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I – INDUSTRY NEWS

AIR DATA

<http://www.airdata.ca>

Adoption of the Air Data JetAir BPS bio-protection system by Midcoast Aviation

The American company Midcoast Aviation, which recently became an affiliate of the Jet Aviation Group, is now offering the Air Data JetAir BPS bio-protection system as an optional installation for operators of Bombardier Global Express XRS and Global 5000 business jets. The Jet-Air BPS bio-protection technology uses cold plasma effects to destroy micro-organisms present in re-circulated cabin air and to almost completely eliminate the ozone in re-circulated air. JetAir BPS has demonstrated its efficiency in destroying a wide variety of bio-contaminants including the smallest viruses, bacteria, spores and fungal micro-organisms, specifically the H5N1 virus of avian flu.

BELL HELICOPTER TEXTRON CANADA

<http://www.bellhelicopter.textron.com/>

20th anniversary celebration

On September 21, 2006, Bell Helicopter Textron Canada Limitée (BHTCL) celebrated the 20th anniversary of its Mirabel factory. The event was held in the new 3,700 m² hangar in the presence of Messrs. Jacques St-Laurent, President of BHTCL, Jean Charest, premier of Québec, the Honorable Michael Fortier, Federal minister of Public Works and Government Services Canada, Mike Redenbaugh, president and chief operating officer of Bell Helicopter, as well as the 2,000 employees of the company and several aerospace industry partners. After 20 years of operations at Mirabel, BHTCL has an impressive track record with more than 3,200 helicopters developed and assembled at Mirabel.

BOMBARDIER

<http://www.bombardier.com>

Order for 19 CRJ900 regional jets

Bombardier Aéronautique has sold 19 Bombardier CRJ900 regional jets to My Way Airlines, based in Vivence, Italy. If Bombardier launches the CRJ900X

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program, 15 aircraft from this firm order will be converted into this model. The estimated contract value is US\$702 million.

Transport Canada certification for the Bombardier Challenger 605

During the 2006 NBAA Annual Meeting and Convention, held in Orlando, Florida, Bombardier Aéronautique announced that Transport Canada has approved the new Rockwell Collins Pro Line 21 avionics suite and the passenger window modifications for the latest generation Challenger 605 widebody business jet. Approvals from other regulatory agencies should soon follow, paving the way for service introduction in the third quarter of 2007.

Delivery of the 100th Challenger 300 business jet

On October 27, 2006, Bombardier Aéronautique announced that it has reached an important milestone when it delivered the 100th Challenger 300 business jet to Gutmen Investment. Since its entry into service in January 2004, the Challenger 300 has rapidly become one of the most popular and reliable business jets. The first true super-midsize business jet, it has transcontinental range, increased long range cruise speed, and a comfortable cabin accommodating 8 passengers.

Order for 36 Bombardier CRJ900s from Northwest Airlines

Bombardier Aéronautique has announced that Northwest Airlines has ordered 36 Bombardier CRJ900 regional jets and taken options on 96 additional aircraft, for a total of 132 if all the options are exercised. The order is subject to Northwest Airlines receiving approval from the United States Bankruptcy Court, Southern District of New York. The value of the order at current CRJ900 list prices is approximately \$US1.35 billion and could be as high as \$US5.18 billion if all the options are exercised.

CAE

<http://www.cae.com>

Three orders for full-flight simulators

CAE has won contracts totalling \$45 million for the supply of three full-flight simulators: a Boeing 737NG for Continental Airlines, an Airbus A320 for Lufthansa Flight Training (LFT) and a Boeing 747 for United Parcel Service (UPS).

The B737NG simulator will be fitted with a CAE Tropos II Enhanced visual system and will be delivered to the Continental Airlines training centre in Houston, Texas, during the summer of 2007. The A320 simulator for Lufthansa Flight Training is the 26th full-flight simulator that the Lufthansa group has ordered from CAE since 1980. Installation at the Lufthansa training centre in Vienna, Austria, is scheduled for the summer of 2007. The order from UPS for a B747 simulator represents the

first time this company has ordered a new full-flight simulator from CAE. CAE will also supply a range of CAE Simfinity procedures trainers to UPS with this simulator, with deliveries taking place in the fall of 2007.

