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MANITOBA



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Where Vision Takes Flight



MANITOBA AEROSPACE WEEK • JUNE 6-10, 2011

Sky's the limit for local aerospace industry

By Peter Carlyle-Gordge – *For the Free Press*

The flight plans for Manitoba's aerospace industry have never looked better as the industry takes on more workers and contracts, making it one of the high flyers in the province's industrial base.

The aerospace industry — which directly employs 5,300 people in Manitoba and many more thousands indirectly — is worth \$24 billion annually and employs 80,000 in Canada.

Manitoba is the third largest aerospace cluster in Canada in terms of output, and includes major players such as Boeing Winnipeg, StandardAero, Bristol Aerospace (a division of Magellan Aerospace) and Aveos, which used to be known as the Air Canada Technical Services.

In addition, the local industry, which began about a century ago supporting some of the earliest flying in Canada, also includes many small-to-medium sized aerospace suppliers of aerospace products and services. They include precision machine shops, metal fabricators, plating operations, composites manufacturing and repair companies, testing and certification companies, and engine, propeller and airframe repair companies.

Specialty manufacturing ranges from micro-autopilots for unmanned vehicle systems, to rubber polymer seals for aircraft fuel systems and aircraft window seals.

Manitoba's aerospace industry really began with the creation in Winnipeg of the Aero Club of Canada on March 31, 1909 with a mandate "to assist and promote practical aeronautics by encouraging Canadian inventors". Its aim was to enable aeronautical research, support individual projects and provide communication with other scientific associations worldwide.

In the ensuing century, Manitoba aerospace companies have been inventing, building and repairing aerospace products and growing impressively into an internationally recognized cluster of world-class companies.

One of the first aircraft prototypes designed and built in Canada was accomplished by one of the founding members of the Aero Club of Canada in Winnipeg who designed and constructed the "Aero Car Canada". This plane was publicly displayed but didn't fly. It was with the arrival of Eugene Burton Ely, a demonstration pilot for Curtiss Aircraft, that the first powered flight in Manitoba was recorded on July 15, 1910.

Today, the aerospace industry has evolved to be a major employer with healthy order books. The local aerospace sector offers potential for significant growth because the world's aerospace fleets are growing old and are being upgraded to be greener and lighter, which essentially means more fuel-efficient. Estimates indicate that the worldwide commercial aircraft market over the next 20 years is in the order of 30,000 aircraft, generating a \$3.3 trillion market.

Vic Gerden, executive director of the Manitoba Aerospace Association, says the outlook is bright for the industry, thanks to the sterling reputations and growth of the major players here. StandardAero has been around for a century, Boeing is celebrating its 40th year in Winnipeg, and Bristol Aerospace (Magellan) has been here since 1930, so the province has a strong aerospace track record.

"We've built up a lot of experience over the years and that, together with a willingness to change with the times to stay competitive, promises a bright future," he says. "Our companies continue to change and re-invent themselves to meet the high demands of global competition.

In fact, 85 per cent of our products and services are exported and we continue to compete very favourably with the best in the world."

Gerden says Winnipeg is now home to the largest cluster of composite materials manufacturing, repair and research in Canada. Composites are now one of the main materials used in aircraft manufacturing, and Winnipeg-based Composites Innovation Centre (CIC) is known as a centre of excellence for advanced composites research, commercialization and manufacturing. Its work has also extended to other sectors beyond the aerospace industry.

The CIC supports research, education and training in the field of advanced composite materials, with applications for aerospace and other industries. The CIC provides access to composites expertise and advanced research tools, including highly sophisticated testing equipment. The CIC is also leading a major research and development initiative called the Canadian Composites Manufacturing Research & Development Consortium which involves international partners wanting to improve composites materials, manufacturing and repair processes.

Continued on Page 12



Vic Gerden (right), Executive Director of the Manitoba Aerospace Association, and Vince Martin, President, Cormer Aerospace, discuss the capabilities of the MAG 3 high-speed 5-axis machine at Cormer which is the latest technology in precision machining. This machine is one of few in Canada and runs 'lights-out' with its large 10-place automatic pallet system. They are examining one of the 787 monolithic engine parts that this machine produces.

Did You Know?

- Manitoba Aerospace is the third largest Canadian aerospace hub, and is the largest in Western Canada. It includes:
- Boeing Operations Winnipeg — Canada's largest manufacturer of aircraft components made of composite materials;
- StandardAero — The world's largest independently owned company for the repair and overhaul of turbine engines;
- Magellan (Bristol) Aerospace — Canada's only solid rocket propellant manufacturing plant. Bristol produces scientific rockets, satellites as well as a diverse range of commercial and military aircraft components made of advanced materials.
- Aveos Fleet Performance — which performs aircraft maintenance for various models of Boeing and Embraer commercial aircraft; and
- Many other small and medium-sized enterprises (SMEs) sell a host of niche aerospace products and services to international markets on six continents.

MANITOBA AEROSPACE WEEK • JUNE 6-10, 2011

Message from the President

The Manitoba aerospace industry continues to grow and support great jobs for Manitobans. The diversity of the local aerospace industry is impressive. The range includes manufacturing, maintenance and repair, flight and technical training, testing and certification services, providing many opportunities for interesting careers.

More than 5,300 persons are directly employed in our Manitoba Aerospace Association member companies, creating about \$1.6 billion in products and services annually.

Our talented professionals produce components for the most advanced aircraft, satellites and unmanned aerial vehicles, and due to our tremendous track record in the industry, Manitoba is widely respected as a centre of excellence for composite materials research, manufacturing and the development of repair techniques and for the repair and environmental testing of aircraft



PHOTO BY WINNIPEG FREE PRESS

engines and components.

The industry is led by four world-class firms — Boeing Canada Operations, StandardAero, Magellan Aerospace Limited - Winnipeg (Bristol Aerospace), and Aveos Fleet Performance Inc. These companies supply leading edge products and services to customers around the world, and are supported by more than 24 smaller and medium-sized companies that provide a variety of specialized products and services.

Manitoba has built a very sophisticated training infrastructure that is unparalleled in Canada. Federal and provincial governments, educational partners and industry have invested collabora-

tively and successfully in aerospace training in Manitoba. The results have been remarkable, with more than 1,100 courses completed and more than 70,000 people trained. An exciting new 'Competitive Edge' program is being developed to help companies become more productive and competitive to help our industry grow.

If you're looking for an interesting, challenging, well-paying career, the aerospace industry could be the answer you're seeking. Our state-of-the-art aerospace industry is the largest in Western Canada, and employment opportunities are expected to continue to increase for the foreseeable future. As the industry grows, so does the demand for skilled workers and design engineers.

There are a wide variety of careers available in aerospace, including various engineers, mechanical engineering technologists, test program specialists, automated machine operators, welders, composite fabricators and project managers plus many more.

Anyone interested in a career in aerospace has a number of online resources to choose from. Manitoba Aerospace has a terrific website that details the different career opportunities that exist in the aerospace field, along with the associated requirements: <http://www.manitoba-aerospace.mb.ca/careers/index.html>. The Aerospace industry information on the Manitoba government website is also helpful: <http://www.gov.mb.ca/ctt/profiles/aerospace/index.html>. If there is a particular company you'd love to work for, don't hesitate to contact them directly to discuss career opportunities.

Boeing Career Opportunities:

<http://www.boeing.ca/ViewContent.do?id=21922&aContent=Jobs@Boeing%20Winnipeg>

StandardAero Career Opportunities: <http://www.standardaero.com/jobs/default.aspx>

Magellan (Bristol) Aerospace Career Opportunities: <http://www.bristol.ca/hr.html>

The Manitoba aerospace industry truly offers variety and includes smaller companies listed elsewhere in this publication. So when it comes time to find the career of your dreams, don't forget to look us up!

Paul Heide,
President, Manitoba Aerospace Association

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MANITOBA AEROSPACE

Where Vision Takes Flight

University engineers take back seat to none

By Peter Carlyle-Gordge – *For the Free Press*



**Professor and
Associate Dean of
Design Education
Ron Britton**

Professor Malcolm Symonds, Engineer-in-Residence at the University of Manitoba, says the caliber of his students in engineering programs is second to none and the majority end up in well-paying, exciting jobs, thanks partly to the thriving local aerospace industry, which is constantly recruiting.

Whether it be designing and building cars, airplanes, satellites or robots, he says Manitoba students consistently win, or rank highly, in international competitions designed to find the brightest, brainiest and most practical students.

One of his main frustrations is the need to get the word out that Manitoba has some of the most advanced and exciting aerospace employers, offering practical challenges in a very high-tech, state-of-the-art industry setting.

As many engineers retire and as the industry expands, there is a constant need for restocking with the best and brightest people.

"Young people are tech savvy and very computer literate thanks to PlayStation and similar games, and early exposure to the digital world, but we need to marry that knowledge to practical applications and careers," Symonds says. "They may be comfortable on a computer but not know about practical applications. We

have to show them there are exciting opportunities in Manitoba to use their skills in a very practical way. The aerospace industry offers attractive careers where they can do that."

Symonds says Manitoba companies such as Boeing Winnipeg, Magellan (Bristol) Aerospace, Aveos and Standard Aero are at the cutting edge of aerospace innovation, with Boeing designing parts for the new 787 Dream liner, while Bristol is

are working very closely with local aerospace industry leaders, and have a good chance of winning. That would mean their satellite experiments actually gets launched, complete with scientific experiments aboard.

The close cooperation with local aerospace companies means bright students get summer jobs working with them, and they have a good chance not only of being hired when they graduate, but in some cases those companies help them with tuition fees and further training.

"Manitoba offers a lot of opportunities, and while engineering students in the U.S. or Europe may be begging for jobs, ours tend to get employment fairly quickly," he adds.

That Professor and Associate Dean of Design Education Ron Britton, who say Manitoba graduates, share upbeat view can find jobs here using cutting-edge design and technology not available in other markets.

"Because of our close contacts with industry leaders such as Boeing, Standard Aero and

Magellan (Bristol) Aerospace, we are able to offer students wonderful opportunities," he says. "Our students have their own branch of the SAE International, and with over 100 members it's the fifth largest branch in the world."

Manitoba aerospace companies are strong supporters of its activities, which include international competitions.

Getting an engineering degree takes between four and five years of work. Britton says the programs offered at University of Manitoba prepare students for a variety of careers in aerospace and many other fields. About 200 students a year graduate.

"After the third year, major employers such as Bristol Aerospace will offer summer placement jobs to our brightest students and they may offer them a job once they've had a chance to see how they work and fit in," he says. "They cultivate promising students and generally get the people they want, so it's a win-win situation."



The best and the brightest engineering graduates from the University of Manitoba can look forward to well-paying, exciting jobs, thanks partly to the thriving local aerospace industry, which is constantly recruiting.

working on many projects, including the new F-35 fighter planes, as well as satellites and scientific rockets for NASA.

"We have bright people here and very good engineering programs," he says. "Students here have designed and built both cars and aircraft in various international competitions. One of the aircraft competitions involved students from the U.S., Asia and Europe, and we came ninth out of 47 teams."

He says the same Manitoba team achieved first place in their technical presentation to the judges.

University of Manitoba students are involved with designing and building racing cars and a hybrid formula car, as well as a Baja, or off-road vehicles. These competitions are arranged by SAE International, which covers many industries, including aerospace.

He also points out that local students are also entered in a competition to build a small satellite,

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Aboriginals in high demand as industry looks for next generation of skilled workers

By Holli Moncrieff – *For the Free Press*

One of the biggest challenges faced by the local aerospace industry is finding enough skilled employees to handle the ever-growing workload.

Neeginan's Aboriginal Aerospace Initiative (AAI) was designed to help Aboriginal people get the skills for careers in this fast-paced, dynamic industry.

"The key driver for the program was StandardAero's need for a significant number of gas turbine technicians," explains Wendell Wiebe, executive director of the Manitoba Aerospace Human Resources Council. "The Aboriginal community is the largest growing segment of our population. They are a pool of workers we want to attract to work in the aerospace industry."

The Manitoba Aerospace Human Resources Council created a partnership with the Centre for Aboriginal Human Resource Development and three industry partners — Boeing Canada Operations Ltd., StandardAero, and Bristol Aerospace Ltd. (a division of Magellan Aerospace — to support participants throughout their transition to

permanent employment.

"The program is designed to train Aboriginal people for the aerospace industry — the industry committed 200 spaces (jobs) for graduates of the program," says Ray Starr, executive director of the ASEP program. "Just over the last year, we've placed about 24 trainees in permanent positions in the industry."

The program is helping create employment opportunities for Aboriginal people by providing valuable skill development, on-the-job work experience, and long-term employment opportunities in the aerospace industry.

"It's very interesting work, and a very good career opportunity," Starr says. "The federal government has a goal of increasing Aboriginal participation in the workforce. There's an increasing amount of aerospace work in Manitoba, and great opportunities to fill those jobs."

Participants in the AAI program can choose between a 14-month gas turbine repair and overhaul

program, or a 12-month Level 1 machinist apprenticeship program.

One of the biggest challenges to AAI's success is figuring out how to spread the word about the program so more people will enrol, says Wiebe.

"One of the challenges is finding enough students who are ready to take the program. The classes haven't been filled yet," he adds. "Still, so far it's been very successful."

A contributing factor is that First Nations people may not typically consider the aerospace industry an option when looking for work, Starr explains.

"This is a new program, which is just getting to be known by the Aboriginal community," he says, adding that the program is being promoted by advertising in local papers, at various First Nations communities, job fairs, Aboriginal events and career fairs.

Officially launched by the Federal Government in 2003 as an \$85-million, five-year labour market initiative, the Aboriginal Skills & Employment Partnership (ASEP) was designed to maximize

training and job opportunities in major economic development projects across Canada, and provide lasting benefits for Aboriginal communities, families and individuals. ASEP meets employers' needs and labour market demands for skilled workers in a cross-section of large-scale industrial sectors, including aerospace.

In 2007, the Government of Canada invested an additional \$105 million in the ASEP program. Canada's Economic Action Plan 2009 was committed to enhancing the availability of training by investing an additional \$100 million over three years in the ASEP program.

