source: Government of Canada, "National Aerospace and Defence Strategic Framework: 2005-2025", www.strategis.ic.gc.ca/aerostrategicframework

³ Source: Aerospace Industry Association of Canada (AIAC), "Canadian Aerospace by the Numbers", January 2006, www.aiac.ca

Each aerospace worker produces \$140,000 of value-added worth to the GDP per year – nearly twice as much as the average employee for Canada's whole economy – and the industry's productivity has grown 50 per cent in the last decade.⁴

Canada's aerospace manufacturing industry has several major indigenous firms including, Bombardier, CAE, CMC Electronics, Heroux Devtek, Magellan Aerospace, SNC and MDA. It also has attracted significant direct investments by foreign-owned firms, such as Pratt & Whitney Canada, Bell Helicopter Textron, Boeing, Honeywell, Goodrich, Messier-Dontry, Rolls-Royce and General Dynamics. Like many industries, it is highly concentrated, with the top 30 firms representing 95 per cent of production. Bombardier represents

about 45 per cent of the industry's sales. Smaller companies that are part of the local and global supply chains, round out a significant domestic supply base.

Specialization in Key Products and Technologies

The Canadian aerospace manufacturing industry is an important player on the world stage and holds significant market share in key segments. Canadian firms are global market leaders in regional aircraft, business jets, commercial helicopters, small gas turbine engines, flight simulation, landing gear, and space applications. They offer globally competitive, innovative solutions backed by sustained investment in R&D and a highly skilled workforce.

(Figure 2.2)

KEY SEGMENTS - CANADIAN INDUSTRY LEADERSHIP

Source: Aerospace Industries Association of Canada, Teal Group.

Published in: Government of Canada, "National Aerospace and

Defence Strategic Framework: 2005-2025",

www.strategis.ic.gc.ca/aerostrategicframework

SEGMENT WORLD MARKET SHARE 20-90 seat regional aircraft 47% Small gas turbine engines 34% Commercial flight simulators 80% Visual simulation sector 70% Civil helicopters 14% Landing gear 31% New large aircraft landing gear 60% Transport aircraft environmental control systems 60%

⁴ Source: Canadian Auto Workers (CAW), "Staying Aloft, A Sector Strategy for Canada's Aerospace Industry", November 2004, www.caw.ca

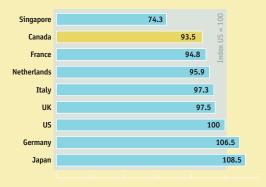
Canadian firms not only design and build aerospace and defence products to airline and other final users, they also supply to major global OEMs like Boeing, Airbus, Lockheed Martin and Raytheon.

This success is due to the key role that Canadian-owned firms play in the sector and to the presence of several globally connected firms with world product mandates (e.g. Pratt & Whitney Canada, Honeywell Canada). Canada has built up substantial expertise in these areas and has developed successful products that meet the needs of world markets.

(Figure 2.3)

AIRCRAFT PARTS MANUFACTURING COSTS

Source: KPMG Competitive Alternatives, 2006 Study



(Figure 2.4)

OCCUPATIONAL WAGES — KNOWLEDGE WORKERS, 2003

Source: Aerospace Industries Associations of Canada (AIAC)

Available online at www.investincanada.gc.ca/en/898/Workforce.html

Full-time, full-year wages*	(\$ U.S. PPP**)
EMPLOYMENT POSITION	CANADA	U.S.
Aerospace Engineer	\$55,283	\$76,530
Mechanical and		
Electrical Engineer	\$52,258	\$68,792
Computer Scientist	\$44,453	\$68,186
Mechanical Technician	\$38,230	\$47,025
Machinist	\$33,973	\$38,563

Canada's Cost Advantage

KPMG's comprehensive international study of business costs, "Competitive Alternatives (2006)", reveals that Canadian aerospace manufacturers and suppliers enjoy significant cost advantages over their U.S. and European counterparts.

Challenges Impacting Canadian Aerospace

Changes in the global aerospace industry are bringing forth opportunities and challenges to the Canadian aerospace industry.

Global aerospace sales are expected to reach U.S. \$2 trillion over the next 20 years. The global industry is shifting, and the past decade has shown dramatic changes in the way business is conducted and how the industry is organized.

Governments globally, that support the aerospace industry, are seeking to establish indigenous capabilities by attracting major investments in exchange for potential market access. Low labour costs are also posing a critical challenge to Canadian industry, underlining the importance of moving to higher-value-added products and improved productivity.

Canada's mature product base puts it at a critical juncture, at a time where it needs to make substantial investments in R&D and new-generation technology, product and capability development, to take advantage of market opportunities.

Support from the Canadian Government

Canada's federal and provincial governments have pro-actively been involved in nurturing our domestic aerospace capabilities, along with talented Canadian entrepreneurs and skilled Canadian workers, by consciously and deliberately challenging market forces. Governments, at senior levels, have always had to intervene to support the development of the aerospace industry in Canada either by:

1. Creating military procurement

⁵ Source: Government of Canada, "National Aerospace and Defence Strategic Framework: 2005-2025", available online: www.strategis.ic.gc.ca/aerostrategicframework

- 2. Direct government ownership of manufacturing operations
- 3. Active support for specific product developments programs like:
 - a) R&D support through Technology Partnerships Canada;
 - Industry sales financing through the Regional Aircraft Credit Facility and Export Development Canada.
- 4. Indirect financial support for major aircraft purchases
- 5. Pursuing advances through government, in-house R&D activities and initiating next-generation services, such as 'Earth observation' or satellite communication services, which were transferred to industry once demand was high enough to sustain commercial activity. The space sector has also been supported by the Space Technology Development Program, the Government-Related Initiatives Program and the Earth Observation Application Development.⁶

Strong Technical Education

Canada's universities and colleges have internationally recognized programs to train aerospace engineers, aerospace manufacturing engineers, aviation technicians and aircraft maintenance engineers. The Canadian Aviation Maintenance Council (CAMC) has played a key role in developing curriculum as well as accrediting programs for training institutions for the aerospace maintenance sector.⁶

Solid Industry Infrastructure

The industry benefits from a solid aerospace and defence infrastructure such as university facilities, the National Research Council's Institute for Aerospace Research including the Aerospace Manufacturing Technologies Centre, the Canadian Space Agency's David Florida

Laboratory, Defence Research and Development Canada and the Composites Innovation Centre. The industry also works with universities in support of the sector's R&D efforts.⁶

High Regulatory Standards

Canada maintains high regulatory standards for its aerospace sector. Transport Canada's strong regulatory framework for aircraft certification and aircraft MRO (Maintenance, Repair, Operations) push the Canadian industry to maintain high standards in aircraft development and maintenance.⁶

Future Initiatives & Canada's Vision for the Aerospace and Defence Industry -2005 to 2025

As per the National Aerospace and Defence Strategic Framework study, "Canada will be home to a growing, innovative and diversified industry, recognized as a leader in serving global aerospace and defence markets and a preferred location for investment."

Through the work, commitment and collaborative partnership of governments, companies, workers, academic groups and other stakeholders, Canada will create an aerospace and defence industry that is:

- a source of national pride and a globally recognized brand of Canadian excellence;
- a creator of national wealth and provider of challenging and rewarding jobs for Canadians;
- a key contributor to security and military readiness in Canada and among our allies;
- a lever for effectively achieving a wide range of public policy objectives and needs.
 For more information on the Canadian aerospace and defence sectors vision and strategic initiatives, refer to the study, "National Aerospace and Defence Strategic Framework: 2005-2025" from Industry Canada's web site: www.strategis.ic.gc.ca/aerostrategicframework

⁶ Source: Government of Canada, "National Aerospace and Defence Strategic Framework: 2005-2025", available online: www.strategis.ic.gc.ca/aerostrategicframework

C. Ontario: The AMAA Advantage

Ontario aerospace firms are world leaders in turboprop production, business and light aircraft assembly, environmental controls, landing-gear systems, small turbine engines. This long history of success of Ontario firms includes developing innovative products and technologies.

Ontario's Advantages

1. A diversified network of globally competitive firms

More than 350 Ontario aerospace firms, with expertise in aircraft integration, complete system engineering and assembly, provide a wide range of aviation design, manufacturing and product support to the global aerospace industry. Ontario is home to Bombardier Global Express business jets, and the Q Series regional aircraft.

As world leaders in both major aerospace programs and select niche markets, Ontario firms are involved in the production of diverse aircrafts such as the Airbus A380, Boeing 787 and the U.S.-led Joint Strike Fighter (F-35).

2. A workforce that is skilled, educated and available

- 56 per cent of Ontario's workforce has completed its post-secondary education, a rate that is higher than any OECD (Organization for Economic Co-operation and Development) country
- Ontario's 20 universities and 24 colleges of applied arts and technology produce 29,000 graduates a year in mathematics, engineering and sciences
- 18 universities and colleges offer 36 aerospace programs, from advanced doctorates in aerospace engineering to diplomas in aviation management, maintenance and service technology. Internationally respected institutes and faculties include:
 - University of Toronto's Institute for

Aerospace Studies

- Carleton University's Department of Mechanical and Aerospace Engineering
- Queen's University's Faculty of Applied Science
- 14 universities with engineering programs
- 26 colleges (100 campuses) of applied arts and technology ⁷

3. Ontario's cost advantage in aerospace

The Ontario cost advantage in aerospace is in large part due to the overall cost advantages at a normal level.

Figure 2.5

ONTARIO AEROSPACE OVERVIEW

Source: Province of Ontario, "Aerospace in Ontario", published by Queen's Printer for Ontario, 2004, www.2ontario.com

- 4.26 billion revenues (2003)
- 23,000+ employees
- 350+ firms
- primarily mid-sized firms
- Canadian exports account for 77 per cent of revenues
- 86 per cent of Canadian exports go to the United States

Compared to the U.S. average, Canadian costs are lower by:

- 6.5 per cent in aircraft parts manufacturing
- 8 per cent in precision component manufacturing
- · 3.4 per cent in electronics assembly
- 4.5 per cent in plastic product manufacturing $^{\rm 8}$

4. Location and infrastructure

- Ontario-based companies have full access to the North American free trade area via a transportation infrastructure that moves products quickly and efficiently. The Economist Intelligence Unit ranks Canada's infrastructure ahead of all G7 countries for 2003-2007
- Toronto Pearson International Airport Canada's premier air passenger and cargo gateway is served by 50 carriers offering same-day

⁷ Source: Province of Ontario, "Aerospace in Ontario", published by Queen's Printer for Ontario, 2004, www.2ontario.com

⁸ Source: KPMG, "Competitive Alternatives, KPMG's guide to international business costs", 2006 edition, www.competitivealternatives.com

service to more than 110 destinations in 44 countries. It handles approximately 360,000 metric tonnes of cargo per year.

 Ontario's corporate centres are approximately 2-hours by air from major U.S. centres with Cleveland, Chicago, New York, Philadelphia and Washington all within a 12-hour drive of southern Ontario.

5. Ontario's business climate aids aerospace industry growth

Ontario is the manufacturing and financial services centre of Canada. The province is home to 54 per cent of Canada's manufacturing base and 48 per cent of the high-tech industries. Ontario has the highest number of ISO 9000 registered companies in North America. Ontario exports more than \$135 billion in products every year; 92 per cent of which are shipped to the United States.

Ontario also helps researchers move innovative ideas from the lab to the marketplace

through the Ontario Centres of Excellence Programs. There are four centres: the Centre for Research in Earth and Space Technology (CRES Tech), Communications and Information Technology Ontario (CITO), Materials and Manufacturing Ontario (MMO), and Photonics Research Ontario (PRO).

Initiatives of the Ontario Government

The Ontario aerospace stakeholders, along with the Ontario government, laid down the foundation of the Aerospace Action Partnership (AAP) in 2003.

The AAP steering committee in October 2004 endorsed the Ontario Aerospace Strategy, outlined in the study, "Flight Path: A Vision for the Future"

For more information on the Ontario aerospace strategy, please download the study from the web site of the Ontario Aerospace Council at: www.oac.gc.ca, or from: www.toronto.ca/invest-in-toronto/aerospace.htm

Figure: 2.6
INNOVATION INCENTIVES FOR LARGE ONTARIO MANUFACTURERS (PUBLIC, PRIVATE OR FOREIGN-OWNED)

Source: Ernst & Young LLP

Published in: Province of Ontario, "Aerospace in Ontario", Queen's Printer for Ontario, 2004, www.2ontario.com

	R & D EXPENDITURES	R&D EXPENDITURES AT ELIGIBLE ONTARIO RESEARCH INSTITURES ¹	NON-R&D EXPENDITURES
Gross expenditure	\$100.00	\$100.00	\$100.00
Ontario — 20% OBRI tax credit ²		(20.00)	
Federal investment tax credit (ITC) — 20%	(20.00)	(16.00) 4	
Tax deduction ³			
\$80 ^x 34.12%	(27.30)		
\$64 ^x 34.12%		(21.84)	
\$100 ^x 34.12%			(34.12)
Ontario exemption of federal investment tax credit			
\$20 ^x 12.0%	(2.40)		
\$16 ^x 12.0%		(1.92)	
After-tax cost of \$100 expenditure	\$50.30	\$40.24	\$65.88

Notes:

¹ Eligible Ontario research institutes include universities, colleges of applied arts and technology, research hospitals and other entities in Ontario.

² The 20% refundable Ontario Business-Research Institute (OBRI) tax credit

 $^{^3}$ 2004 tax rates for manufacturers: Federal 22.12% + Ontario 12.0% = 34.12%

⁴ The federal investment tax credit of \$16 is calculated by applying the 20% ITC rate on net expenditures of \$80 (which is the gross expenditure of \$100 less the \$20 OBRI tax credit).

x Source: Source: Ernst & Young LLP Published in: Province of Ontario, Aerospace in Ontario, Queen s Printer for Ontario, 2004, www.2ontario.com

D. GTA: AMAA Highlights

Toronto Pearson International Airport

Toronto Pearson International Airport is Canada's largest and busiest airport, welcoming 29.9 million passengers in 2005. Originally built in 1939, the airport currently handles more than 1,200 arrivals and departures every day. Forecasts indicate that by the years of 2020 – 2025, the number of travellers passing through the airport's gates is expected to reach 50 million.

Located in the City of Mississauga, Toronto Pearson International Airport brings extensive economic benefits to the region it serves, including:

- 130,000 jobs (Figure 2.8)
- \$4.1 billion in wages
- \$14.7 billion in business revenue
- \$134.5 million in rent to the federal government
- \$25.7 million in payments in lieu of taxes to the cities of Toronto and Mississauga
- \$25 million (est.) in real property taxes paid by airport tenants

Figure 2.7
PASSENGER VOLUME CURRENT AND PROJECTED

Source: 2005 Noise Management Report, Published by the Greater Toronto Airport Authority (GTAA)

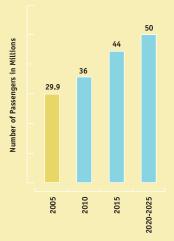
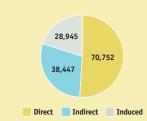


Figure 2.8

EMPLOYMENT ATTRIBUTED TO TORONTO PEARSON INTERNATIONAL AIRPORT

Source: 2005 Noise Management Report, Published by the Greater Toronto Airport Authority (GTAA)



CHAPTER 3

Mississauga: Strengths for the AMAA Sector

Figure 3.1

WORLD LEADERS IN SELECTED NICHE MARKETS

Honeywell Airframe Systems:

- environmental control systems
- electric power systems

Indal Technologies Inc.

• helicopter recovery systems (naval)

Magellan Aerospace Corporation:

• leading aerospace integrator

Pratt & Whitney Canada

• small gas turbine engines

Source: Aerospace in Ontario

The Greater Toronto Area (GTA) which includes Mississauga, is the second largest aerospace manufacturing cluster in Canada, generating more than \$6 billion annually in sales of aerospace goods.⁹

The City of Mississauga's strategic geographic location at the centre of the GTA, its established infrastructure, including the location of Toronto Pearson International Airport, and its diversified economy are key advantages to the aerospace sector businesses in the Mississauga.

Aerospace in the Greater Toronto Area

The GTA region's aerospace enterprises provide a broad range of aerospace/aviation design, manufacturing and product support

for markets worldwide. GTA is also the global centre for production of regional commercial turboprop aircraft. In total, the GTA has a network of more than 100 high technology firms with a global customer base spanning the commercial aviation, defence and security and space market segments. The GTA also has a substantial infrastructure of suppliers of subsystems, components, proprietary products and specialized services.

The research and development undertaken within the region is among the best in the world and exceeds \$350 million annually. Innovative technology developed locally includes breakthrough satellite technology that has enhanced communications globally, and the development of the famed Canadarm and other components of NASA's Remote Manipulator System.

The GTA cluster includes globally renowned aerospace companies such as, Bombardier Aerospace, Goodrich Landing Gear, Honeywell, Interfast, L3 Communications, Luxell Technologies, Messier-Dowty, MDA Space Missions, Pratt & Whitney Canada, Magellan Aerospace, and Northstar Aerospace. More than 200 GTA aerospace manufacturing firms employ a workforce of over 20,000 highly skilled and educated technicians focused on systems engineering, equipment production and integration.9

⁹ Source: Aerospace Industry Association of Canada (AIAC), "Aerospace in the Greater Toronto Area", Spring 2006, www.aiac.ca

Luxell is able to capitalize on the many benefits the City of Mississauga has to offer. The close proximity of three major highways and the Toronto airport allows easy access to visiting clients. The number of qualified suppliers to the aerospace industry located in Mississauga allows for the quick delivery of parts and re-enforces strong business relationships.

Source: Luxell Technologies Inc.

Lower Costs Attract AMAA Companies

The aerospace cluster in the GTA continues to grow, generating significant exports and keeping Canada at the forefront of this key international industry. The GTA's location ensures easy access to the world's largest aerospace market, the United States, while offering lower production costs than many competing locations as well as the import-export advantages of the North American Free Trade Agreement (NAFTA).

A. Mississauga's Aerospace Cluster

In 2005, the City of Mississauga's aerospace sector employed 22,305 people and consisted of 205 businesses (Refer to figure 3.5).10 Many global aerospace manufacturing giants like General Electric Canada; Honeywell; Indal Technologies Inc.; L-3 Communications Spar Aerospace Ltd.; Magellan Aerospace Corp.;

and Pratt & Whitney Canada Inc. call the City of Mississauga home.

The analysis of the Mississauga aerospace sector shows that approximately 74 per cent of the employment in the AMAA sector is linked to Toronto Pearson International Airport and its operations.

B. Toronto Pearson International Airport

Mississauga's strength also attracts most of the major international airlines. Companies such Air Canada, Delta, Alitalia, Cathay Pacific Airways to name a few, have offices in the City. The City's strength also results in strong air cargo capabilities for the business sector as the firms service their clients through the international airport. Companies like Core Logistics International Inc., All Canada Express Inc., Excel Cargo and ACI Air Cargo Inc. are located within Mississauga for this reason.

MISSISSAUGA BASED AIRLINE AND CARGO COMPANIES

Airline Companies:

Air Alliance Air Canada Air Georgian Ltd. **Alitalia Airlines** Cathay Pacific Airways Ltd. **Chartright Air Continental Airlines & Cargo** Delta Airlines Inc. Skycharter Ltd. **Skyservice Airlines**

Cargo Companies:

ACI Air Cargo Inc. Air Canada All Canada Express Ltd. **Core Logistics** International Inc. Excel Cargo **Lufthansa (German) Airlines** Lufthansa Cargo **Northwest Airlines Inc. U.S.** Airways Air Cargo Transportation & Warehousing Serv.

Source: City of Mississauga, Economic Development Office, Mississauga Employment Database, 2005

C. AMAA Sector Composition

(Refer to figure 3.2)

- II.2 per cent (23) of businesses with IOO+ employees, employed 88.I per cent of the employees in the sector
- 40 per cent (82) of businesses ranging form
 10 99 employees, employed 10.3 per cent
 (2308) of employees
- 48.8 per cent (100) of businesses ranging from 0 9 employees, employed 1.6 per cent (353) of employees

(Refer to figure 3.3)

A closer look at the businesses with 100+ employees by sub-sectors shows:

- The airline industry is the largest sub-sector and accounted for 44.8 per cent of the employees in the 100+ category
- The airport and related services accounted for 22 per cent of the employment
- The manufacturing sector accounted for 21.2 per cent of the employment

(Refer to figure 3.4)

An analysis of how the various sub-sectors of the aerospace sector accounts for the total employment within the sector provides some interesting insight on how the Mississauga AMAA sector has evolved over the years.

Since 1995, the overall employment in the manufacturing sub-sector has increased, however its proportion share to other sub-sectors has decreased. Concurrently the airport and related services has increased their respective proportion.

Figure 3.2
2005 CITY OF MISSISSAUGA'S AEROSPACE COMPANIES
BY EMPLOYEE RANGE

Source: 2005 Mississauga Employment Database

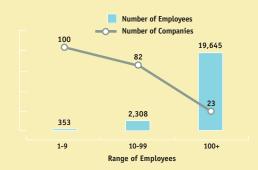


Figure 3.3
CITY OF MISSISSAUGA'S AEROSPACE SECTOR EMPLOYMENT WITH 100+ EMPLOYEES BY SUBSECTOR

Source: 2005 Mississauga Employment Database

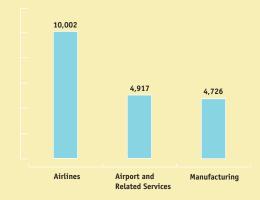


Figure 3.4
SECTOR COMPOSITION

Source: City of Mississauga Employment Database for the years 1995, 2000 and 2005 $\,$



D. Growth of the Sector

The City of Mississauga's Aerospace Manufacturing, Airline, Airport and Related (AMAA) sectors' employment, taken as a whole, has achieved substantial growth since 1995. Between 1995 and 2005, the AMAA sector's employment grew from 13,618 employees (1995) to 22,305 (2005), posting a growth rate of 64 per cent over 10 years. On average, the combined AMAA sector has added 868 jobs per annum over a 10-year period, to the City's economy. (*Refer to figure 3.6*)

Among the sub-sectors, between 1995 and 2005, the airport and related sub-sector posted the largest growth in employment adding 3,912 employees. The airline sub-sector posted the second highest growth by adding 3,313 employees. The manufacturing sub-sector grew by 1,463 employees. The growth in employment in the airport and related sub-sectors can be attributed to the increase in demand for air travel (refer to figure 3.5) and the \$4.4 billion Airport Development Program (ADP) at Toronto Pearson International Airport, undertaken by the Greater Toronto Airport Authority (GTAA), to accommodate that growth in demand.

Between 2000 and 2005, the Mississauga airport and related sub-sector was the only sub-sector to post a growth, adding 1,634 jobs. The airline sub-sector lost 1,414 jobs and the manu-

Figure 3.6
CITY OF MISSISSAUGA, AEROSPACE EMPLOYMENT GROWTH
Source: Mississauga Employment Database

facturing sub-sector lost 841 jobs, during the same period. The loss in employment was due to the global slowdown that affected the travel industry following September 11, 2001.

The global commercial airline industry has gained strength since 2004. Requirements for new commercial aircrafts for markets in Asia and Europe are also helping to boost the global aerospace manufacturing sector. As a result, employment in the Mississauga's aerospace industry will be positively affected with these new opportunities.

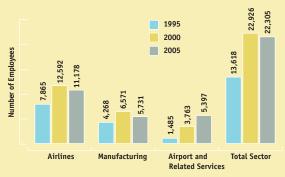
The airport and related sub-sector services added more jobs between 1995 and 2000 (2,278 jobs), compared to the period between 2000 and 2005 (1,634 jobs). During 1995 and 2000, both the Airline and the manufacturing sub-sectors posted positive employment growth of 4,727 jobs and 2,303 jobs respectively.

(Figure 3.5)

PASSENGER TRAFFIC FROM TORONTO PEARSON INTERNATIONAL AIRPORT

Source: Greater Toronto Airport Authority, available online: www.qtaa.com

- 29.91 million passengers travelled in 2005
- 28.04 million passengers travelled in 2001



Sector Classification

CHAPTER 4

Mississauga:
A Hot Spot for the Aerospace
Sector

A location quotient analysis helps determine the relative concentration of the aerospace sector in Mississauga's economy, in relation to the broader geographic economy. A location quotient greater than one, indicates that the local sector is stronger. A location quotient of less than one indicates that the broader geographic economy has a stronger sector.

The location quotient analysis presented in this section is based on the aerospace manufacturing sub-sector alone (NAICS 3364). Compared to Canada, Mississauga has a 9.87 location quotient. This positive location quotient

supports the strength of the aerospace manufacturing sub-sector in the City of Mississauga.

A. Mississauga's Strength in the AMAA Sector

The GTA, has the second largest aerospace cluster in Canada due in large part to the many dynamic firms located in Mississauga.

Mississauga's AMAA sector has increased over the last decade and is now home to 205 AMAA businesses and approximately 22,305 employees, representing 5.5 per cent of total employment in the City.

Figure 4.1

2005 AEROSPACE MANUFACTURING SECTORS EMPLOYMENT AND GDP CONTRIBUTION TO THE CITY OF MISSISSAUGA REGION

Source: City of Mississauga's Economic Development Office



^{*} The multiplier effect is a measure of the economic consequences of the change in one sector of the economy upon the other sectors of the economy. It incorporates the direct effects (project construction jobs) plus those supported through project purchases of goods and services (indirect jobs) plus the effects to the rest of the economy due to household spending (induced jobs).

+The multiplier effect is based on ratios estimated by the International Civil Aviation Organization, available at www.icao.int/atworkshop. The estimate does not take into consideration the expanded multiplier effects of civil aviation including the catalytic demand effects of air transport users, such as visitor expenditures or revenues of freight forwarders.

 $^{^{}m II}$ Source: Aerospace Industry Association of Canada (AIAC), "Aerospace in the Greater Toronto Area", Spring 2006, www.aiac.ca

B. GDP and Employment Impact on the Regional Economy

In 2005, The City of Mississauga's nominal GDP was estimated to be \$33.67 billion. The aerospace manufacturing sub-sector's direct contribution to the City of Mississauga's GDP is estimated to be \$1.44 billion (4.2 per cent of Mississauga's GDP). The combined direct, indirect and induced effect on the regional and national economy is estimated at \$3.69 billion.

(Refer to figure 4.1).

Similarly, the City of Mississauga's aerospace manufacturing employment is 5,731. The entire direct, indirect and induced effect on the regional and national economy is estimated at 15,281 employees.

(Refer to figure 4.1).

CHAPTER 5

Mississauga's Strategic Location

Mississauga's diversified economy and established infrastructure, especially with the location of Toronto Pearson International Airport within its boundaries, makes the City a strategic operational location for the aerospace manufacturing business.

Mississauga, with a solid commitment to the health and vitality of our sectors, is located in the heart of Canada's economic engine. The City recognizes that the aerospace is an enabling industry with above average knowledge requirements for its employees and is a key strategic sector for Canada.

A. Competitive Advantages of Mississauga

1. Catalyst for Innovation Activities

In a knowledge-based economy, economic success and education are integral. Mississauga recognizes that the ability to draw from a highly qualified talent pool of employees, with the necessary skills to help aerospace companies compete

globally, is a prime concern.

For this reason, Mississauga continuously champions efforts to intensify innovation activity. The City is a partner in the Western Greater Toronto Area Convergence Centre (WGTACC) – a network of business, education, institutions, and government partners, working together to accelerate new business opportunities and innovation.

Mississauga fosters business education partnerships that contribute to a superior education climate and an internationally successful business community. The City actively supports the University of Toronto, Mississauga Campus and its academic and campus expansion plans.

2. Diverse and Dynamic Business Community

Mississauga's 52,000-strong, business community is diverse and includes leading clusters in the aerospace, automotive, Information Communications Technologies (ICT), biomedical and financial and real estate services.

Pratt & Whitney Canada is the number one R&D investor in the Canadian aerospace sector. Our company ranks Canada first internationally for access to well-educated workers. We get great people - graduates from first-rate engineering courses offered by Canadian universities.

Alain M. Bellemare, President Pratt & Whitney Canada

A Mississauga company.

Source: Invest in Canada, www.investincanada.gc.ca/en/889/Aerospace.html

- Mississauga's aerospace sector is comprised of more than 205 businesses employing 22,305 people.
- Mississauga's automotive sector is composed of approximately 500 businesses employing 17,673 people.
- Mississauga's biomedical cluster is the third largest cluster in Canada and is an integral part of the GTA biomedical community.
- The Mississauga ICT sector continues to be a major catalyst for growth, powering advances in the bio sector and synergies for further innovation.
- Mississauga is also home to Canada's third largest financial, insurance and real estate (FIRE) cluster. Our location, adjacent to the financial capital of Canada, allows for easy access to various venture capital and other financing options that invest in aerospace sector firms and spin-off businesses.
- The City is the location of choice for many world-renowned corporations who operate their head office and facilities here. More than 56 of the Fortune 500 U.S. companies chose Mississauga as the site of their Canadian head office. Canadian companies realize the advantages of locating in Mississauga: over 40 of the country's Top 500 corporations are head quartered here. Mississauga ranks as the fourth largest head office centre in the Country. 12

3. Intellectual Capital

• Some of Ontario's finest post-secondary institutions surround Mississauga, offering

- a wide variety of educational opportunities. These include well-recognized academic institutions, such as University of Toronto's Mississauga campus (UTM), a highly regarded research-based university; and a campus of the University of Western Ontario's Richard Ivey School of Business. In total, there are 10 major universities and 11 community colleges within commuting distance of Mississauga.
- The City is part of the largest labour force market in Canada, the Greater Toronto Area (GTA). Within the GTA, employees are available for recruitment from a large employment base of 3.1 million people.
- In Mississauga alone, there are more than 440,000 employees with more than 82 per cent of our resident labour force with some post secondary education.
- The Toronto Census Metropolitan Area (CMA), which includes Mississauga, attracts the highest percentage of immigrants into Canada.¹³

The Department of Aerospace Engineering at Ryerson University:

The university offers a Bachelor of Aerospace Engineering degree that includes studies in aerodynamics, stress analysis and structural design, flight mechanics, stability and control, aircraft performance, propulsion, avionics and systems, together with courses in the fields of mechanical and electrical engineering. The program is one of only two Canadian undergraduate programs

University of Toronto, Mississauga, offers the Communication, Culture and Information Technology (CCIT) program, within a new state-of-the-art facility wired and equipped for the most advanced teaching technology and instructional support. The CCIT program offers four innovative specialist programs: Digital Enterprise Management (Arts); Health Sciences Communication (Science); Human Communication and Technology (Science); and Visual Culture and Communication (Arts).

¹² Source: National Post, Financial Post, Top 500 Canada's Largest Corporations, June 2005

¹³ Source: Statistics Canada, 2001 Census

Materials and Manufacturing Ontario (MMO):

Located in Mississauga, MMO, an Ontario Centre of Excellence, is committed to connecting the best university research and the needs of Ontario industry. MMO supports university research in materials and manufacturing, develops partnerships, trains qualified graduate students with an industrial orientation, and transfers knowledge and technology to industry.

(Source: Materials and Manufacturing Ontario (MMO), available online: www.mmo.on.ca)

accredited by the Canadian Engineering Accreditation Board (CEAB).

The university also offers programs at the Masters and PhD levels, jointly with the department of Mechanical and Industrial Engineering.

University of Toronto, Institute for Aerospace Studies (UTIAS), Toronto Campus

The academic program in aerospace science and engineering at the University of Toronto includes undergraduate and graduate studies. This research-intensive program focuses on aeronautical engineering (aircraft flight systems, propulsion, aerodynamics, computational fluid dynamics, and structural mechanics) and space systems engineering (spacecraft dynamics and control, space robotics, and micro satellite technology).

The undergraduate facilities include a flight simulator, wind tunnels and a large spacecraft simulator. ¹⁴

4. Transportation and Telecommunications Infrastructure

• Transportation Infrastructure

Mississauga is located at the centre of one of the most accessible transportation hubs in North America. Mississauga is home to Toronto Pearson International Airport. This allows our business community to enjoy ready access to the largest and busiest airport in Canada and an extensive road and rail network.

• Telecommunications Network

The aerospace sector benefits from Mississauga's extensive and highly developed telecommunications network and infrastructure. Existing fibre optic networks are rapidly evolving to become leading-edge technologies to provide speed and stability of data. The network services all business parks and offers bandwidth scalability on a simplified service portfolio. Mississauga is fully serviced by several wireless service providers offering 100 per cent integrated voice and data network services.

• Energy Distribution

Enersource Hydro Mississauga, the regulated electricity distribution affiliate of Enersource's Corporation, has delivered electricity reliability throughout Mississauga since 1917. The company, owned 90 per cent by the City of Mississauga, is Ontario's only public-private partnership in the local electricity distribution sector. Enersource is the fourth largest local distribution company in Ontario.

Enersource's reliability record is stellar. In 2005, the company averaged 32 minutes annual outage time per customer. This reliability is far ahead of most Canadian and U.S. large urban utility companies. Reliability such as this, saves Mississauga approximately \$60 million each year. Due to the relatively low cost of power and high reliability of service, Enersource Hydro Mississauga is helping to attract investment and jobs to the area. ¹⁵

¹⁴ Source: www.utias.utoronto.ca

¹⁵ Source: Enersource Hydro Mississauga, available online: www.enersource.com/hydro/service.htm

5. Access to a Vast Consumer Base

Mississauga is strategically centered in the hub of Ontario's thriving Greater Toronto Area (GTA). The City offers direct access to North America's vast, and quickly growing consumer market of 420 million North Americans with a combined GDP of more than U.S. \$13.8 trillion.¹⁶

The City's location, in proximity to the U.S. border, allows businesses to quickly

supply components and parts to the U.S. market. Our extensive infrastructure links Mississauga to the rest of Canada and strategic markets in the north eastern United States.

Canada and the United States have the world's largest trading partnership, with two-way trade amounting to more than U.S. \$580 billion in 2005. ¹⁷

¹⁶ Source: Province of Ontario, "Ontario's Auto Industry", published by Queen's Printer for Ontario, 2005, www.2ontario.com

¹⁸ Source: Industry Canada, Trade Data Online, available: www.strategis.gc.ca

CHAPTER 6

Mississauga: Positioned for Growth

Highlights and Forecast

The City of Mississauga has a rich history with the aerospace industry. Toronto Pearson Internal Airport began as the little airport in Malton and has since grown within Mississauga to become Canada's largest and busiest international airport. Malton acquired an international reputation as a leader in aeronautical design and manufacturing. It was home of the famous Avro Arrow, Canada's first supersonic aircraft, noted to have been years ahead of its time.

The aerospace sector in Mississauga has posted considerable growth since 1995, thanks to the City's developed infrastructure,

most importantly the location of Toronto Pearson International Airport. The City's extraordinary environment, location close to the U.S. border and its existing business community are other key influences that have played an important role in the growth of the AMAA sector in Mississauga.

Today, because of new initiatives from the federal government in the aerospace, sector, increased defence spending and the emergence of new markets in Asia, the aerospace manufacturing sub-sector in Mississauga will post a positive growth rate within the next five year period.

Mississauga's AMAA Sector is positioned for Growth

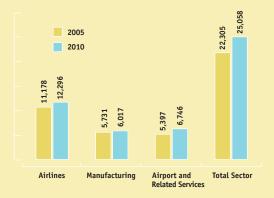
Mississauga's total employment in the aerospace sector is forecasted to grow from 22,305 (2005) to 25,058 (2010) achieving a growth rate of 12 per cent over the five year period. The following figure 6.1 provides a breakdown by sub-sector for this forecast.

The estimate is based on the growth percentage rate posted by the Mississauga aerospace sector between the years 1995 and 2000 and between 2000 and 2005. The estimate also refers to a forecast on Canada's OEM market share growth, published by the

Figure 6.1

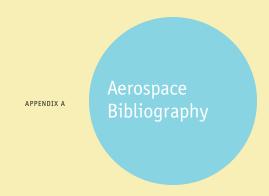
FORCASTED GROWTH IN AEROSPACE EMPLOYMENT

Source: City of Mississauqa's Economic Development Office



Teal Group Corporation, a company that publishes market intelligence on the Aerospace industry and forecasts trends in the industry. Also taken into account, is the Canadian and Ontario governments' pro-active plan to develop and increase the aerospace sectors competitive position from 2006 to 2025 and beyond, and the growth achieved by the commercial, defence and space industries since 2004.

It is clear that the Mississauga aerospace sector will continue to be a major contributor to Mississauga's vibrant and flourishing economy.



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APPENDIX B

Mississauga Aerospace Company Profiles

1. Mississauga's Top 25 Aerospace Manufacturing Companies by Employment

Aviation Representatives Inc.

AvWind International Aviation Rewind & Support

B & R Machine Co. Ltd

Bodycote Ortech Inc.

CANCOM Canadian Satellite

Communications Inc./Star Choice

Carleton Life Support Technologies Ltd.

Curtiss-Wright Controls (Indal Technologies Inc.)

Cyclone Manufacturing Inc.

Exactatherm Ltd.

Execaire

Field Aviation Company Inc.

General Electric Canada

Henkel Loctite Canada Inc.

Honeywell

L-3 Communications Spar Aerospace Ltd.

Leavens Aviation Inc.

Luxell Technologies Inc.

Magellan Aerospace Corp. (Orenda)

Magnifoam Technology International Inc.

(MTI Global)

Pratt & Whitney Canada Inc.

Quality Systems Design and Manufacturing

Samuel Son & Co., Ltd.

Technisonic Industries LTD.

Tube-Fab Ltd.

Wright International Aircraft Maintenance,

Services Inc. Training Centre

2. Mississauga Aerospace Company Profiles

The following pages feature company profiles from some of the many successful Aerospace companies in Mississauga.



L-3 Communications - CMRO

L-3 Communications - CMRO is a global third party component maintenance, repair, overhaul and upgrade organization. For over 40 years L-3 - CMRO has been supporting military and commercial operators by continually delivering value in all that we do.

L-3 - CMRO services a variety of products including electrical, mechanical & hydraulic components, actuators & servos, generators & power system components, helicopter dynamic components, avionics & instrumentation, and ground support equipment such as aircraft hydraulic test stands and ground power units, mobile generator sets, and breathing air compressors.

In addition to supporting on-vehicle components, L-3 - CMRO also designs, manufactures, and provides the after sale support of ground support equipment.

From standard repairs to specialized engineering, aimed at improving performance and increasing reliability, L-3 CMRO has the expertise to continually deliver value. In the air, on land and at sea, L-3 - CMRO continually delivers value to the world's militaries and commercial operators.

www.l-3com.com

LUXELL

Luxell Technologies Inc.

Incorporated in 1994, and public since 1996, Luxell is known for its skills and ingenuity in developing and enhancing flat panel display technologies and providing customized display system solutions to meet the needs of its global client base through its two operating divisions Luxell Research and Aktelux. Luxell Technologies is headquartered in Mississauga, Ontario, Canada where it maintains a state of the art 49,000 square foot office, R&D and manufacturing facility.

Aktelux Corp, a division of Luxell Technologies Inc., designs, manufactures and markets ruggedized, high-performance flat panel displays systems for challenging defence and aerospace applications.

Aktelux's customers include industry leaders such as Lockheed Martin, BAE, Selex, Raytheon, Indra, Oerlikon Contraves, Rheinmetall and Mitsubishi Precision, proving Aktelux's display products are reliable under the most demanding operational requirements.

These high performance displays are designed for avionics and defense applications including tactical displays, radar warning devices, navigational displays, flight management and instrumentation systems as well as displays for global positioning systems, field communications systems and ruggedized computer laptop units.

Luxell Research is focused on the research, development and commercial licensing of enabling electroluminescent flat panel display technologies. Luxell Research has developed an extensive intellectual property (IP) portfolio, the core of which is an optical interference based display contrast enhancement technology. The background IP was acquired in the form of a worldwide exclusive licence for commercialization from the National Research Council of Canada in 1992. In recent years Luxell Research has focused its efforts on the development of foreground IP that has been optimized for emerging flat panel display technologies, and the conversion of this IP into commercially viable processes and techniques that its clients can readily apply to their products and services.

Located in Mississauga, Ontario, Luxell is able to capitalize on the many benefits the city has to offer. The close proximity of three major highways and the Toronto airport allows easy access to visiting clients. The number of qualified suppliers to the aerospace industry located in Mississauga allows for the quick delivery of parts and re- enforces strong business relationships.

www.luxell.com



Magellan Aerospace Corporation:

The Magellan Aerospace Corporation corporate headquarters are located on Derry Road in Mississauga. This Magellan location houses what was known locally as the Orenda Aerospace plant where the Iroquois engines for the AVRO Arrow aircraft were built in the mid 1950s. Since the time of the Arrow, Orenda has developed into a world-class component manufacturer and maintenance provider for gas turbine engine applications for commercial, military and industrial customers worldwide.

Our manufacturing facilities make highly complex machined and fabricated parts for a range of gas turbine engines for Original Equipment Manufacturers such as General Electric, Rolls-Royce, United Technologies Pratt and Whitney, Honeywell, Volvo, MTU and the United States Government. Orenda is involved in some of the latest engine programs including the GE F414 and the Lightning II Joint Strike Fighter engines, the P&W F135 and GE/R-R F136.

The manufacturing operations utilize some of the latest machining technologies and processes and are approved to the highest industry standards of quality. More than 80% of the manufactured product is exported throughout the world benefiting the national economy. The component manufacturing programs at Orenda employ approximately 175 professionals and highly skilled operatives who receive continuous training in Lean Manufacturing, Six Sigma and 5S methodologies.

The maintenance programs at Magellan Mississauga service turbine engines for military and industrial customers in Canada, the USA and worldwide. Major military programs Service the engines from F 18 aircraft in the Canadian and US Navy fleets and F5 engines for the USAF and other countries that use the aircraft. The Canadian Air Force Snowbirds use the same engine as the F5, the Snowbird engines have been maintained by Magellan since the beginning of the program in 1964.

The Industrial program is based on the 'Orenda' series of engines that were the predecessor to the Iroquois. The 'Orenda' engines originally flew in the F 86 Sabre jet and today derivatives of those engines have applications in power generation and gas compression around the world. Combining this experience and technology from high performance military turbines, we have developed industrial gas turbine technology to meet the challenges of alternative fuels and renewable energy applications. The maintenance programs at Magellan employ 225 professional and highly skilled people.

The total workforce at Magellan Mississauga varies between 450 and 500 people depending on the status of the various programs as they progress through development and into full-scale production.

The original Orenda Aerospace Corporation was acquired in 1996 and formed the basis of Magellan Aerospace Corporation, a Canadian corporation which today operates numerous business units located in Canada, the USA and the United Kingdom, and is recognized by its customers as a leader in its chosen field.

www.magellanaerospace.com

APPENDIX C

North American
Industrial Classification
System (NAICS) and
the Standard Industrial
Classification (SIC)

The Mississauga aerospace sector utilizes the definition of industry terms based on the North American Industrial Classification Systems (NAICS). The aerospace sector is organized under the following categories: aerospace manufacturers, airlines, and airport and related services.

CLASSIFICATION

2005 & 2000 DATA IS BASED ON

NAICS 1997

1995 DATA IS BASED ON SIC 1980

AEROSPACE MANUFACTURERS

Aerospace Product & Parts Manufacturing:

3364 — This industry comprises establishments primarily engaged in manufacturing aircraft, missiles, space vehicles and their engines, propulsion units, auxiliary equipment, and parts thereof. The development and production of prototypes is classified in this industry, as is the factory overhaul and conversion of aircraft and propulsion systems.

E321 - Aircraft and Aircraft Parts Industry

AIRLINES

Air Transportation:

481 — This sub sector comprises establishments primarily engaged in forhire, common-carrier transportation of people and/or goods using aircraft, such as airplanes and helicopters. **G451- Air Transport Industries**

CLASSIFICATION (continued)

2005 & 2000 DATA IS BASED ON NAICS 1997

1995 DATA IS BASED ON SIC 1980

AEROSPACE MANUFACTURERS

Other Airport Operations:

48819 — This industry comprises establishments, not classified to any other industry, primarily engaged in providing specialized services to the air transport industry. Some important activities are servicing aircraft, repairing and maintaining aircraft (except on a factory basis), and inspecting and testing aircraft.

G4523 - Aircraft Servicing Industry

AIRPORT AND RELATED SERVICES Airport Operations:

48811 — This industry comprises establishments primarily engaged in operating international, national and other civil airports. The activities involved in operating airports include renting hangar space, and providing air traffic control services, baggage handling, cargo handling and aircraft parking services.

G4521- Airport Operations Industry

G4529- Other Service Industries **Incidental to Air Transport**



The data analysis conducted within aerospace was performed on data derived from the Mississauga Employment Databases for the years 1995, 2000 and 2005.

Mississauga Employment (ME) Database

The ME Database is owned and maintained by the Economic Development Office and the Planning and Building Department of the City of Mississauga. The ME Database accounts for all industrial, commercial, office and retail establishments within the City of Mississauga. Home based businesses are not accounted for within this database.

Location Quotient (LQ)

The LQ analysis helps determine the relative concentration of the sector studied in the local economy, in relation to the broader geographic economy. A LQ greater than one indicates that the local sector is stronger. A location quotient of less than one indicates that the broader geographic economy has a stronger sector.

The formula for computing a location quotient is as follows:

LQ = (ei/e)/(Ei/E)

where:

ei = Local employment in industry

e = Total local employment

Ei = Employment in industry, in the broader geographic economy

E = Total employment in the broader geographic economy

The LQ analysis reported on within the aerospace study was performed based on the geography of the City of Mississauga in relation to Canada only.

Gross Domestic Product (GDP)

This study reports on GDP data for the City of Mississauga and Mississauga's aerospace sector. The GDP analysis reported within this study is extrapolated and based on Statistics Canada reports of GDP figures, which are reported at the country (Canada) and at the provincial (Ontario) levels.

The formula used for computing a GDP is given below:

GDPL = (GDPC/EC) * EL

where:

GDPL = Local GDP

EL = Local employment

GDPC = Country/Provincial GDP as reported by Statistics Canada

EC= Country/Provincial Employment as reported by Statistics Canada



Population

- Population: 704,000
- Growing by 10,000 each year
- Canada's 6th largest city

Labour

- Employees in Mississauga: 440,000
- Access to 3.1 million employees in the Greater Toronto Area
- Over 82% of resident labour force with some post-secondary education

Businesses

- More than 52,000 registered businesses
- More than 1,500 multinational corporations
- 56 Fortune 500 corporations operate their Canadian head offices here

Low Costs: Taxes, Services & Utilities

- Property taxes are among the lowest in the province
- Electric power rates are among the lowest in the Greater Toronto Area (GTA)
- Natural gas is readily available at low prices

Land & Buildings

- Competitive lease rates and land prices
- Largest supply of modern high quality, industrial land and buildings in the GTA
- Close to 3,000 acres of land available for business development
- 50 high quality, private sector business parks

Transportation

- Home to Toronto Pearson International Airport, the largest and busiest airport in Canada
- Served by 2 national railways: Canadian National (CN) and Canadian Pacific (CP) Rail
- Serviced by 7 major highways
- An accessible, easy and efficient public transportation system
- Mississauga has direct access to all lake ports and to the Atlantic Ocean via the St. Lawrence Seaway

For More Information, Please Contact:

Economic Development Office
City of Mississauga
300 City Centre Drive
Mississauga, Ontario, Canada
L58 3C1
905.896.5016
1.800.456.2181



Technology

- Mississauga's fibre optic and communications infrastructure is one of the best in North America
- A major centre for successful technology-based companies

Higher Education

- The University of Toronto, Mississauga part of Canada's largest university
- The Richard Ivey School of Business state-of-the-art executive development facility
- 10 major universities and 11 technical colleges within commuting distance

Police, Fire & Emergency Services

- Mississauga is the safest city in Canada according to a 2005 independent national study
- Mississauga is protected by the Peel Regional Police which provides one police officer per 633 residents
- The City has professional fire services with one firefighter per 1,100 residents, a statistic that is above the national average

Healthcare

- The provincial health insurance program covers major medical and hospital bills for all Canadian residents
- Mississauga's two modern community hospitals, the Credit Valley
 Hospital and the Trillium Health Centre, house approximately
 1,000 beds providing excellent health care by combining the latest
 in technology with the utmost in professional, compassionate care

Housing Options

- Mississauga offers a diverse housing mix from townhouses, high-rise condominiums and rental facilities to semi-detached, fully-detached and executive housing to satisfy every income level
- Average housing prices in Mississauga are lower than the average for the GTA

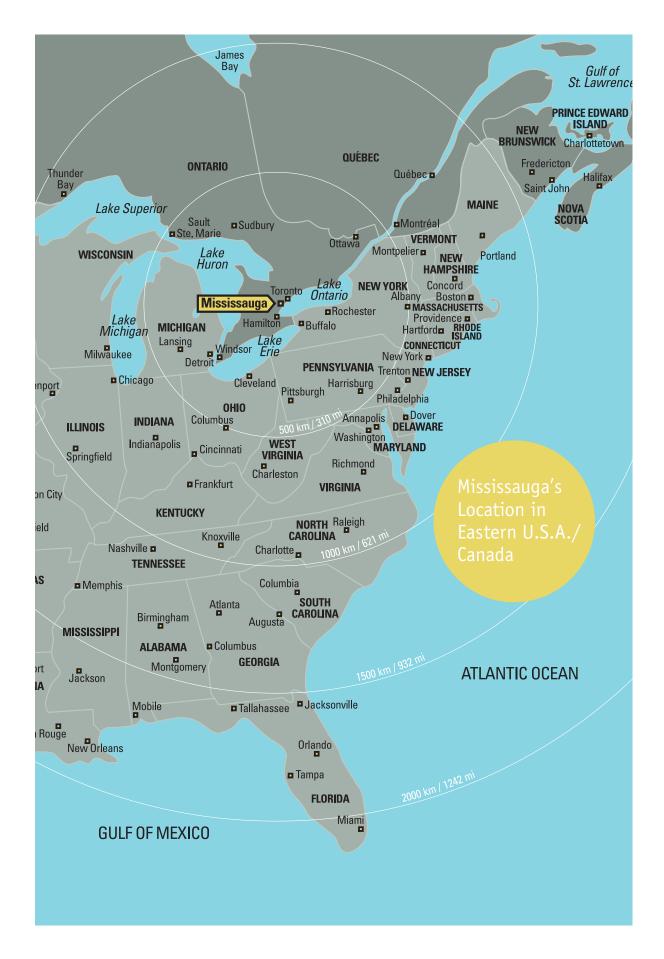
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