Orders for six more simulators

CAE has received orders for six more full-flight simulators: an A320 for Prescient Systems & Technologies, a member of the Singapore Technologies Engineering group, and five Level B Boeing 737NG simulators for Ryanair. CAE has also won orders from several airlines and equipment manufacturers for the supply of CAE Simfinity procedures trainers and for the upgrade of simulators notably the visual systems and avionics. The value of these contracts exceeds \$65 million. With these new orders, CAE has announced the sale of 19 full-flight simulators in the 2007 fiscal year.

In six years, Ryanair's fleet will comprise more than 230 B737NG aircraft. To keep pace with its growth rate and the attendant increase in training requirements, CAE will deliver a Level B B737NG simulator to Ryanair every year between 2008 and 2012. These simulators will be upgradeable to Level D standard in the future. The contract also includes options for Ryanair to purchase five additional simulators. Ryanair and CAE also have an agreement for pilot provisioning services under which CAE will supply around 150 pilots to Ryanair in 2006.

Embraer and CAE form a training joint venture

Embraer and CAE have signed an agreement to form a joint venture for global comprehensive training of pilots and ground crew employed by customers who purchase Embraer's Phenom 100 and Phenom 300, the new "very light" and "light" business jets. The initial training will be delivered at the CAE SimuFlite training centre in Dallas, Texas, beginning with the entry into service of the Phenom 100 in 2008. The companies plan to expand this joint venture to Western Europe and the Eastern United States.

CAE and Embraer will work together to develop courseware and the team of instructors. CAE will design and build full-flight simulators for the Phenom training program, which will also draw on CAE Simfinity technology and systems.

CMC ÉLECTRONIQUE

<http://www.cmcelectronics.ca/>

The PilotView Electronic Flight Bag on the Challenger CL-604

Montréal-based ABC Completions has obtained a Supplemental Type Certificate (STC) for the installation of the CMC Électronique PilotView Electronic Flight Bag (EFB) in a Challenger CL-604 business jet. In 2005, ABC Completions obtained an STC for installation of the CMC Class 2 EFB in a Global Express.

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PilotView EFB selected by Sino Swearingen

The CMC Électronique PilotView Electronic Flight Bag (EFB) has been selected by Sino Swearingen Aircraft Corporation as a standard option on its SJ-30 business jet. The PilotView system will provide information such as en-route and approach charts, moving maps and real-time weather conditions.

TSO certification for the new CMC flight management system

CMC Électronique has received a Technical Standard Order (TSO) from the FAA for its new CMA-9000 Flight Management System (FMS), fitted with a Global Positioning System (GPS). The CMA-9000 FMS has been selected by Pilatus for its PC-21 turboprop training aircraft, as well as by Thales for its avionics suite in the Sukhoi SuperJet 100.

CS COMMUNICATION & SYSTÈMES CANADA

<http://www.c-s-canada.ca>

Development of application software for the Pratt & Whitney Canada PW617

Based on the experience it has acquired on other engine models, CS Communication & Systèmes Canada has received a mandate from Pratt & Whitney Canada to develop and verify the control software embedded in the FADEC for the new PW617F engine. This engine will power the new Embraer Phenom 100 very light business jet. CS Canada is a specialist in the design and verification of airborne software in accordance with the DO-178B standard, Levels D through A.

HÉROUX-DEVTEK

<http://www.herouxdevtek.com/>

\$8.6 million order from the U.S. military

Héroux-Devtek's landing gear division has been awarded contracts for landing gear components, mainly from the United States Air Force (USAF) for the C-130, B-1 and B-52 aircraft. These new orders are in addition to similar ones awarded in January 2006. Production will take place over the next four years and deliveries should begin during the 2008 fiscal year.

L-3 MAS

<http://www.mas.l-3com.com>

Award of a new mandate from Boeing for the U. S. Navy

On October 24, 2006, during an event to celebrate the 20th anniversary of the CF-18 in-service support contract from the Canadian Department of National Defence, L-3 MAS announced a firm, fixed price \$US7.5 million

contract from the Boeing Company for the repair of 32 external wing skins for U.S. Navy F/A-18 aircraft.

MECHTRONIX

<http://www.mechtronix.ca>

2006 "Business-to-Business Products and Services" award

Mr. Fernando Petruzzello, president of Mechtronix Systèmes, has been awarded the 2006 Ernst & Young "Business-to-Business Products and Services" award. Mr. Petruzzello is one of the founders and the chairman of the board of Mechtronix Systems. He reoriented the direction of the company in 1994, transforming it from engineering consulting to a specialist in the design and manufacture of intelligent machines, specifically flight simulators and flight training devices.

PRATT & WHITNEY CANADA

<http://www.pwc.ca>

Appointments

Pratt & Whitney Canada has announced the appointment of Mr. John Saabas to the position of executive vice-president and Mr. Benoît Brossoit as senior vice-president, Service Centres and Operations.

Mr. Saabas will be responsible for engineering, operations, quality, the service centres, product support, customer relations and marketing. He was previously senior vice-president, Engineering and Operations, and has worked for Pratt & Whitney Canada since 1985.

Mr. Brossoit, who will report to Mr. Saabas, will be responsible for providing strategic direction for the service centre network and for global manufacturing operations and supply chain management. Mr. Brossoit has been with Pratt & Whitney Canada since 1995, and was previously vice-president, Service Centres.

Blackhawk Modifications improves aircraft performance with new Pratt & Whitney Canada PT6A engines

Pratt & Whitney Canada (P&WC) has signed a five-year agreement with Blackhawk Modifications of Waco, Texas, for 550 new PT6A engines under P&WC's Converter Enhancement Program (CEP). Under the terms of this agreement, Blackhawk Modifications will use these turboprops in its various upgrade programs for Raytheon King Air, Cessna Conquest I and Piper Cheyenne aircraft under Supplemental Type Certificates (STC). The company anticipates obtaining STCs for the engines of several additional aircraft types in the next few years.

P&WC's Converter Enhancement Program (CEP) authorizes modification and conversion centres such as Blackhawk Modifications to buy new engines and install

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them in any aircraft type. Operators thus benefit from additional power and higher climb and cruise speeds, all with minimum changes to the aircraft airframe.

First flight of PW617F engine

Pratt & Whitney Canada has announced that its PW617F engine, selected by Embraer to power its Phenom 100 Very Light Jet (VLJ) has made its first flight installed on the Boeing 720 flying test bed aircraft. This represents a major milestone in its development program. Certification of the PW617F is scheduled for the fourth quarter of 2007.

The PW210 makes its first ground test run

Pratt & Whitney Canada has made the first test run of its new generation PW210 turboshaft engine. The PW210 is a new generation turboshaft in the 1,000 shp category, for single and intermediate/medium, twin-engined helicopters. Launched in February 2005, the first model of the family, the PW210S, will power the new Sikorsky S-76D helicopter intended for use by corporate, offshore oil, medevac, airline and government operators.

TURBOMECA CANADA

<http://www.turbomeca.com>

Expansion

Turbomeca Canada has added 205 m² of additional space at its Mirabel facilities in order to respond to growing demand. By year-end, Turbomeca Canada will have worked on almost 220 engines and anticipates assembling more than 300 engines per year between now and 2008/2009.

II - TECHNOLOGY

How far can MEMS go?

The Massachusetts Institute of Technology has pushed the envelope in the fabrication of a mini gas turbine engine, whose size is about the same as a 25¢ coin, by using Micro-Electrical-Mechanical Systems (MEMS) technologies. This exploratory project has been financed by the U.S. Army Research Laboratory with the goal of producing a motor-generator assembly with a ten times longer life than a battery of the same weight. So far, MIT has manufactured all of the components using electro-chemical machining of silicon chips. These components include the compressor, combustion chamber, turbine and generator. A cooling circuit is incorporated. By year-end, MIT hopes to have succeeded in building a functioning stack of the six chips required to construct the motor-generator.

Progress in rapid prototyping

MMB, a French SME, has achieved tolerances as low as 50 microns on surfaces treated by powdered metal laser fusion, allowing the realization of small production runs. The company is using laser fusion machines made by the German company MCP. The process was conceived for stainless steel and has now been extended to cobalt-chrome, titanium alloys (TA6V) and inconel.

Printed circuits using an ink jet printer

The idea has been floating around for many years. Now, the Rensselaer Polytechnic Institute of Troy, New York, has succeeded in developing a chemical process for placing carbon nanotubes in suspension. Carboxyl molecules are grafted onto the nanotubes and dispersed in water using ultrasonics. The concentration is then homogenized before being placed in an ink jet cartridge. However, in its current stage of development, the same pattern must be re-printed several dozen times in order to obtain adequate conductivity.

The Clean Sky initiative

Airbus, Dassault Aviation, Eurocopter, Liebherr-Aerospace Lindenberg, Rolls-Royce, Safran and Thales are all participating in a joint technology initiative named "Clean Sky". Its goal is to demonstrate and validate technologies identified by the Advisory Council for Aeronautics Research in Europe (ACARE), to realize the following emissions reductions by 2020:

- Carbon dioxide (50% reduction in fuel consumption per passenger-mile);
- Nitrogen oxides (80%);
- Noise (6 dB).

The 7th European Union Research and Development Framework program (FP7), which is currently passing through the approval process, could have a budget of \$2 billion.

Lean manufacturing applied to the repair industry

United Services, a subsidiary of United Airlines, has decided to focus on overhauling components that require advanced capabilities, such as engines, landing gear and specialized components. They have identified 8 types of waste that need to be eliminated and their technicians have historically spent less than half of their time actually working on the components to be repaired. United Services has created kits for all tasks to be performed, in order to avoid lost time and better control parts availability. A kanban task card system has been implemented. The adoption of continuous improvement techniques has also resulted in a 30% reduction in the time required to overhaul engines, and has allowed the company to obtain contracts from external customers.

Information technologies and the supply chain

A study based on relations between five Québec aerospace prime contractors and twenty suppliers each, has demonstrated that the use of information technologies is particularly important to reduce the provisioning coordination costs of less complex

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products. However, information technologies have not resulted in a significant reduction in communication problems because of the distances involved and uncertainty concerning some categories of transaction. (reference: Revue Gestion, volume 31, number 3, fall 2006).

III – INDUSTRY DEVELOPMENT

Global database of suppliers certified to AS 9100

According to the OASIS database, there are 6,300 AS9100-certified suppliers in the world, including forty or so in Québec. This database is interrogated 600 times per hour. It is maintained by the International Aerospace Quality Group (IAQG), with the support of the Society of Automotive Engineers, to allow OEMs to identify suppliers whose quality systems respond to their needs. If you have AS9100 certification, you should be listed in the database (reference: www.iaqg.org).

QUALITY

42 AS 9100 certified companies

Abipa - Aéro Mécachrome - Air Data - Alta Précision - Bombardier Aéronautique - CanRep - CMC Électronique - Composites Atlantic - Flight Dynamics - GE Elano - Générale électrique du Canada - Goodrich - Harrington - Hemmingford Aérospatiale - Héroux-Devtek - Howmet - Honeywell - JSR2 - L-3 MAS - Lavod - Leesta - Lisi Canada Aerospace - MDA Space - Mecachrome Technologies - Mesotec - Messier-Dowty - Metcor - Meyer Canada - MRT Robotic - Pega Précision - Pratt & Whitney Canada - Produits intégrés Avior - Quéloz - RTI-Claro - Sargent Aérospatiale Canada - Sermatech Canada - Sido - Sinters Canada - Sonaca NMF Canada - Teco Précision - Thales Canada - Verdun Anodisation

73 ISO 9001:2000 (2000 version) certified companies

ABB Bomem - Abipa - Air Data - Air Terre Équipement - Almaho - Alta Précision - Amphenol Air LB North America - AP&C Advanced Powders & Coating - Automatech Industrielle - Avena Technologies - Bombardier Aéronautique - CAE (génie logiciel) - CanRep - CEL - Circuits CMR - CMC Électronique - Composites Atlantic - C.P.S. Industries - CS Communication & Systèmes Canada - Deburex - Delastek - Élimétal - Finecast - Flexibulb - Gentner - GGI International - Goodrich - Groupe Meloche - Harbour Industries - Hemmingford Aérospatiale - Howmet - ICT - JSR2 - Lavod - Leesta - Liebherr Aerospace Canada - Lisi Canada Aerospace - Lockheed Martin - LSI Luminescent - L-3 MAS - Marquez Transtech - MDS Aero Support - Mesotec - Metcor - Minicut - MRT Robotics - Oerlikon Contraves - Optimus - Pega Précision - Placeteco - Pôle Air Aviation - Quéloz - Rasakti - