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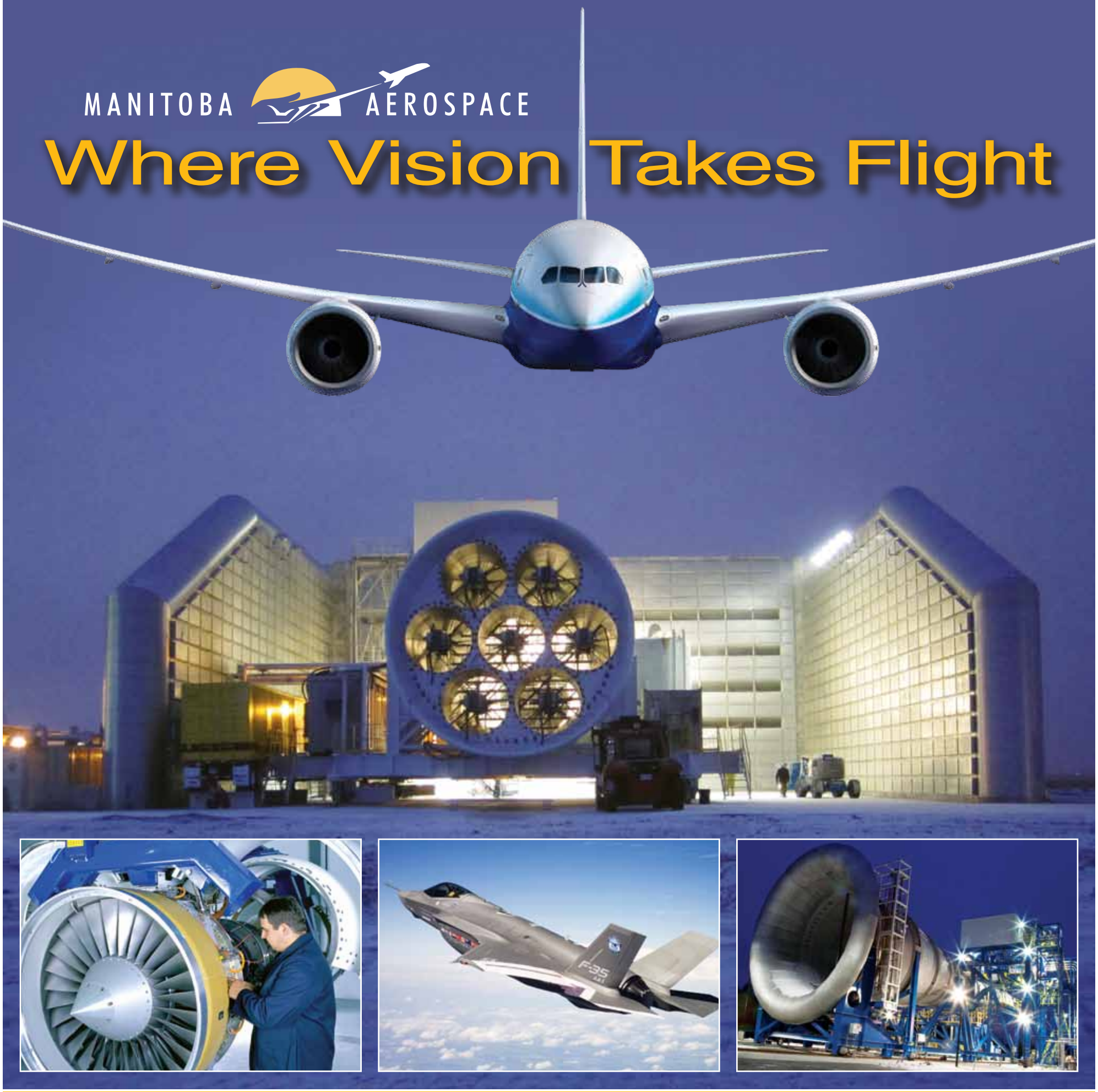
MANITOBA AEROSPACE

Where Vision Takes Flight



Manitoba Aerospace Week · May 28 - June 1

MANITOBA AEROSPACE
Where Vision Takes Flight

Big plans, high hopes for province's cutting-edge aerospace industry

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

It's been in this province for about a century and has its eye fixed firmly on the future.

It's expanding, it employs close to 5,000 Manitobans and it's looking to increase the $1.5 billion it already generates for the Manitoba economy, most of its trade being with the rest of the world.

It's also a world leader in advanced research and cutting-edge development of composite materials, increasingly used in many products, including airplanes and rockets.

It also boasts not one but two of the world's most advanced engine testing and certification facilities, keenly sought out by leading engine manufacturers from around the world. It is home to one of North America's largest aerospace composite manufacturing centres as well as one of the world's largest gas turbine engine and accessory repair and overhaul companies.

What it is — if you haven't guessed already — is Manitoba's globally competitive aerospace sector which produces world-class products for customers on six continents.

It is the third largest aerospace centre in Canada, according to Ken Webb, newly installed executive director of the Manitoba Aerospace Association.

Aerospace is one of Manitoba's premier industries and it continues to grow and develop. Webb's own background prepared him well for his role. He recently retired from a 22-year career at Red River College, where he began as the Dean of Technology and later became Vice-President, Academic & Research.

He has a strong understanding of how research, education and training drives innovation and how it all comes together to support a competitive, world-class industry which provides high-tech, highly-paid jobs for the coming generation of Manitoba youth.

Along with the University of Manitoba, Red River College is an integral education and research partner and training facility for the aerospace industry. The industry enjoys supportive partnerships with local, provincial, and federal governments, as well as with regional secondary and post-secondary educational institutions.

Webb is definitely upbeat about the sector's future here.

"The outlook for aircraft sales worldwide is good right now," he says. "We are expecting it to grow strongly, especially with new aircraft orders from the Middle East, China and the Asia Pacific rim."

Magellan Aerospace (locally known as Bristol Aerospace) is changing the landscape of aerospace manufacturing in Winnipeg as it builds various complex assemblies for the new F-35 Lightning II Joint Strike Fighter (JSF) jet, as part of an international consortium building the airplane.

Projections are that there will be a six- to seven-per-cent annual traffic growth in Asia, China and the Pacific region, and four per cent in Europe and across the Atlantic

Webb says airlines are looking at planes with improved technology and innovations which help them reduce noise, save fuel, and become greener by making optimal use of more efficient engines and new, lighter materials such as composites, including those being developed right here.

"In the last couple of years over $90 million in capital has been invested in Manitoba for new technologies and facilities in support of developing the new processes, products and services to keep Manitoba companies at the leading edge of developments and able to compete in the growing global aerospace industry," he says.

He points to major innovation successes such as the Composites Innovation Centre (CIC) which has become so successful it has had to move to premises offering four times the space it took when formed in 2003.

Manitoba is now home to one of North America's largest aerospace composite manufacturing centres, as well as one of the world's largest gas turbine engine and accessory repair and overhaul companies.

Winnipeg's aerospace sector is also one of the fastest growing in Canada, with revenues growing by 47 per cent between 2005 and 2010.

Winnipeg is also consistently ranked No. 1 in Lean manufacturing across all Boeing manufacturing units worldwide. That means we're efficient and very competitive.

From modest roots in small bush plane repairs in the 1930s, Manitoba's aerospace capabilities have grown to include rocket launches, satellite manufacturing and highly technical aircraft components for the world market. Key players here include

• Boeing Canada Operations Winnipeg, Canada's largest manufacturer of aircraft components made of composite materials. This key player now has design authority for the Boeing 787 Dreamliner, just coming into service.

• StandardAero, one of the world's largest independent companies for the repair and overhaul of turbine engines;

• Magellan Aerospace (locally known as Bristol Aerospace), Canada's only solid rocket propellant manufacturing plant. Bristol produces scientific rockets, satellites and a diverse range of commercial and military aircraft components made of advanced materials. It is planning to invest $120 million to gear up for work on Canada's new F-35 Joint Strike Fighter jets and anticipates decades of well-paid work.

Besides these global companies, another 20 plus smaller- or medium-sized companies are involved with the aerospace industry here. They sell a host of niche aerospace products and services and provide many interesting and challenging jobs.

One example is Cormer Industries Group, which established itself here in 2001. It has grown steadily and has 150,000 square feet of manufacturing, warehousing and processing facilities, as well as some 225 full-time employees. Major clients include Avcorp, BAE, Boeing, Bristol Aerospace, GKN, Goodrich and Rolls Royce.

Cormer's expertise is in precision, high-speed machining and integration and it's an industry leader in the manufacturing and repair of components and assemblies

More than 80 per cent of the aerospace products and services produced by Manitoba companies are exported to six continents. Winnipeg trails only Montreal and Toronto in the size of its aerospace industry.

Continued on Page 15

Message from the President

Manitobans can be proud of another successful year in our thriving aerospace sector. In spite of a challenging global economy, we were able to thrive due to the diversity of the local aerospace industry, which includes manufacturing, maintenance and repair, flight and technical training.

More than 5,000 persons are directly employed in our Manitoba Aerospace Association member companies, creating about $1.5 billion in products and services annually.

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

The industry is led by three world-class, global firms — StandardAero, Magellan Aerospace Limited - Winnipeg (Bristol Aerospace), and Boeing Canada Operations Limited. These companies supply leading-edge products and services to customers around the world, and are supported by more than 20 established regional and national firms that provide a variety of highly specialized products and services.

The last year has been a busy one as the world economy continues to recover and the demand for air travel grows. Boeing Canada Operations Ltd., StandardAero and Magellan Aerospace have all expanded their plants and/or work scopes.

StandardAero is now fully operational with their CFM 56 engine line to overhaul the WestJet Airline fleet for the next 10 years. And in 2011, StandardAero was contracted by General Electric to construct and operate a $50-million jet engine testing and certification facility to test GE's new technology engines. StandardAero engineers, in conjunction with GE experts and excellent local Manitoba contractors and tradespersons, completed this amazing construction project in record time. Two new leading edge General Electric engine types have already been tested at this facility.

Magellan Aerospace (Bristol) continues to build satellites and has added a new 134,000-square-foot facility to manufacture components for the new international Joint Strike Fighter (JSF) program. Magellan's investment of over $100 million will position them well to manufacture a billion dollars of JSF products over the life of that program.

Boeing's new 787 Dreamliner, parts of which are designed and manufactured in Winnipeg, has launched and Boeing Canada Operations Ltd. continues to invest in technology upgrades and capabilities. The Winnipeg plant is the largest composites manufacturing company in Canada and one of the largest in North America.

Our small- and medium-size companies have also had a busy year and come out of the economic downturn with new business and busy order books. Cormer Industries Group was recently named one of the Top 50 Defence Contractors in Canada

Our Research and Development capacity also continues to grow. The University of Manitoba is expanding its Engineer in Residence program and the Composites Innovation Centre moved into a new facility. Red River College expanded the Centre for Non Destructive Inspection (CNDI) network and the Centre for Aerospace Technology and Training (CATT) lab, both of which are industry driven partnerships. The new GE sponsored engine test centre has spawned the creation of a new organization called West Canitest R&D Inc. (WestCaRD), which is engaged in facilitating the addition of new technology and equipment to create additional Research & Development opportunities. All of these initiatives will support our industry, bringing more jobs to Manitoba.

Aerospace is a worldwide business and Manitoba is competing globally. Despite the fact that the playing field is not always level, Manitoba companies continue to compete favourably because of the well-trained people in our workforce. In addition to attracting, training, and retaining good people, we also need to continue to 'up our game' — not only in quality, delivery, and cost but also in our overall ability to compete and improve productivity.

An important new initiative is the Competitive Edge company development program — an innovative and robust model to develop local companies into world-class suppliers. The program, modelled after a highly successful initiative for the UK, involves benchmarking, training, mentorship and coaching. Five of our MAA member companies are enrolled (Cormer Industries Group, Enduron Custom, Standard Manufacturers Services, Argus Industries, and Micropilot). By all reports, the Competitive Edge initiative is developing into a very effective program and is being well received by our companies.

Looking to the future, we know that there will continue to be challenges in the world's economies and lots of international competition. However, the forecast requirement for 30,000 newer, greener aircraft over the next 20 years provides tremendous opportunity for our members, for Manitoba and for Canada. The sky truly is the limit for the Manitoba aerospace industry.

If you're looking for an interesting, challenging, well-paying career, the aerospace industry could be the answer you're seeking. Look us up!

Kevin Bartelson, GM Boeing Canada Winnipeg
President,
Manitoba Aerospace Association

MANITOBA AEROSPACE
Where Vision Takes Flight

Magellan celebrating a year of success

By Susie Strachan – *For the Free Press*

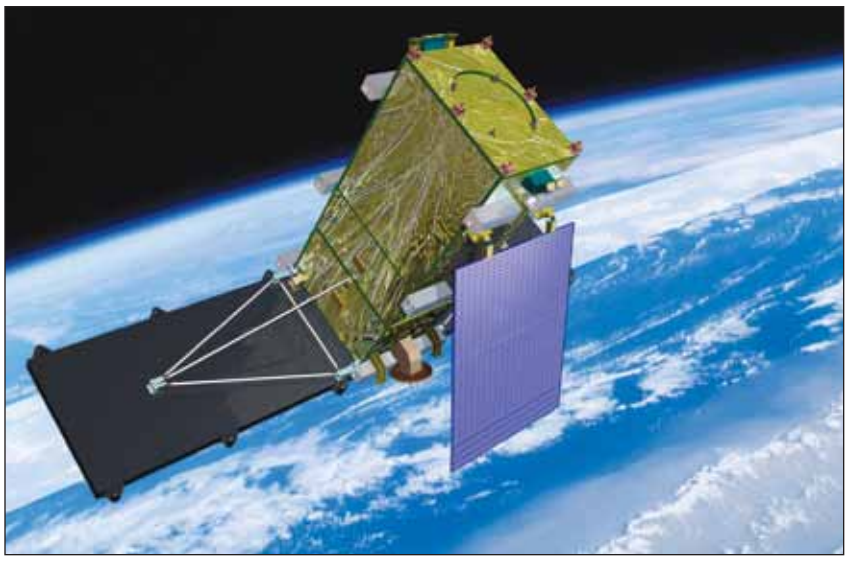
DON BOITSON

Business is flying high at Magellan Aerospace, with the launch of rockets, satellites and more contracts to build parts for all the major aerospace companies.

Later on this year, the Canadian Space Agency will launch Cassiope, a Magellan-built satellite that is part of the RadarSat Constellation Mission to support maritime surveillance — such as ship detection, ice monitoring and oil spill detection (disaster management and ecosystem monitoring).

Magellan has already launched one satellite in 2003, and will be building another in 2013, says Don Boitson, general manager at Magellan Aerospace's Winnipeg-based division, Bristol Aerospace.

"We design the 'bus' part of the satellite, which is the spacecraft frame, the solar panels, power, computer and guidance system," says Boitson. "The data-gathering payload comes from partners such as universities which are studying aspects of Canada's north. Then we data-link that information down to the ground."



The Canadian Space Agency plans to launch Cassiope, a Magellan-built satellite that is part of the RadarSat Constellation Mission to support maritime surveillance. Magellan has already launched one satellite in 2003, and will be building another in 2013.

This year, Magellan will celebrate the 50th anniversary of the Black Brant rocket program at Bristol. The Black Brants are two-stage sounding rockets used by agencies such as NASA for scientific work, such as research into the aurora borealis, astronomy, solar physics and microgravity.

"The Black Brants were bringing back data from near-space before manned-flights into space," says Boitson, adding between 15 and 20 of the single-use rockets have been launched each year since 1962, each carrying scientific experiments into the upper atmosphere of the earth.

Another contract for Magellan is building titanium exhaust nozzles for the A380 Air Bus, which is the largest passenger jet in the world. Boitson says the contract is for 80 of the units, which are two metres in diameter and a metre deep. The units have to be very strong, yet very light, and able to handle high temperatures.

On the aerostructure side, Magellan continues to design and build items such as the Wire Strike Protection System, which is a safety kit for helicopters. This is a passive safety device installed on helicopters to protect against accidents caused by collision with wires at low altitude. Just over a year ago, Magellan contracted with a company in India to put the kit on all the helicopters they build. The company also is working to build the tail cone for the Dash 8-Q400 NextGen turboprop airplanes being built by Bombardier and recently announced by WestJet as an additional aircraft model for their fleet. The tail cones house the auxiliary power system.

Magellan has recently completed a new 134,000-square-foot building at their Berry Street location near the James Richardson International Airport. The building is 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 houses a number of large computer controlled manufacturing and measuring machines as well as a laser non-destructive inspection system, which is used to scan the parts to detect irregularities within the composite components, should they exist.

"We use non-destructive testing to tell if parts will be strong enough without breaking, and can test everything from machined brackets to composite ribs or castings," says Boitson. "When you're building with composites, you can't have foreign objects, or bubbles, in between the layers. So we can use ultrasound, X-ray, and laser tests to determine if the part is good or not."

Magellan is working with Red River College to train the first class of students who will work on the specialized systems that the company now uses. They also work with the University of Manitoba's Engineering faculty in terms of what new aerospace engineers are learning.

Continued on Page 5

This year Magellan will celebrate the 50th anniversary of the Black Brant rocket program at Bristol. The Black Brant is a two-stage sounding rocket used by agencies such as NASA, and helped established Bristol's reputation in the scientific market.

Continued from Page 4

Magellan Aerospace is also changing the landscape of aerospace manufacturing in Winnipeg, as it builds various complex assemblies for the new F-35 Lightning II Joint Strike Fighter (JSF) jet, as part of an international consortium building the airplane.

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

The Lockheed Martin F-35 Lighting 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 takeoff 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 defences — 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 the 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.

"There will be 1,038 horizontal tails built here," says Boitson, adding the United States is purchasing the bulk of the jets, with the United Kingdom, Italy, Netherlands, Canada, Turkey, Australia, Norway and Denmark all participating in the development of the aircraft.

The company employs more than 700 people, and produces aerospace components, including aerostructures, aeroengines and the rockets in the space division, according to Boitson. Magellan produces aircraft sub-assemblies and engine components for all the major aerospace companies.

"Our industry has become a lot more global and we've expanded our operations worldwide," he says. "The job has become more challenging because we're competing with the world's best companies."

That competitiveness means Magellan hires the best engineers, designers and manufacturing people, and puts the right equipment on the floor for them to use, and connects them with the right suppliers in Europe and southeast Asia.

"We may not be a household name in that we don't sell consumer products, but our work is a part of the aerospace industry around the world," says Boitson. "We are in research vehicles such as rockets, major airplanes have our parts, and satellites carry our components high overhead."

MANITOBA AEROSPACE
Where Vision Takes Flight

New facility to test world's greenest, most advanced engines

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

Vic Gerden is as proud as a new father as he surveys the latest offspring of Manitoba's burgeoning aerospace sector.

The child bringing a smile to his face is actually the result of a collaboration between General Electric (GE) and StandardAero and is a new facility in Winnipeg known as the GE Aviation Engine Testing Research & Development Centre. GE contracted StandardAero to not only manage the entire construction project but to also operate this unique facility for the next 10 years to test the world's newest, greenest, advanced technology aircraft engines here on property owned by the Winnipeg Airports Authority. The first phase of the construction of this Testing and R&D Centre began in April 2011, and was completed by January 2012, in time to start engine icing certification tests on two new technology engine models.

The facility will be one of the finest in the world and will be a jewel in our Manitoba aerospace crown.

Gerden, the former executive director of the Manitoba Aerospace Association, is now CEO of a new non-profit corporation named West Canitest R&D Inc (known as WestCaRD). He believes this new GE Testing Research & Development Centre will help leverage many more exciting projects and economic opportunities in the Manitoba aerospace field.

"New aircraft engine designs must, of course, be thoroughly tested before they are certified for regular use on commercial aircraft, by regulatory authorities such as the U.S. Federal Aviation Administration (FAA) and Transport Canada," says Gerden. "One of WestCaRD's objectives is to encourage and assist the continued enhancements at the GE Testing R&D Centre to maximize the types of tests and research and development that can be done here in Manitoba."

In January, The Honourable Lynne Yelich, Minister of State for Western Economic Diversification Canada, announced a funding contribution of $5 million to WestCaRD toward this project, to develop new aerospace technologies and industrial research capabilities and to foster both technological and economic growth.

VIC GERDEN

"Our government is supporting initiatives like WestCaRD," said Yelich, "because they will create opportunities for Manitoba companies to create jobs and foster economic growth."

Gerden is all in favour of that. Plans are already underway to add advanced technology testing equipment to create a broader and more marketable testing capability to the Winnipeg Testing R&D Centre.

In this next phase, WestCaRD resources, together with additional investments by GE Canada, GE Aviation, and ongoing contributions by StandardAero, with inputs from the National Research Council of Canada and others, will enable WestCaRD to invest in new technologies and equipment capabilities that include: advanced instrumentation, high-speed cameras, cutting-edge data acquisition systems, airflow and emissions control and vibration analysis, as well as other innovative testing and certification equipment.

When these upgrades are made, the Testing R&D Centre will better support a variety of the different engine tests, including endurance and ingestion tests. The facility will be one of the finest in the world and will be a jewel in Manitoba's aerospace crown.

The investment in WestCaRD by Western Economic Diversification Canada will create a springboard for Manitoba companies, researchers and educational partners to have opportunities to engage in and contribute to further equipment enhancements and leading-edge technology development.

WestCaRD's target is to create the environment and facilities to attract the newest, greenest and highest technology engines in the world to come to Manitoba for year-round testing. The ultimate goal would be to create the capacity, facilities and workforce knowledge and technical skills to attract some of those new technology, environmentally green engine models to come to Manitoba for major maintenance repair and overhaul work.

WestCaRD will also facilitate the training of the specialized workforce needed to operate this leading edge Testing, Research & Development Centre and to work on these new technology engines.

Continued on Page 7

The new GE Aviation Testing Research & Development Centre engine test facility at the break of dawn. The 122,500-square-foot facility is a new jewel in Manitoba's aerospace crown.

Continued from Page 6

"We are already collaborating with the Province of Manitoba, with our excellent educational partners, University of Manitoba Engineering Faculty, Red River College and our EnviroTREC colleagues associated with the engine test facility in Thompson, to grow the expert workforce that will be needed in this exciting, growing, testing and propulsion sector in Manitoba," says Gerden.

"Together, the new GE Aviation Testing Research & Development Centre in Winnipeg and the GLACIER engine testing facility that officially opened in Thompson in October 2010, are positioning Manitoba extremely well to be a world leader and a centre of excellence for icing and engine testing for the world's major aircraft engine manufacturers, particularly GE Aviation, Pratt & Whitney, and Rolls-Royce.

"The new test facilities at Winnipeg and Thompson," he adds, "are similar in purpose, but at the same time are different in design, and both are outstanding, world-class facilities. The GLACIER facility in Thompson, which is a joint venture between Pratt & Whitney, Rolls-Royce and EnviroTREC, uses a 'direct connect' design concept in which ice-generating test equipment is directly connected to the front of the engine being tested and relies on the engine to create the airflow. Whereas, the GE facility in Winnipeg uses a 'free jet' design, which involves seven large, individually controlled fans that create a controlled airflow and, together with water injection nozzles, generates an icing cloud that can then be directed at the engine being tested to see how the engine reacts in specific, predetermined icing conditions. In fact, this "free jet' design in the Winnipeg facility has the additional flexibility to allow the icing cloud to be used not only for testing engines but also for testing other objects, such as unmanned vehicles, structures, wind turbine blades, airfoil designs, or new composite materials, to better understand how these objects and materials react to icing conditions so that product improvements can be made."

StandardAero, with its gas-turbine repair experience and ever-growing capabilities, is poised to ultimately leverage substantial benefit from the new General Electric Aviation Testing Research & Development Centre. Kim Olson, StandardAero's senior vice-president in charge of Helicopters, Energy & Engineering, says its engineers and technical staff will be able to do even more work on behalf of GE, which is the largest aircraft engine supplier in the world.

GE is currently redesigning various families of engines over a five-to-seven-year period to introduce improvements in fuel efficiency and emissions. Daniel Verreault, GE's vice-president of government relations and business development for GE International and Canadian director of military systems operations for GE Aviation, says GE Aviation's alternate engine testing site at Peebles, Ohio, is running at capacity now so the Winnipeg test facility is a strategically important asset that will add crucial capacity for the company as it rolls out new engine models.

The design and technical capabilities of the Winnipeg facility make it a unique, cutting-edge operation. Permanent StandardAero staff will man the Winnipeg facility and Gerden expects the number of employees to grow as new testing projects are developed.

"We have already had three new GE engines being tested at the facility and this summer we will be getting another one," he says. "These are the newest, advanced GE-nx engines for the latest model aircraft. I think it is fantastic that some of the most advanced, greenest engines in the world are coming to Manitoba for testing and certification."

Gerden says from a broader perspective, Manitoba is at the forefront of new developments and major new international aerospace programs, thanks to our long record of maintaining a highly-skilled engineering, technician and tradesperson workforce, along with excellent educational and research and development institutions, such as the University of Manitoba, Red River College, the Composites Innovation Centre, the Centre for Aerospace Technology & Training, and the Centre for Non Destructive Testing.

"We have knowledge, expertise and a long and successful Manitoba track record in manufacturing as well as engine maintenance and repair services, so I think aerospace in this province has a bright future, but we are in competition with the rest of the world and have make sure we keep up with technology and training," he says, noting that Boeing Canada Operations Ltd. now has gained design authority for a few components on the Boeing 787 Dreamliner and their Winnipeg facility has become the largest composite manufacturing and repair centre in the country.

"Our expertise in composite materials is important and second-to-none. And on top of that, our engine and component maintenance and repair capabilities are the largest in Canada. In addition, Magellan Aerospace has developed some excellent manufacturing capabilities and is involved in several major aircraft and space programs, including being a supplier for Bombardier, Airbus, MacDonald Dettwiler and the Lockheed F-35 Joint Strike Fighter program which is the replacement aircraft of choice for nine NATO countries.

"The benefit to Manitoba's economy from Magellan's planned work on the F-35 program alone will bring over $1 billion to the Manitoba economy over the duration of that program. So the future of aerospace in Manitoba is looking good."

Ambassadors reach out to students

BARBARA BOWEN

By Mike Miguez – *For the Free Press*

The idea of an Aerospace Ambassador Program was conceived in the spring of 2011.

The purpose of the program was to find and train recent graduates working in the local aerospace industry who were interested in introducing students to career opportunities in the aerospace sector through hands-on workshops at schools and career fairs.

"While the aerospace industry has good people now, they are facing the same manpower shortage as everyone else," says Barbara Bowen, special projects manager for Manitoba Aerospace Human Resources Council (MAHRC).

> *There are great jobs and world-class training facilities. You can stay right here at home and end up with a fantastic job and a great lifestyle.*

"There is a skills shortage. It's the demographics — people are retiring. Part of my responsibility is to make sure there are people who have had the training needed to fill those jobs."

The Ambassador Program focuses on students in Grades 7 to 9. Hands-on workshops are held during school hours.

"The reason we are going after kids in those grades is to make them, their parents, and teachers aware that we do have a vibrant aerospace industry right here in Manitoba," she says. "There are great jobs and world-class training facilities. You can stay right here at home and end up with a fantastic job and a great lifestyle.

"The aerospace industry will give you all the training you need. If you put the time and energy in, the aerospace companies will support you."

Right from the start program organizers have had no problem in finding volunteer ambassadors from within the aerospace companies.

"The response has been incredible," Bowen says. "With very little to go on, because we are all learning as we go along, because it's brand new, we have over 30 people on board. When we had our information sessions we asked them why they were interested in doing this and the answer was pretty well the same from everybody: I love my job and it's an opportunity to give back.

"We have had great response from the big three, StandardAero, Bristol Aerospace, and Boeing, as well as from smaller companies."

Ambassador training began in the fall of 2011. A program specialist has been hired to work with the ambassadors in developing the lessons and learning how to work with youth.

"One of the most important things to keep in mind when you're trying to get concepts across to youth is the kids have to try it," says Bowen. "To get their hands in there. These people are experts in their fields but they are not necessarily experts in working with youth."

In addition to working with the program specialist, the ambassador training involves how to present curriculum in an understanding way and working together in teams.

The ambassadors have also been involved in brainstorming meetings focusing on what activities to include and equipment needed to carry out those activities.

Ambassadors have also been asked to take the initiative in approaching their local and neighbourhood schools to inform them of the program.

"Some of them have done that and are anxious to get in and work with their own neighbourhood schools," says Bowen. "There has been a fair amount of time put in by the ambassadors."

A pilot project was recently held at Winnipeg's Tec Voc High School involving a number of ambassadors presenting their hands-on workshops in preparation for the fall 2012 launch.

Organizers are in the process of assessing the results.

"We are very anxious to evaluate how things went," Bowen says.

Organizers plan on putting out a late summer, early fall marketing campaign in order to measure the interest of teachers and schools.

Initially the Ambassadors Program will be offered in Winnipeg and surrounding area.

Bowen is excited to see where the program will go.

"Absolutely, this is brand new opportunity," Bowen says.

"What's really exciting for the council when we start these programs is seeing them take on a life of their own so that teachers know that if they contact one of the companies they can have someone come in to do hands-on activities with their students."

The Ambassador Program will officially launch in the fall of 2012. Interested schools and teachers can contact the Manitoba Aerospace Human Resources Council at 272-2955.

ANNUAL AAIM DAY A BIG HIT WITH KIDS

Grade six students participate with hands-on activities focusing on flight, aviation and aerospace manufacturing during AAIM Day. This year's AAIM Day included students from Neepawa and Gimli, as well as Winnipeg.

The Manitoba Aerospace Human Resources Council recently held its annual Aerospace & Aviation in Manitoba (AAIM) Day at Red River College — Stevenson Campus.

AAIM Day is designed to introduce the various aspects of Manitoba's thriving aerospace and aviation industries to Grade six students and their teachers.

This year's AAIM Day included students from Neepawa and Gimli, as well as Winnipeg.

"The reason we choose grade six is because their science curriculum includes a module on flight," says Barbara Bowen, special projects manager for Manitoba Aerospace Human Resources Council (MAHRC), and creator of AAIM Day.

"The kids are learning about the theory of flight, lift, and various aspects of aerodynamics, so we thought what better age group to bring in."

The half-day program involves more than 700 students, broken into morning and afternoon time frames, participating in hands-on activities focusing on flight, aviation and aerospace manufacturing, over two-plus hours.

Hands-on activities include: composites — combining different materials to create a lighter, stronger, more fuel-efficient material than steel; flight inspection on helicopters and aircraft; crater fun — the effects of meteorites hitting the earth; DC9 theatre — an on-board learning exercise involving the various jobs involved with flying aircraft; aerodynamics of paper airplanes; and rockets.

AAIM Day has received very positive evaluations over the years from both students and teachers.

"The biggest complaint we get from the kids is it's too short," Bowen says.

"In my opinion, if you have kids asking for more, it's been a success."

The popularity of the program has grown so much the MAHRC does not do any regular marketing other than the occasional presentation at science teacher's in-service days.

The program has taken on a life of its own by word-of-mouth.

"We are extremely pleased to see how the program has developed," Bowen says. "We have an absolutely fantastic team working on this program."

Competitive Edge program offers companies detailed map to success

By Pat St. Germain – *For the Free Press*

Manitoba Aerospace wants its member suppliers to reach for the stars. And it is offering them a boost with the Competitive Edge Supplier Development Program.

A pilot project modelled on a successful program in the UK, Competitive Edge helps companies clarify goals and create detailed blueprints for success, starting with assessments that give them a benchmark score on 11 foundational processes, including innovation, project management and e-business.

There are five rungs on the benchmark ladder: Learner, developer, performer, contender and world-class organization.

Companies get a clear picture of where they stand on each of the foundational processes and, with training and coaching, develop a step-by-step strategy for moving up the ladder on two or three processes they choose to improve upon.

"It's a very structured approach to helping an organization develop a vision for where they want to go and a detailed map as to how they're going to get there," says Manitoba Aerospace Human Resources Council executive director Wendell Wiebe.

Wiebe says the value of the project is in the journey. He says it's impossible to reach the world-class step because it's constantly moving.

"The definition of world class changes all the time because companies are having to be more efficient in order to please their customer."

The program, which is supported by Western Economic Diversification Canada and Industry Workforce Development, is open to all manufacturers in Western Canada, but its initial focus is on Manitoba Aerospace's small and mid-size member companies.

The big three companies — StandardAero, Boeing Canada Operations Ltd. and Magellan Aerospace (Bristol) — already have many of the key systems in place. But they've been asked to participate by providing mentors who spend a few hours each week with a smaller company's executive team.

Five companies have joined the program so far. Cormer Group Industries, Enduron Custom Inc., Argus Industries and Standard Manufacturers Services signed on in March 2010, and Micropilot joined in March 2011.

The companies pay a portion of all costs, but Wiebe says the biggest commitment is time. For example, if a company needs to improve in the area of project management, key employees must take training and then evaluate their organization to see how they can apply the principles of project management to all their operations, with assistance from a mentor and follow-up evaluation from a program steering committee.

Manitoba Aerospace Human Resources Council executive director Wendell Wiebe (above) says the Competitive Edge program helps companies create detailed blueprints for success. Standard Manufacturers Services vice-president of operations Kim Gretschmann (right) says the program has already paid off for her busy company.

PHOTOS BY DARCY FINLEY

"As an executive, you're committing your time that you're going to develop these business processes within your plant, and so any time you're introducing some change into an organization it usually takes a lot of extra energy because it's something on top of just running the business," Wiebe says.

Standard Manufacturers Services vice-president of operations Kim Gretschmann says making that commitment has already paid off for her busy company, which designs and develops prototypes and has an aluminum foundry to make and machine metal castings for planes, trains and automobiles.

"There's so much going on all the time and that's what makes this program strong is because it provides that focus. You can get busy doing a bunch of little things that don't really help you overall, but the program actually gets you to focus in a structured manner to collect the data that you need to make a difference on."

Standard Manufacturers Services chose to focus on three foundational processes — leadership, strategic business planning and lean, a process that eliminates waste and improves operational efficiency.

The initial benchmarking assessment identified gaps and mapped out specific steps the company had to take to reach its goals. Gretschmann is confident a second benchmark assessment this September will show improvement.

"You're always wanting to go to that next step, but finding that roadmap just clarifies it and makes you see the forest for the trees so to speak," she says, adding that having mentorship may be the most valuable component to the program.

"The mentorship element provides us with ongoing support that wouldn't otherwise be available, and they inherently insert influence, accountability, credibility and, of course, leadership into the process that supports our entire management team," she says.

"The bottom line for the entire program is probably the transfer of knowledge that is embedded and shared for the best practice."

Wiebe says some components of the program are still evolving. It's using expertise from the UK model for some of the foundational processes, but is gradually identifying more local suppliers who can deliver training and coaching.

He says the five companies in the program have seen improvements in performance, and Competitive Edge wants to bring more companies onboard.

Gretschmann says the decision to join the program should be easy.

"It helps people be better at what you have to be better at, because you really have no option. Quality has to be there, safety has to be there, production efficiency has to be there, and so it's really helping you do what you have to do anyway."

MANITOBA AEROSPACE
Where Vision Takes Flight

U of M, Red River College help prepare students for careers in aerospace

By Liz Katynski – *For the Free Press*

Training and education are important components in Manitoba's growing aerospace economy.

A big part of the innovation and productivity solution for industry is having a high-quality workforce, and Manitoba is fortunate because it has the human resources to drawn on from both the University of Manitoba and Red River College.

Big things are happening at the U of M, which will soon add a second Engineer in Residence position for a mechanical engineer with aerospace option.

The Engineer in Residence is a professional lead for the university's aero design team that works on team-based student projects.

A student uses a robotic welder at Red River College's Centre for Aerospace Technology and Training (CATT), located at StandardAero. Many of RRC's manufacturing technician and technology students will spend time in the lab each term.

Recently, the team placed second in the world at the Society of Automotive Engineers (SAE) Aerospace Competition in Atlanta.

"The winners, from Brazil, beat us by less than one point," says Jonathon Beddoes, dean, Faculty of Engineering, at the U of M. "That's a very strong indication of the calibre of our students and our program."

In another competition, the Canadian Satellite Design Competition, students designed and built a satellite. They are currently in first place in the second round of judging. The first-place winner will be announced in Ottawa in September. If they win, their satellite will be launched into space and this will be the first time a U of M student-designed satellite makes it to space.

"These are just two examples of the large team projects by students," says Beddoes. "U of M's aerospace-related training is kept current and relevant through the advice of the Manitoba Aerospace Engineering Liaison Group (MALEG). It includes representation from the Manitoba Aerospace Association, Boeing, StandardAero and Magellan.

"They help us ensure we provide students with what they need as they move into the industry."

The University of Manitoba is the top supplier of engineers in Manitoba, supplying 85 per cent of all engineers working in the province.

Aerospace is an area where engineers have many opportunities to meet technical challenges and make a difference, says Beddoes.

"Manitoba has the two most advanced cold-weather aero engine testing facilities in the world — WestCaRD at the Winnipeg airport, and Glacier in Thompson. We work in close collaboration with them."

Red River College continues to move ahead in preparing students for careers in the aerospace industry. The college's industrial campus is a new, award-winning way to have students learn the latest technology as they apply it to real-life projects.

This 'campus within industry' — with the school's equipment located at StandardAero, is the first of its kind in Canada, and has been toured by many educators and industry engineers, who are inspired by the idea and want to learn more about how it was accomplished and how it works.

Known as the Centre for Aerospace Technology and Training (CATT), it started in 2009 and many of RRC's manufacturing technician and technology students will spend time in the lab each term. About 15 have worked on applied research projects on their co-op placements or as interns.

"StandardAero provides the facilities and maintenance and we provided $5 million worth of equipment with support from Western Economic Diversification and the federal and provincial governments," says Don MacDonald, dean, School of Transportation, Aviation and Manufacturing at Red River College.

Continued on Page 13

StandardAero boldly embarks into its next century of service

For the Free Press

Since celebrating its 100th anniversary last year, StandardAero's next century of service is continuing with a number of significant achievements, milestones and celebrations at its Winnipeg facilities.

One of those accomplishments was marked by the company's 10-year anniversary as a GE authorized CF34™ engine services provider, and the last three years as a GE Designated Fulfillment Centre for CFM56 engine maintenance.

This year, StandardAero reached an amazing milestone by completing a combined total of 1,000 CF34 & CFM56 engines. The 1,000th unit delivered was a CF34-3 engine for long-time customer, Brit Air.

To celebrate this achievement, the company announced this historical event externally at a major European trade show on May 14, in Geneva, Switzerland.

Brit Air is one of StandardAeros's first CF34 customer outside North America and the company's long-term partnership with them has strengthened its presence in the European market as well as extended its global footprint. StandardAero's reputation for quality, reliability, turn-time and customer service has been recognized through its relationship with Brit Air, as have many other long-term partnerships with companies such as GoJet, Atlantic Southeast Airlines, Embraer, Cimber, Alitalia, WestJet, and SkyWest.

Marking another significant achievement this year, on Feb. 1, General Electric, StandardAero, the Winnipeg Airport Authority and WestCaRD hosted a gathering of local politicians, VIP's, educators, aerospace industry executives and the media to tour and participate in ceremonies to officially open the General Electric Testing, Research and Development Centre (TRDC).

StandardAero, a GE authorized CF34™ engine services provider, reached an amazing milestone this year by completing a combined total of 1,000 CF34 & CFM56 engines. The 1,000th unit delivered was a CF34-3 engine for long-time customer, Brit Air. Staff members celebrated the achievement with a group shot.

The event marked the successful conclusion of a very large-scale project for StandardAero and signifies the start of a long-term relationship with GE in the area of new engine development.

GE selected to build this new facility at the James Richardson International Airport, in conjunction with StandardAero. The selection of Winnipeg and StandardAero was due to many factors, including the excellent relationship GE has with StandardAero, the favourable conditions in Winnipeg for icing tests and the proximity to a skilled workforce in the area of gas turbine engine testing.

After several months of environmental studies on several sites in and around the airport and several months of conceptual design, construction of the facility commenced on April 26, 2011.

With an expanded scope from GE to build a facility rated to test the largest engines in the world, StandardAero's Facilities Engineering team was engaged to design and manage the facilities project. The timeline for the project was extremely aggressive as GE challenged StandardAero to have the facility ready to perform icing certification tests during the 2011-2012 test season in Winnipeg. With the task of building a facility of such size in such a short period, the team accepted the challenge and started on the journey to complete the facility to meet GE's deadlines.

Seven months after site mobilization at the James Richardson International Airport, the team was able to declare substantial completion of the facility. This milestone did not arrive without a lot of hard work by both StandardAero employees and the many trades and sub-trades employed by StandardAero throughout the project. Following are some of the construction highlights:

- More than 17,000 engineering design and project management hours over the course of the project;
- Up to 200 contractors at the job site at any given time;
- Five months to complete the 94,500-square-foot foundation;
- 330 caissons drilled and poured for the pad foundation — 45 of the caissons were five feet in diameter under the test stand;
- The thrust stand was embedded into the concrete (six feet thick) on Aug. 9;

The completed facility has become the world's leading engine test certification centre with a significant amount of capability and new technology incorporated.

The single post stand utilized at the facility, at a total height of 56 feet, is only one of three around the world. The stand and the surrounding foundation were designed to withstand the extreme occurrence of a very large engine blade out event. The facility also incorporated three noise attenuation walls at a height of 51 feet to reduce and limit the sound of large engines tested at the site.

In addition, the noise attenuation package includes a 16-foot translating augmenter tube and a 51-foot high exhaust tower. The facility also incorporates a 100-foot rail system which will move a platform that holds one million pounds of the wind tunnel and associated services to run an icing test.

The movement of the tunnel and services will enable the facility to be used for additional testing in the areas of ingestion, hailstorm, endurance, and mixed phase testing.

StandardAero has officially become part of the engine certification process with GE. Over the next five years, GE will have a significant amount of new engine platforms that will utilize the facility for certification tests.

StandardAero continues to see a bright future in Winnipeg and in the global aerospace industry, and the company is looking forward to its next century of service.

Composite research centre spreads wings

By Jim Johnson – *For the Free Press*

The Composites Innovation Centre (CIC) in Winnipeg is growing, prompting a recent move into a much larger facility, which can only mean good news for the province's expanding aerospace industry.

Since it was formed in 2003, the CIC has grown to become the largest not-for-profit composites research facility in the country — heady stuff considering it first opened its doors in 2003. And much of that growth has to do with the work it has done, and continues to do at an accelerated pace, with the aerospace industry.

Sean McKay, the CIC's executive director, says the growing interest in bio-materials and traditional composites for the aerospace industry has kept the centre busy with a growing number of projects. About 30 per cent of the work done by CIC is in the aerospace industry.

"We work closely with our major clients like Boeing, Magellan and Cormer Group Industries," says McKay, who has held the position since the inception of CIC. "We have some projects we are working on to support Magellan in qualifying their facilities for producing parts for the F-35 aircraft, as well as assisting in troubleshooting the introduction of new product for getting that aircraft on the shop floor."

McKay says CIC also is implementing a program to transfer engineers into the facility to support cross-training initiatives and developing resource pools that can be used for large projects.

"For example, if Boeing gets a large contract," he says, "It would have a larger resource pool in the community to draw on to work on that program."

The CIC was the driving force behind the establishment, and is the co-ordinator, of Canadian Composites Manufacturing R&D Inc. (CCMRD), a national aerospace industry-focused, pre-competitive technology development and demonstration research consortium, and also plays a similar role in the operation of a bio-fibres initiative. It works globally with different countries to implement research centres to support the development of new technologies.

The consortium has grown to 11 members, including Bell Helicopter, Bristol Aerospace, Cormer Group Industries Inc. and Boeing Canada Operations Ltd. Technology Winnipeg Division. Boeing Canada Operations Ltd.'s U.S.-based research and technology division sits on the board and is an active participant.

CIC is a non-profit corporation that's funded partly by industry, but primarily by the provincial and federal governments through the Western Economic Partnership Agreement (WEPA).

Its main focus is to support the composites manufacturing industry in developing and growing their businesses.

McKay said the CIC is becoming world-renowned for its work in the development and commercialization of natural fibre materials used in composite structures.

Plant wastes from food production and forestry operations can be pressed and moulded into car parts, and potentially aircraft pieces and building materials that are lighter, less expensive and just as strong as fibreglass.

At the same time, these materials eat up less energy in the manufacturing process. And a lighter vehicle — be it a car, a bus, or a plane — uses less fuel, which in turn is better for the environment.

CIC is not alone in the bio-materials field in Canada, but it is somewhat unique.

"Others in Canada do the research component," says McKay. "We are closer to the commercialized end of things. We work directly with our clients to develop technologies and investigate alternate materials that can be used and transferred over to industry to improve products or develop new products."

CIC will also work on existing products where there is a requirement for a class-weight advantage.

McKay says CIC identified the need for a new facility a few years ago.

"For the past three years we've been working to see how we can coordinate the funds and support we need to build it," he said. "We needed to provide a prototype shop that allows us not only to design the part in-house, but to fully produce prototype parts from the computer-aided design drawing, all the way through to manufacturing the end part that's ready for testing and trialing with our customer."

CIC has since moved from its 6,000-square-foot building at the University of Manitoba's Smartpark to a 21,000-square-foot location at Tuxedo Business Park in southwest Winnipeg.

McKay says the new space will mean CIC will have room for training in partnership with Red River College and the U of M.

McKay expects staff at the centre to grow to 30 from the current 22 by the beginning of 2013.

"We have developed in an era where government, both provincially and federally, see that with innovation you can improve productivity and therefore grow the manufacturing sector," says McKay. "We're an enabler of that type of policy.

"The growth has come because we're in the right place at the right time."

— WITH FILES FROM THE WINNIPEG FREE PRESS

The Composites Innovation Centre (CIC) moved from its 6,000-square-foot building at the University of Manitoba's Smartpark to a 21,000-square-foot location at Tuxedo Business Park in southwest Winnipeg (above). The CIC is becoming world-renowned for its work in the development and commercialization of natural fibre materials used in composite structures.

Since it was formed, the CIC has grown to become the largest not-for-profit composites research facility in the country — heady stuff considering it first opened its doors in 2003.

SEAN MCKAY

KEN WEBB

Experience a big resource for Webb, MAA

Ken Webb could probably have had his pick of places to live and work after his education was done.

But after receiving his Engineering degree from the Royal Military College in Kingston, Ont., and his Masters of Engineering from the University of Canterbury in Christchurch, New Zealand, he preferred to stay close to his roots and came home to Winnipeg.

Today, after a full and robust career, he's the new executive director of the Manitoba Aerospace Association, and committed to moving the industry in this province forward.

"Winnipeg is such a great place to live, work and play," says Webb. "We have been fortunate to live and work in a number of places, and to have travelled through many parts of the world, and that has given us great perspective and an appreciation for how great a place Manitoba is. We consider ourselves very lucky to have been able to come back home, raise our family, and have a number of rewarding careers here."

Webb's own background prepared him well for his role. He recently retired from a 22-year career at Red River College, where he began as the Dean of Technology and later became Vice-President, Academic & Research.

Prior to Red River College, he developed extensive experience in engineering design and management, and he spent 10 years with the Department of National Defence.

He has a strong understanding of how research, education and training drives innovation, and how it all comes together to support a competitive, world-class industry which provides high-tech, highly-paid jobs for the coming generation of Manitoba youth.

"As a leader in the Canadian post-secondary system, I developed a strong understanding of globalization, the rise of the knowledge economy, what it takes for industry to be competitive, the importance of research and development, and how innovation drives the productivity improvements Canada needs," he says. "A big part of the innovation and productivity solution for industry is having a high-quality workforce, and creating that workforce is a major part of the college's mission.

"The aerospace sector is one of the strategic sectors that RRC focuses on, and is one of the college's largest partners. While at RRC I worked with most of the aerospace companies and all the major supporting partners and agencies at all levels of government, at the universities, at Apprenticeship Manitoba and in the trade and professional associations."

Paul Heide, former president of the Manitoba Aerospace Association, was thrilled to have Webb take over the role.

"Red River College is an integral educational partner and training facility for the aerospace industry," he says. "We are delighted to welcome Ken and look forward to his knowledge and ideas."

Webb says Manitoba is well positioned to excel in the aerospace industry.

"We (MAA) tend to collaborate much more than we compete," he says. "We're big enough to play on the world stage, and small enough to get all the private and public sector leaders around a single boardroom table. We work together to build a strong industry.

"It also helps that the world's aerospace markets are expanding, and much like the Manitoba economy in general, we are diversified across a broad range of aerospace activities, so that challenges in one area can be offset by opportunities in another."

U OF M, RED RIVER COLLEGE

Continued from Page 10

StandardAero uses the equipment a few days a week and Red River students have access a few days per week. Other aerospace and manufacturing companies can also have access. "We all benefit," says MacDonald. "It's all been very busy and very exciting. We have a great partnership with StandardAero."

As a result, RRC graduates are coming to their jobs with great confidence, he says. "They are walking into their workplaces able to help companies understand what's possible."

Aerospace is an area where engineers have many opportunities to meet technical challenges and make a difference.

Phase one of CATT focused on automated laser-welding, cutting and cladding of components with complex geometries and gas vapour phase cleaning and coating of gas turbine engine parts. Phase two was an expansion to add automation, including robotics and rapid prototyping for plastics. Phase three, still under consideration, will add rapid prototyping for metals.

Students from a number of programs will benefit from the industrial campus, including Mechanical Engineering Technology, Manufacturing Technician, Composites and Manufacturing, and Technology Management programs.

CATT has been recognized with two awards: the Manitoba Aerospace All-Star Award 2010 from the Manitoba Aerospace Association, and the John Convey Innovation Award 2011 from ASM International and ASM Canada Council.

RRC has also opened a second industrial campus called the Centre for Non-Destructive Inspection (CNDI). This one is in partnership with Magellan, StandardAero and the Composites Innovation Centre and involves laser ultrasonics, x-ray tomography and other cutting edge technologies.

Red River College's Aviation and Aerospace Strategic Council meets three times a year to discuss industry changes and how to keep programs relevant. RRC, through the Manitoba Aerospace Human Resources Council, provides companies with training for their existing employees.

MANITOBA AEROSPACE

Where Vision Takes Flight

Thank You to our Members and Partners

MEMBER COMPANIES

ACS-NAI Ltd.
Advanced Composites Structures
Aero Recip (Canada) Ltd.
Allied Wings — Canada Wings Aviation Training Centre
Argus Industries Ltd.
Boeing Canada Operations Ltd.
Cadorath Propeller
Canadian Propeller
Carlson Engineer Composites
Composite Technology Inc.
Cormer Group Industries Ltd.
Custom Steel Manufacturing
Dynamic Machine
Enduron Custom Inc.
FastAir Executive Aviation Services
Flightcraft Maintenance Services
Keewatin Air
Magellan (Bristol) Aerospace
Micropilot
StandardAero
Standard Manufacturers Services

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Manitoba Aerospace Human Resources Council
Manitoba Entrepreneurship Training & Trade
Red River College — Stevenson Campus
World Economic Diversification Canada

Greetings from the Honourable Lynne Yelich

Minister of State for Western Economic Diversification

I am pleased to extend greetings to everyone celebrating Aerospace Week in Manitoba.

Manitoba is home to the largest aerospace industry in Western Canada and the third largest in the country. The industry is a major contributor to the Canadian economy with revenues exceeding $1.6 billion annually.

Our Government recognizes the strategic importance of Manitoba's aerospace sector to creating jobs, growth and prosperity. Western Economic Diversification Canada (WD) has supported several projects that have solidified Manitoba's place on the world stage of aerospace excellence:

- Advanced Technologies for the Aerospace industry including the engine testing and research facilities at Glacier/EnviroTREC located in Thompson and the WestCaRD testing facilities in Winnipeg. Together the work carried out at these two facilities will position Manitoba as a world leader in cold weather testing.
- Centre for Non-Destructive Inspection Technologies (CNDI) – provided industry with access to specialized non-destructive inspection equipment for training and technology adoption purposes.
- Centre for Aerospace Training and Technology (CATT) – enabled Red River College to create an off-site industrial campus and provide industry with a hands-on training environment.
- Composites Innovation Centre – home of the advanced composite development initiative, which assists companies in developing and commercializing new composite materials and technologies.

On behalf of the Government of Canada, I would like to offer my best wishes to the Manitoba aerospace industry for a successful week. I look forward to our continued collaboration and combined efforts to 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 ravie de saluer toutes les personnes qui participent à la Semaine de l'aérospatiale au Manitoba.

L'industrie de l'aérospatiale du Manitoba est la plus grande de l'Ouest canadien et la troisième en importante au pays. Cette industrie, qui génère plus de 1,6 milliard de dollars de revenus annuels, contribue énormément à la vigueur de l'économie canadienne.

Notre gouvernement est conscient de l'importance stratégique que revêt le secteur de l'aérospatiale du Manitoba dans la création d'emplois, la croissance et la prospérité. Diversification de l'économie de l'Ouest Canada a soutenu plusieurs projets qui ont renforcé la position du Manitoba sur la scène internationale de l'excellence en aérospatiale.

- Des technologies de pointe destinées à l'industrie de l'aérospatiale, y compris les installations de recherche et de mise à l'essai de moteurs d'EnviroTREC/Glacier, à Thompson, et le centre d'essais de WestCaRD à Winnipeg. Les travaux accomplis dans ces deux installations permettront au Manitoba de devenir un chef de file des essais par temps froid.
- Centre for Non-Destructive Inspection Technologies – il permet à l'industrie d'avoir accès à un équipement spécialisé d'inspection non destructive aux fins de formation et d'adoption de technologie.
- Centre de formation et de technologie en aérospatiale – il s'agit d'un campus industriel du Collège Red River offrant un lieu de formation pratique à l'industrie qui est situé à l'extérieur du collège.
- Composites Innovation Centre – il est le siège principal de l'initiative de mise au point de composites de pointe, qui aide des entreprises à concevoir et à commercialiser de nouveaux matériaux composites et des technologies des composites novatrices.

Au nom du gouvernement du Canada, j'adresse tous mes vœux de réussite à l'industrie de l'aérospatiale du Manitoba durant cette semaine spéciale. Je compte poursuivre notre collaboration et nos efforts collectifs en vue de renforcer le secteur de l'aérospatiale tant au Manitoba que dans l'Ouest.

Ensemble, nous travaillons à renforcer l'Ouest pour édifier un Canada plus fort.

BIG PLANS, HIGH HOPES

Continued from Page 2

Training and education are also important components in the aerospace economy. There is a wide variety of careers available, including engineering, engineering technicians and technology, test program specialists, CNC operators, welders and other skilled trades, composite fabricators, quality assurance inspectors, international business, sales and marketing and project managers.

For career links check out; http://www.manitoba-aerospace.mb.ca/careers/index.html

Established in 1992, the Manitoba Aerospace Human Resources Council (MAHRC) assists industry and educational institutions to develop and deliver training for existing and prospective employees. Partnering with federal and provincial departments and industry, MAHRC co-ordinates the development and delivery of training to meet the needs of local aerospace companies.

Since 1992, the federal and provincial governments and industry, in partnership, have invested millions in Manitoba aerospace training programs. The results have been remarkable, with more than 1,150 courses created and more than 7,500 persons trained.

"Major companies are fostering links with Winnipeg schools such as Tec Voc and Murdoch MacKay as well as with colleges and universities," says Webb. "There is an Aerospace Ambassador program which sends industry people into schools to explain what they do and answer questions about future careers in the aerospace industry."

He also notes the University of Manitoba has a strong engineering school and has recently created a second engineer in residence position with a focus on engine technology and testing.

Wendell Wiebe, Executive Director and general manager of the Manitoba Aerospace Human Resource Council, now celebrating its 20th birthday, says he has no doubt aerospace has a healthy future.

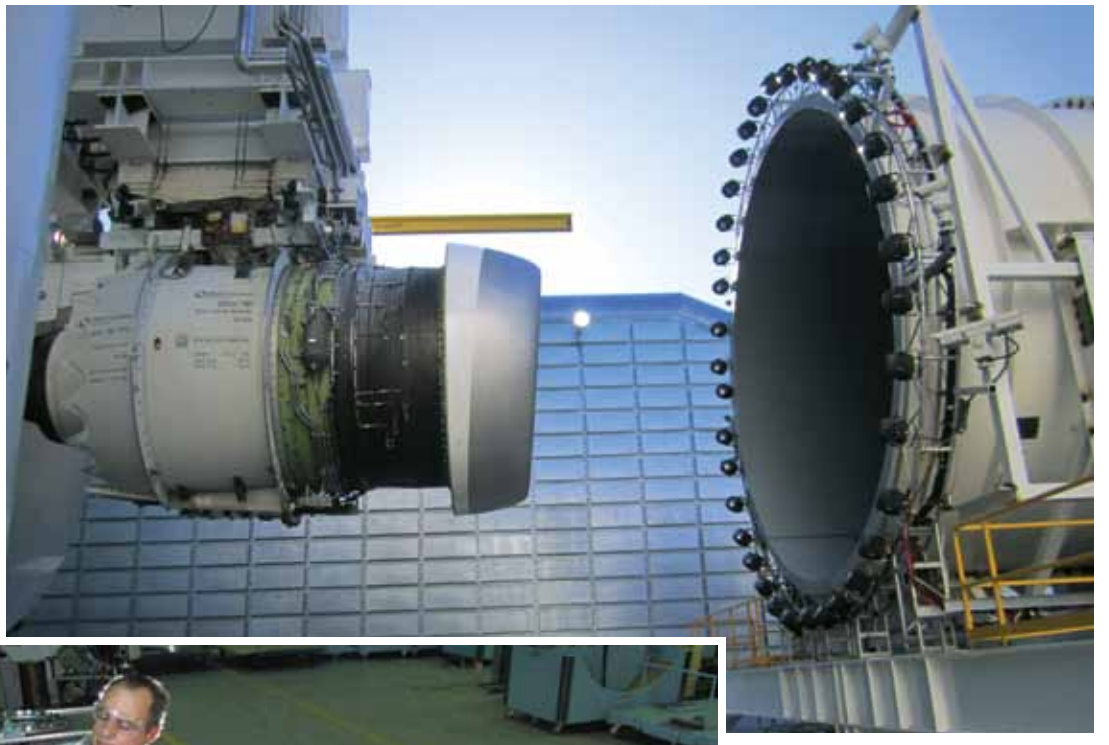
"It's estimated 30,000 new planes will be needed in the next two decades," he says. "These will come from Boeing, Airbus, Bombardier and others as travel demand grows in emerging economies. This is a major challenge and opportunity for many Manitoba companies, whether supplying components for new aircraft or maintaining and overhauling them."

Wiebe says encouraging youth to enter the industry as older members retire will be important so that skills can be passed on. In addition, he says local companies need to add value and stay highly competitive which is why they are promoting the Competitive Edge Supplier Development program, based on a British model.

Assessors benchmark a company against the best. Companies enrolling in the program benefit from a robust and systematic program to develop and improve their company as a supplier. Help includes:

- Training and coaching support
- Assignment of a mentor from a large company in the industry
- Frequent process assessments to keep motivation on track

So far Wiebe says the program is proving very successful and keeping suppliers on their toes.



The Manitoba aerospace industry boasts two of the world's most advanced engine testing and certification facilities (above). Left, a nozzle inspection for the A380 Air Bus is conducted at Bristol Aerospace in Winnipeg.

Winnipeg's aerospace sector is one of the fastest growing in Canada, with revenues growing by 47 per cent between 2005 and 2010.

Key Facts on Canada's Aerospace Industry

Global demand in aircraft is growing at an accelerated pace, as fleets age and rising economies in India, China, the Far East and other places create new air travellers.

Over the next 20 years, this demand will represent a need for more than 30,000 new aircraft and a market opportunity of three trillion ($3,000 billion) dollars. Making the right choices now and forging solid partnerships will allow Canada to build on its competitive edge in aerospace. The Canadian aerospace industry is poised to grow its market share through the optimization of research and development spending and the timely commercialization of technological breakthroughs. The Manitoba industry is a good example of this.

Thanks to outstanding aerospace innovators, solid R&D partnerships with governments, academia and the extraordinary talent of our workers, Canada has traditionally punched above its weight in aerospace and is positioned to do so into the future.

Consider this:

- The Canadian aerospace industry is composed of more than 400 firms located from Newfoundland to British Columbia. It generates in excess of $23 billion in annual revenues through its global reach.
- Aerospace in Canada is directly responsible for the creation of more than 80,000 value added jobs for Canadians from coast-to-coast.
- Aerospace is a direct and significant contributor to Canada's balance of trade: more than 82 per cent of our output is exported.
- With annual investments of more than $1 billion each year, aerospace is amongst Canada's largest contributors to Canadian R&D activities.
- The Canadian aerospace industry is ranked fifth amongst its global peers. It is a world leader in market segments such as regional aircraft, flight simulators, small gas engines, robotics and satellite technologies, aircraft maintenance, repair and overhaul, and landing gear systems.

BIG DREAMS COME TRUE IN WINNIPEG.

At Boeing Winnipeg, we're proud to be the largest composite manufacturer in Canada and a leading-edge, tier-one supplier to the revolutionary 787 Dreamliner. We're equally proud to be a top employer and vital member of the greater Manitoba community, celebrating more than 40 years of building innovation and opportunity across Canada.

BOEING