For more information about the AAI program, please see their website at <http://aboriginalaerospace.com/about.html>



Wendell Wiebe,
executive director
of the Manitoba
Aerospace Human
Resources Council.

Anyone for space camp?

By Peter Carlyle-Gordge – *For the Free Press*

Students in Grades 9 to 12 who fancy that they might enjoy a career involving satellites, rockets, airplanes — or even a career as an astronaut — will get a chance to attend a Space Camp held at the University of Manitoba on July 17-24.

Dr. Witold Kinsner, one of the organizers, says the aim is to introduce students to a wide variety of aerospace and space related subjects and to encourage them to consider careers in science and engineering.

Students get to talk with professors and industry experts and they'll be given workshops covering high powered rocketry, robotics, living and working in space, amateur radio, rocket-building, GPS tracking, biomedical engineering, unmanned racing cars, the Hubble Telescope, zero gravity and much more.

They also get to talk to Canadian astronaut Chris Hadfield.



**Canadian Astronaut
Chris Hadfield**

Kinsner says they get a chance to build and launch a rocket at La Barriere Park. They will also build miniature robots which they get to take home. There will also be a balloon launching at Bird's Hill Park.

"It's a very hands-on program and they learn about challenging problems and how to solve them," says Kinsner. "Besides the exciting engineering aspects, they also learn about space law, such as what happens if your satellite collides with another satellite already in orbit. We consult with lawyers, the military and major aerospace companies when we design the program."

Three camps have been held in the past and last year 35 students attended.

Any Grade 9 to 12 student interested can contact Kinsner at 474-6490. Or download the brochure: <http://www.wiseworkshops.ca/>

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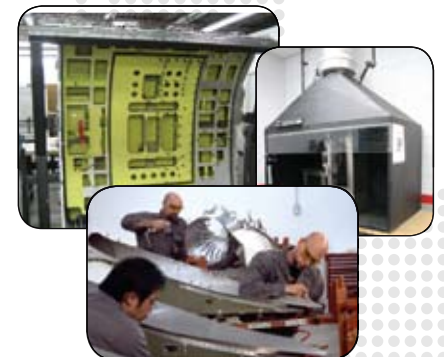


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Magellan Aerospace part of world-wide effort to build F-35 jets

Magellan Aerospace is changing the landscape of aerospace manufacturing in Winnipeg, as they prepare to build various complex assemblies for the new F-35 Lightning II Joint Strike Fighter (JSF) jet, as part of an international consortium working on the airplane.

Being part of the JSF program means Magellan's employees are implementing new technologies while they are perfecting their technique to produce the horizontal tail and other composite assemblies, as well as the engine vane box and transition duct for the airplane model that can perform vertical landings.

"Joint Strike Fighter" refers to the three elements of the military that will fly the aircraft in the United States: the Air Force, the Marines and the Navy," says Scott McCrady, corporate director of the Joint Strike Fighter program at Magellan. "The concept is to generate a common set of specifications based on the requirements of the three forces, and develop an airplane using a common platform, while maintaining the unique

aspects of each operational requirement, such as flying off aircraft carriers or performing vertical landings like a helicopter."

The Lockheed Martin F-35 Lightning II is a single-seat, single-engine, fifth generation fighter with stealth capability. It is being built in three models: the conventional model; a short take-off and vertical-landing model; and a model intended for use onboard aircraft carriers. Its construction includes leading edge materials, providing a low-maintenance stealth technology aircraft. Composites are used in many places, with approximately 40 per cent of the aircraft's structure by weight made from this high strength material.

According to Lockheed Martin, the F-35 will be four times more effective than legacy fighters in air-to-air combat, eight times more effective in air-to-ground combat, and three times more effective in reconnaissance and suppression of air defenses — while having better range and requiring less logistics support.

Magellan is producing a number of components for the F-35 program. The horizontal tail is largest and most complex. Magellan is responsible for the manufacturing of all the internal structure and the skin. The horizontal tail incorporates aluminum and titanium, but the majority of it is made out of composite materials.

"Composites add to the complexity of manufacturing components, and the stealth characteristics of the aircraft depend, to some extent, on how smoothly all the parts fit together. The parts need to fit together with a minimum gap or step, to produce a smooth surface to meet design specifications of the aircraft," says McCrady.

Magellan is constructing a new 134,000-square-foot building at its Berry Street location near the James Richardson Airport. This building will be environmentally-controlled, something that is needed when working with composites and assemblies made up of several different material types such as aluminum, titanium and composites. The building will house a

number of large machines used in the manufacture of the F-35 parts, as well as a laser non-destructive inspection (NDI) machine, which is used to scan the parts to detect irregularities within the composite parts, should they exist.

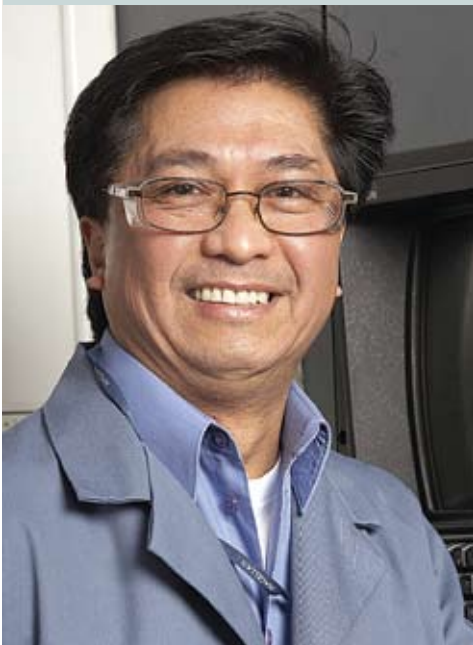
"Traditional methods of ultrasonic NDI use water as part of the process to inspect the parts," says McCrady. "The laser NDI is five times more efficient, and it's a much cleaner process."

Composite work involves laying sheets of woven material over mandrels, which are molds of the intended final shape of any particular part of the horizontal tail. The material is impregnated with resins and when heated and cooled, they maintain the form of the mold tool.

One feature of composites is that they can be layered, with the fibres in each layer running in different directions. This allows materials engineers to design structures that behave in certain ways. For instance, they can design a structure that will bend in one direction, but

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Magellan Aerospace's Bristol operating division applies innovative thinking and efficient processes to provide the global aerospace market a range of complex designed and manufactured products. For more than 80 years this Magellan facility has been a proud part of the Manitoba aerospace community, exporting products to countries around the world for use in aircraft, aeroengines, satellites and space payloads, and rocketry.

"Aerospace is a dynamic and innovation-driven industry," says Don Boitson, Vice President and General Manager, and we are committed to investing in new technology and intellectual-capital to keep our business on the forefront. A current example of this is the advanced composites assemblies that we are

producing for the F-35 Lightning II aircraft. These assemblies will be produced in a new 135,000 square foot expansion that will establish next-generation composite and machining capabilities, integral to our future growth."

Manitoba's aerospace industry is one of the fastest growing aerospace hubs in Canada, producing and selling products and services to customers on six continents, worth in excess of \$1.6 billion and Magellan Aerospace is proud to be a part of that. Magellan is a leader in global supply chain development, managing the connection between customers and the emerging supply base to provide competitive, flexible business solutions. Magellan has developed strategic relationships around the world and

is stronger and more effective from the collaborations.

"Aerospace is a large sector," Mr. Boitson says, "with predicted growth over the next decade, particularly in the commercial subsector. We need highly-skilled individuals to fill these challenging and long-term positions, and are excited about the career opportunities in our industry."

Magellan's Winnipeg facility is an 835,000 square foot plant where 700 skilled tradespersons and professionals are employed. The company has provided employment for generations of Manitobans since 1930 and continues to retain many long-term employees as well as hire new staff to their team. The company offers competitive salary and benefit packages as well as an

opportunity to build a solid career in the aerospace industry.

"We employ engineers, technologists, skilled tradespersons such as manufacturing and assembly technicians, and composite fabricators. We also offer career opportunities in program management, contract administration, quality assurance, manufacturing engineering, human resources, purchasing, IT, marketing, and finance."

Magellan's customers include General Electric, Rolls-Royce, Airbus, Boeing, Canadian Space Agency, MDA, Eurocopter, Bell, Sikorsky, Lockheed Martin, and BAES.

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not another.

Trevor Bartkiewicz and Shane O'Hara are among the 50-plus people working on the JSF project at Magellan.

Bartkiewicz is a process engineering specialist, working in the Process Engineering department. His job entails looking at the parts of the aircraft horizontal stabilizer that are produced on the shop floor, and checking how they fit to the specifications for each part. If the part is incorrect, he has to figure out how to help the operators refine the manufacturing process so that it does fit the specifications.

"Each part must meet strength requirements, and it has to be correct within a fraction of an inch of the specified size," says Bartkiewicz, who has been working at Magellan since graduating from the University of Manitoba in 2005. "I develop training programs for the operators who do the work, and then I work out how to standardize the process to ensure every part complies with the customers' requirements."

Magellan's staff has gone through a steep learning curve since the JSF project was started. Working with composites can be compared to making layer cakes from scratch, where minor



Shane O'Hara (left) and Trevor Bartkiewicz are among the 50-plus people working on the Joint Strike Fighter project at Magellan.

variations in the ingredients and the heat used to bake the cake can change the outcome of the finished product.

Composites are used in aircraft construction because they are lighter and less costly than aluminum, says O'Hara, who is a manufacturing engineering planner.

"They are light, but have great structural strength. We can control the stiffness and flex-

ibility by the way we stack the material, which has a warp and weave, just like cloth," says O'Hara, who joined Magellan in 2008, after working in the automotive industry in Ontario.

"My first exposure to composites was on the EH-101 helicopter at Magellan. I'm learning from the best. I really enjoy the work."

The USA will be buying more than 2,000 of the jet fighters. Other countries, including the

United Kingdom, Italy, Netherlands, Canada, Turkey, Australia, Norway and Denmark, are all contributing toward development cost. The total number of jets that will be produced for all of the countries is currently estimated to be 3,100. Canada will see the first jet around 2016.

Lockheed Martin is the main contractor and performs the final assembly of the airplanes. Magellan is producing horizontal stabilizers for BAE Systems, who are responsible for building the aft fuselage, horizontal and vertical tails, crew life support and escape systems. Magellan is also supplying parts directly to Lockheed Martin, in addition to various other companies on the F-35 program.

"This program has been running for about 15 years, with the first flight occurring in December 2006. Approximately 60 of the jets are now in various stages of production, and more than 20 are flying. The first production aircraft was delivered to the US Air Force on Monday, May 9, which is a big milestone," says McCrady. "At the moment, our production rates are roughly one to two deliveries per month. The program is expecting to produce up to 200 a year at peak production rates."

PHOTO BY DARCY FINLEY



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Bright future as Boeing Winnipeg celebrates 40th anniversary

By Peter Carlyle-Gordge – *For the Free Press*

What a difference four decades makes. Back in 1971 Winnipeg's population was considerably smaller, household computers, laptops and iPhones were unheard of — and James Richardson of Winnipeg was Liberal Defence Minister.

It was also a time when Air Canada was buying Boeing 747 aircraft and the Federal Government purchasing Boeing 707 aircraft for military use. In support of partnering with Canada, Boeing committed to open a new aircraft parts manufacturing plant in Winnipeg.

Boeing chose Winnipeg, since Manitoba had a good workforce, was centrally situated and had a strong aircraft manufacturing and maintenance tradition dating back to the 1930s, and even earlier.

The initial idea was for the new plant to manufacture wing fixed trailing edge panels for its 747 aircraft. So it was then Boeing of Canada opened its doors with just 50 employees in 1971.

Fast forward to 2011 and Boeing employs about 1,400 here and has expanded several times, growing from a 70,000 square-foot plant to occupying about 750,000 square feet in 3 buildings in the city.

Business Operations Director Rick Jensen says the work and work methods have also changed drastically.

"When we opened we were using fiberglass/epoxy resin materials, but today we are deeply into the use of advanced carbon fiber epoxy composite materials," he says. "The plant is much more advanced in its use of technology, and computers have also changed much of our work. The prospects for future work and growth are fantastic."

Jensen started at Boeing here in Winnipeg 39 years ago. He says in the past commercial airplanes were mostly made from metal with less than five per cent of the

body made of composites.

"Today, the new airplanes such as the Boeing 787 Dreamliner contain about 50 per cent composite materials, including the fuselage and wings," he says. "Because the Winnipeg operation specializes in composite manufacturing, we're well positioned to support new requirements. Our future looks very good."

Boeing Winnipeg is now Canada's lar-

more efficient engines, and use about 20 per cent less fuel than their forerunners.

Jensen says the company works closely with schools, universities and colleges to promote careers in the industry.

"Boeing offers well paid jobs and excellent benefits and our workforce operates in one of the cleanest, safest environments," he says. "People actually want to work here."

Jensen is looking forward to this year's

that the local Boeing plant has some design authority for the new Dreamliner.

The 787 is now undergoing flight tests prior to certification and Moss sees it providing many years of work for Winnipeg, noting that the 747 has been around for four decades and is still in production. Boeing is still also building the Boeing Next-Generation 737 and the 777, which came out in the 90s.

"The 787 is a long-term project and will be around for many years to come," Moss says. "We have already sold over 800 of them around the world. If you include production and support staff, some 200 workers at Boeing Winnipeg will be involved with the project."

He says a large part of the 787 will be made of carbon fibre composites, though there will still be some fiberglass used in panels.

When Moss first began work at Boeing, the plant's main business was developing fiberglass components, often using hand tools.

"Now we use new machines including laser alignment tools and computer design plays a large part," he says. "Our production processes have totally changed and everything is first designed on a computer rather than on paper."

The company is a strong believer in giving back to the community that adopted it.

Boeing's Global Corporate Citizenship program has poured hundreds of thousands of dollars into local community organizations, and it has supported many good causes promoting education, literacy, the environment, health and human services, and arts and culture. It has also supported many sports organizations, sponsoring the Blue Bombers, Manitoba Moose, Winnipeg Goldeyes and The Boeing Indoor Classic track event.

The Boeing 787 Dreamliner.



gest composite manufacturing facility and manufactures structural components for all current models of Boeing commercial aircraft, as well as having design authority for several components of the newest Boeing model — the 787 Dreamliner.

The airplane made its inaugural flight in December 2009.

It represents the leading edge of modern commercial aircraft which are constructed of a higher proportion of lighter composite materials. They are also powered by quieter,

40th anniversary celebrations. They will likely have a family-oriented theme, and that's fine with him, since he sees Boeing as one big family.

"I used to be in the ball-bearing business but when I saw that Boeing was coming to Winnipeg I just thought it was cool and decided to apply. Thirty nine years later, I'm still here and have no regrets."

Graeme Moss is Senior Manager of Boeing's local 787 program and has been with the company for 32 years. He's excited

MANITOBA AEROSPACE WEEK · JUNE 6-10, 2011

SOME FUN BOEING FACTS:

- A modern Boeing plane with 70 per cent of its seats occupied is more fuel efficient than a new car carrying two people.
- The air flowing through a 767-400ER engine at takeoff power could inflate a Goodyear Blimp in just seven seconds
- The Boeing 777 is the first ever jetliner to be 100 per cent digitally designed using 3-D solids technology. The plane is preassembled on a computer prior to manufacturing and no expensive fullscale mockup is needed.
- Customers can order over 6.5 million different types of spare parts on the website **MyBoeingFleet.com**. In a normal week it does over 130,000 parts transactions.
- In 1999 alone Boeing recycled enough aluminum to build 233 Boeing 747's and enough steel to make more than 58,000 midsize cars. It also recycled enough paper to save 25,000 pine trees.

You can find out more about the company at: **www.boeing.ca**



BOEING
CELEBRATING 40 YEARS!



Grounded chopper helps RRC students soar

The donation of a helicopter is helping aircraft mechanic students at Red River College's Stevenson Campus in Winnipeg really take flight.

Wayne Johnson of Black Swan Helicopters in Alberta has generously provided a Robinson R44 helicopter to help the RRC aviation program. It's a current production machine valued at \$119,000, which will be used as a technical training aid by aircraft mechanics students, effectively ending its flying days. However, its presence means graduates of the program will have a current helicopter to practice on, before applying for jobs with local companies which fly helicopters.

Additionally, an agreement has been forged with the Department of National Defence (DND) whereby military personnel are paid while they take training at Red River College. The Subsidized Education Program is also a means of recruiting people to the DND to work on aircraft, says Dennis Doersam, the director of RRC's Stevenson Aviation and Aerospace Centre on Saskatchewan Avenue.

Overall, enrolment is good at both the Winnipeg-based Stevenson Campus and its regional counterpart, the Stevenson Aviation and Aerospace Centre: Southport — near Portage la Prairie — says Don MacDonald, Dean of RRC's School of Transportation, Aviation and Manufacturing. Students are working in diploma programs at the Winnipeg location as well as a four-year apprenticeship program at Southport.

"There are plenty of local companies that are interested in hiring our graduates, be it working with composites at Bristol Aerospace or Boeing, or with gas turbines

at StandardAero, or with aircraft repair at AVEOS, or at one of the smaller aerospace companies," says MacDonald.

A number of local companies not only use Red River College to keep their employees and future employees current in technology, they also maintain training space on their properties. StandardAero supports a Red River College off-site campus adjoining a StandardAero facility where students learn new practical laser welding and other advanced repair techniques at the Centre for Aerospace Technology & Training. A second campus has just been opened at Bristol Aerospace for non-destructive testing work training, adds MacDonald.

"We have what we call 'model factories' on our own RRC campus, where students work on composites and also in a robotics lab. We try to stay as current as possible in the high-end, new technology," says MacDonald. "All our students find jobs at the end of their training. Aerospace in Manitoba is doing well —

so well in fact, that we have trouble hiring enough interns to do research projects."

The quality of Red River College's aviation programs is known not only in Canada, but also around the world, says Doersam. Close to 40 students from India are enrolled in studies at the Stevenson Cam-

pus, as part of an agreement with the Chandigarh Institute of Indian Studies. The students take a four-month aviation foundation program in India, and then come to Winnipeg for the two-year Aircraft Maintenance Engineer diploma program.

New national training and licensing standards for Aircraft Maintenance Engineers (AME) are guiding Red River College into new programming and training techniques. The courses are nationally accredited and certified (Transport Canada; Canadian Council for Aviation & Aerospace), ensuring recognition and portability throughout Canada for graduates. Their success can be measured by a graduate employment rate approaching 100 per cent.

"An AME will make a starting salary of up to \$52,000, which is great money," says Doersam. "We're seeing a lot of students enrolling who want to change careers. The aerospace and aviation industries are pretty

healthy in Manitoba. We've seen steady growth in the 10 years since the Stevenson Campus-Winnipeg opened."

For more information on the aviation programs offered at Red River College, see www.rrc.ca



PHOTOS BY DARCY FINLEY

Red River College students aren't able to fly in it, but they get hands-on experience working on a Robinson R44 donated to the school by Wayne Johnson of Black Swan Helicopters in Alberta. The chopper is used as a technical training aid by aircraft mechanics students.



MANITOBA AEROSPACE WEEK • JUNE 6-10, 2011

A century of service at StandardAero

By Mike Miguez – For the Free Press

William S. Bickell and Charles F. Pearce would be proud of how far their small automotive engine repair shop has come in a century.

Opened as the Standard Machine Works in 1911 in Winnipeg, StandardAero is celebrating its 100th anniversary this year.

"It's a huge achievement of a long-term legacy of several different companies celebrating a centennial of service to the aerospace industry," says Kyle Hultquist, vice-president of marketing and communications for StandardAero.

Today, StandardAero is one of the world's largest accessory repair and overhaul facility providers, offering a unique mix of management and MRO services to regional airlines and fleets, business aviation, helicopter, government/military, energy and industrial customers.

Those services include: engine maintenance, component repair and overhaul, turbine engine overhaul, interior and exterior design, exterior painting, airframe inspections and major alterations, avionics, mobile service teams, custom-designed and crafted interiors, component repair and field service to the power generating market, and engineering services.

StandardAero's over 3,900-plus worldwide employees, including 1,400 in Winnipeg, operate facilities in Canada, United States, Europe, Asia and Australia, while serving a customer base spanning six continents and over 80 countries.

Worldwide revenue is nearly \$1.4 billion (US).

John Ouendag joined StandardAero in 1961, a year after the company's second expansion.

He has been with the company for 50 years.

He lists the introduction of computer systems and the "World's Best" concept of changing and streamlining the production process and physical layout of the plants as major company changes over the years.

"This (World's Best) changed the way the company was organized and the overall appearance of the facilities which now includes wide open, visible and organized work areas," says Ouendag, currently a training and development specialist.

"The changes have improved the overall operation of the overhaul/repair processes, providing for improved work areas and access to the latest technology. The company's continual and aggressive outlook into future opportunities provides for an optimistic and secure atmosphere for both the company and the employees."

Customers and competitors view StandardAero as the operational leader among in-



Technicians at StandardAero work on a CFM56 engine at the company's repair and overhaul shop in Winnipeg. The CFM56 engine powers the 737 and other single-aisle airline planes, which account for a large bulk of passenger aircraft worldwide.

dependent maintenance, repair and overhaul (MRO), and aviation service businesses.

"Internally, we view ourselves as the proven leader in engine MRO and business transformational capabilities," Hultquist says.

Commitment to quality and work excellence is, and always has been, a major focus with StandardAero.

To maintain their lead in operational performance, StandardAero has expanded its toolkit of operational improvement methods and techniques.

Over the past few months, the Operations Excellence (Op Ex) organization, a functional focus within the supply chain, has been supporting critical business objectives by very effectively using Lean Six Sigma techniques.

Lean Six Sigma is a philosophy of leadership, teamwork and problem solving resulting in constant and continuous enterprise improvement.

Using these tools, the main objective of the Op Ex organization is to continuously reduce operational costs and waste while improving

quality and service goals.

Additionally, StandardAero has been expanding Engineering Services opportunities and looking for new ways to apply technologies for various engine test cell developments as well as engine predictive trend monitoring.

The company has taken steps to help carve out a new business sector and expand its portfolio of repair development by looking for new areas to extend its 'Components' repair expertise.

StandardAero has reached a number of program milestones, specifically in Winnipeg, with the development of new facilities and capabilities for repair and overhaul of CFM56 engines.

This is important work for future growth.

The CFM56 engine powers the 737 and other single-aisle airline planes, which account for a large bulk of passenger aircraft worldwide — ultimately driving the maintenance cycles for the engines.

StandardAero also recently received Transport Canada approval for CFM56 repair workscopes and field service.

The program continues to expand and the first few engines came into the Winnipeg plant this year.

So, what's on the drawing board for the next 100 years?

Celebrating the company's 100-year anniversary is at the top of the list.

"Already, this has been an exciting year for the company," Hultquist says.

"So far we're having a good year. We sense some stabilization and recovery in the aerospace industry."

Forming a dedicated 'Components' sector has been an exciting change.

Across the company, there are more than 16,000 unique repairs, with more being developed all the time. The 'Components' repair business continues to bring big opportunities.

Another highlight is the CFM56 'go-to market' plan, which will leverage the company's 10-year expertise of working on the General Electric CF34, to expand the repair and overhaul of CFM56 engines. Those engines are now flowing in and out of StandardAero's Winnipeg facilities and this new capability provides a huge growth opportunity.

Business Aviation is on the recovery path. And the Government and Military unit is doing very well.

"Safety continues to be our first priority and our safety management system is helping us achieve world-class performance," says Hultquist.

"We are optimistic about the future and we're seeing signs of recovery in many of the aerospace market segments."

MANITOBA AEROSPACE

Where Vision Takes Flight

LOCAL AEROSPACE INDUSTRY FLYING HIGH

Continued from Page 2

Founding Canadian member companies include: Boeing, Bell Helicopter and Avior Integrated Products in Quebec, Comtek Advanced Structures in Ontario, Convergent Manufacturing Technologies and Profile Composites in British Columbia, and Bristol Aerospace (a division of Magellan Aerospace Ltd.) and Cormer Aerospace in Manitoba.

A representative of Boeing Research & Technology, St. Louis, also sits on its board, and provides technical expertise and project guidance.

"We are on the leading edge of innovation in composites and it's important that we work with international partners such as Boeing and Bell Helicopters," Gerden says. "This kind of research positions us well for the future. At the same time, we are developing close links between companies and universities, colleges and schools."

Gerden says Winnipeg takes a back seat to no one when it comes to important aerospace work and innovation. Canada's largest composite manufacturing facility is Boeing Canada Operations in Winnipeg. Celebrating its 40th year here this year, Boeing manufac-

tures structural components for most models of Boeing commercial aircraft and has design authority for several components of the newest Boeing model, the B-787 Dreamliner.

He says Bristol Aerospace has been a major employer here over the past 80 years and has manufactured an astonishing variety of products for some of the world's largest aerospace manufacturers. It has also developed proprietary products such as the wire-strike system (20,000 copies are installed internationally on 70 helicopter model types), scientific rockets and satellites. Bristol will also be suppliers for the F-35 Joint Strike Fighter program, the world's largest military fighter aircraft program to date.

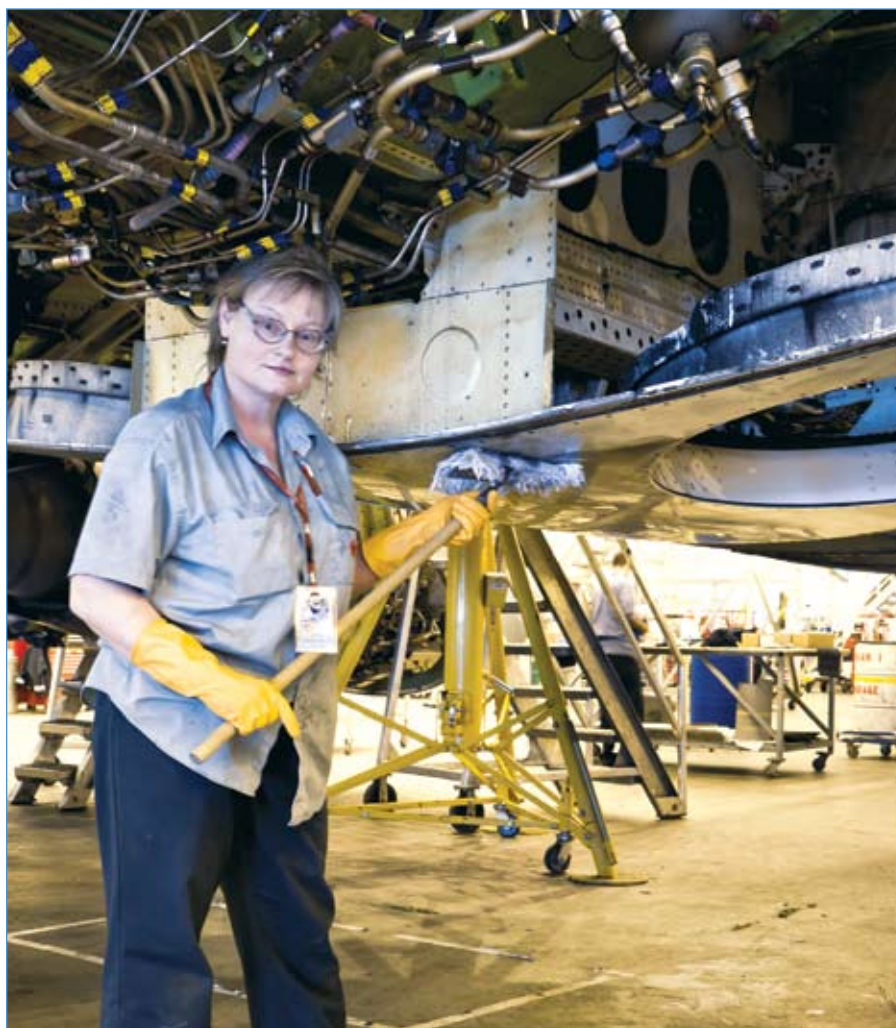
He notes that Bristol has also built the critical inner workings of three satellites for the Canadian Space Agency, helping Canada do important environmental research.

"These are exciting projects with the design and construction being done right here," he says. "That's why we are encouraging students to check out science and engineering careers because we have a constant need for talented people."

Meanwhile, Aveos, formerly the Air Canada overhaul facility, does complete airframe repair and overhauls on Airbus single-aisle and Embraer aircraft. This work is not just for Air Canada aircraft but also for several other airlines, including recent work on an Air France aircraft.

StandardAero is one of the largest aircraft engine maintenance, repair and overhaul companies in the world, bringing engines to Winnipeg from around the world for repair and refurbishing. The company has undergone several recent expansions to accommodate new contracts, such as the one to look after the repair and overhaul of the entire fleet of Westjet GE

"We are on the leading edge of innovation in composites and it's important that we're working with international partners such as Boeing and Bell Helicopters. This kind of research positions us well for the future. At the same time, we are developing close links between companies and universities, colleges and schools."



"These are exciting projects with the design and construction being done right here. That's why we are encouraging students to check out science and engineering careers because we have a constant need for talented people."

to Gerden. Standing still and resting on past laurels is not an option, and there are great rewards available for those willing and able to innovate and seize opportunities.

He says that also includes the smaller- and medium-sized companies, which often operate in specialized niche markets. One example is Canadian Propeller Ltd., which refurbishes propellers on many kinds of aircraft, includ-

ing turbo prop propellers. Another company, Argus Industries, focuses on rubber elastomeric products — seals for fuel tanks, windows and bulkheads.

Another company, Cormer Aerospace, provides sophisticated and automated precision machining services and has done work for both the Boeing 787 Dreamliner as well as the Airbus 350.

Other recent aerospace developments involve the creation of a new environmental testing and certification sub-sector in Thompson. The Global Aerospace Centre for Icing and Environmental Research (GLACIER), a joint venture between Rolls-Royce and Pratt & Whitney, was officially commissioned in October 2010. And currently, a new Certification Test Centre facility is being built just north of the Winnipeg airport. This is a joint venture between General Electric and StandardAero.

These are exciting developments that will put Manitoba at the forefront

of environmental testing of aircraft engines and have the finest facilities in the world for icing testing. These facilities will permit icing certification and cold-weather testing on the next generation of low emission, low noise aircraft engines. Advanced data acquisition and instrumentation will enable these facilities to exceed the most stringent global airworthiness standards and will also support advanced research and technology development.

In short, Manitoba and its high-tech aerospace companies are marching boldly into the future. That's hardly a surprise considering Winnipeg has always been a crossroads and transportation hub, perfectly placed at the heart of the continent.



The world's aviation industry is benefiting from the operation of a first class Global Aerospace Center for Icing and Environmental Research (GLACIER) in Thompson, Manitoba. MDS AeroTest is managing, operating and maintaining the GLACIER facility, providing employment opportunities for a variety of skill sets, including several disciplines in high-tech aviation.

To see a listing of positions available, or for details on the requirements of these opportunities, please visit our website

<http://mdsaerotest.ca>

Manitoba
Aerospace
Association

Golf Tournament

In Support of the
Aerospace
Student
Awards
Endowment
Fund



DATE: Thursday
September 15, 2011

PLACE: Bel Acres
Golf & Country Club

FORMAT:
Texas Scramble

TIME: 1:00pm
Shotgun Start

****Limited to the first 144
registered golfers with
accompanying payment.
Spots are allocated on a first-
come/first served basis.**

CONTACT: Brad Poleschuk Bel Acres Tournament Co-ordinator
(204) 632-8341 Ext. 1 or bradpro@belacres.com



**Are you interested in a career in Aerospace?
You are closer than you think!**

Through the Aboriginal Aerospace Initiative, the Neeginan Institute of Applied Technology in partnership with Manitoba Aerospace Human Resources Council, is accepting applications for training programs that can lead to entry level positions in the local Aerospace sector. Applicants will need a minimum of Grade 12 or equivalent as well as successfully complete a criminal record check.

We are currently recruiting for aircraft engine repair and machining programs.
Starting wages = \$14.00 to \$18.00 per hour.

Applicants must be of Aboriginal Ancestry (Status, Non-Status, Metis or Inuit)

For more information contact:

Joe Prest
Aerospace Liaison Officer
(204) 949-1493
(204) 998-2927 (cell)
jprest@abcentre.org

or register for an information session on:
Wednesdays at 10:00 am
Neeginan Institute of Applied Technology
316 - 181 Higgins Avenue
(204) 989-7110

(CAHRD)
Centre for Aboriginal
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PROVINCE OF MANITOBA

PROCLAMATION

AEROSPACE WEEK IN MANITOBA

- Whereas** the aerospace sector is a significant contributor to the economy of Manitoba, accounting for over 5,300 jobs; and
- Whereas** a vibrant aerospace sector makes Manitoba a better place to live, work and invest; and
- Whereas** export of aerospace products and services offers significant growth potential for Manitoba; and
- Whereas** the aerospace sector offers Manitobans, particularly our youth, highly skilled, satisfying careers with the potential for training and advancement; and
- Whereas** the Manitoba Aerospace Association and the Manitoba Aerospace Human Resource Coordinating Committee provide leadership and assistance to the sector in becoming globally competitive; and
- Whereas** the achievements of Manitoba's aerospace companies are truly worthy of celebration;

**NOW THEREFORE LET IT BE KNOWN THAT I, Peter Bjornson, Minister of
Entrepreneurship, Training and Trade do proclaim June 6-10, 2011,**

AEROSPACE WEEK

in Manitoba, and commend their thoughtful observance to all citizens of our province.

Minister

With the official opening of the GLACIER/EnviroTREC facility in Thompson, Manitoba has become the icing certification capital of the world for large gas turbine engines. This globally unique facility became operational on November 1st, 2010 and has completed its first icing certification program.



The Canadian Environmental Test, Research and Education Centre, or EnviroTREC, is a not for profit sister organization to GLACIER. EnviroTREC's purpose is to stimulate research and development activities and to promote the development of human resources necessary to support Manitoba and Canada's participation in the certification of, and technology development for, the next generation of large aircraft engines.

Please visit the EnviroTREC website at www.envirotrec.ca for more information.



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**Join us for a
special Aerospace
Celebration
& Open House**

**Tuesday, June 7,
11 am - 12:00 pm**

University of Manitoba
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MANITOBA AEROSPACE

Where Vision Takes Flight

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Western Economic Diversification Canada



Greetings from the Honourable Lynne Yelich

Minister of State for Western Economic Diversification

It is with pleasure that I extend greetings on behalf of the Government of Canada in celebration of Aerospace Week in Manitoba.

As one of the most dynamic sectors in the province, the aerospace industry in Manitoba is the largest in Western Canada and a major contributor to the Canadian economy with revenues exceeding \$1.6 billion annually. Western Economic Diversification Canada recognizes the strategic importance of Manitoba's aerospace sector and is committed to promoting long-term investment, innovation and job creation across the aerospace manufacturing sector.

We are committed to innovation and enhancing Canada's competitive position in the global economy by:

- increasing our manufacturing productivity;
- commercializing cutting-edge technology; and
- supporting opportunities for Canadians to develop necessary skills and expertise.



In addition, a key priority for my department is to help small and medium-sized businesses maximize new business opportunities from federal procurement activity through Canada's Industrial Regional Benefits (IRB) policy. We are working with businesses and helping to create jobs for western Canadians in this cutting-edge and dynamic field.

I would like to congratulate all members of the Manitoba aerospace industry during Aerospace Week for their success and ingenuity. I look forward

to continued collaboration with the industry as we create and explore ways to enhance and strengthen the aerospace sector in Manitoba and across the West.

Together, we are building a stronger West for a stronger Canada.

Message de l'honorable Lynne Yelich

Ministre d'État à la Diversification de l'économie de l'Ouest canadien

Je suis heureuse de vous saluer au nom du gouvernement du Canada à l'occasion de la Semaine de l'aérospatiale au Manitoba.

Comptant parmi les secteurs les plus dynamiques de la province, l'industrie aérospatiale manitobaine est la plus importante dans l'Ouest du Canada. Elle contribue fortement à l'économie canadienne, générant des revenus de plus de 1,6 milliard de dollars par année. Diversification de l'économie de l'Ouest Canada reconnaît l'importance stratégique de cette industrie et s'engage à appuyer l'investissement à long terme,

l'innovation et la création d'emplois dans l'ensemble du secteur de la fabrication aérospatiale.

Nous avons à cœur d'encourager l'innovation et d'améliorer la compétitivité du Canada au sein de l'économie mondiale par les mesures suivantes:

- accroître la productivité du secteur de la fabrication;
- commercialiser les technologies de pointe;
- favoriser les occasions permettant aux Canadiens d'acquérir les compétences et les connaissances nécessaires.

Par ailleurs, l'une des grandes priorités de mon ministère consiste à aider les petites et moyennes entreprises à maximiser les possibilités d'affaires découlant de la politique canadienne sur les retombées industrielles et régionales. Nous travaillons avec les entreprises et aidons à créer des emplois pour les Canadiens de l'Ouest dans ce domaine à la fois dynamique et novateur.

À l'occasion de la Semaine de l'aérospatiale, j'aimerais féliciter les membres de l'industrie aérospatiale manitobaine pour être des exemples de succès et d'ingéniosité. Je me réjouis à l'idée de poursuivre notre collaboration avec l'industrie dans le but de créer et d'explorer de nouvelles façons de renforcer et d'améliorer le secteur de l'aérospatiale au Manitoba et dans l'Ouest.

Ensemble, nous renforçons l'Ouest pour édifier un Canada plus fort.

Careers take flight for some high school students

By Holli Moncrieff – *For the Free Press*

Just two years ago, Lena Sochaski was your average high school student. Today, she's indirectly saving lives on a daily basis.

Sochaski works in the non-destructive testing lab at StandardAero, testing helicopter engine components for cracks that can't be seen by the naked eye. Her attention to detail ensures that the aircrafts' engines are safe to operate.

"You need to have a lot of patience, and you need to be very meticulous, but I love it," she says. "I absolutely love my job."

Sochaski examines engines that come to StandardAero through two different situations — high-priority, in which case the aircraft is grounded until the engine is fixed, or engines in need of regular maintenance.

"You can't become complacent (in this line of work) — you always have to be on your toes," she says. "If you are tired or having a bad day, the knowledge that people's lives are depending on you keeps you doing your job properly. But you can't dwell on it, because this responsibility is just part of the job."

Sochaski graduated from Tec Voc High School in 2009, where she was enrolled in the Aerospace Technology program. The program, which is a three-year commitment for students starting in Grade 10 (with an optional introductory course in Grade 9), was a spin-off of Tec Voc's Aerospace Manufacturing and Maintenance Orientation program for adults.

"These programs gave us the opportunity to partner with the aerospace industry. The industry partners donate equipment, help us develop the curriculum and allow us to use some of their people to demonstrate the current technology," explains Greg Link, Tec Voc's aerospace coordinator. "All of our instructors have experience in the industry."

The early hands-on experience was a huge

benefit for Sochaski, who says it gave her a basic understanding of the aerospace industry and the different interesting jobs available.

"I would recommend it. People who can work in this industry are very high in demand, and it's an excellent career — there are so many associated areas, so you can move around and have variety," she adds.

Tec Voc isn't the only game in town. Murdoch MacKay Collegiate also has a partner-

ship with the aerospace industry. The school's program was started in 1981 by Bob Land, the former vocational vice-president.

"We often get calls from employers looking for people — they use us as a recruiter of prospective employees," says Peter Brown, Murdoch MacKay's Metals and Aerospace instructor. "Some of our grads are foremen and supervisors — they're calling their alma mater to look for the next generation of new employees."

Graduates of the high school's four-year program are considered to have completed their first level of apprenticeship. The program has an average of 12 grads each year, Brown says.

"We do have some attrition at the very beginning of the program. With aerospace, it's either not for you or you love it. We work with our hands, but there's also a fair bit of math and geometry," he explains. "Some of our projects are very interesting."

In today's competitive workplace, knowing that you can graduate from high school with a guaranteed, well-paying job is highly appealing, adds Link.

"When they graduate, they can go directly into the workforce, and do what they love earlier in life," he says. "The job prospects are great. Our grads are now managers in the industry. They may have started on the shop floor, but they quickly advanced through the ranks."

Brown, who initially immigrated to Canada from Newcastle, England to work for Bristol Aerospace Ltd., believes the program benefits students, whether they decide to go into the aerospace industry or not.

"Our students develop a really good work ethic and employable skills. They'd do well in any area," he says. "But if they decide to stick with it, the aerospace industry is a guaranteed career for them. Our aim is to prepare students to be able to get good jobs. That's what we do — these are well-paying careers, too."

Link has noticed that his successful graduates have one thing in common.

"Most of our students are keenly interested in flight. They are awed by it, and they love to create," he says. "Getting a job is important, but doing what you love is even more important."



PHOTO BY DARCY FINLEY

Lena Sochaski works in the non-destructive testing lab at StandardAero, testing helicopter engine components for cracks that can't be seen by the naked eye. She launched her career at Tec Voc High School, where she was enrolled in the Aerospace Technology program.



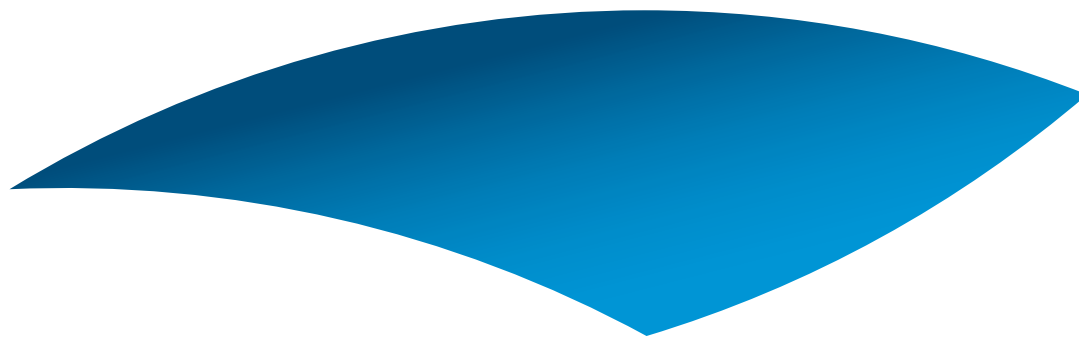
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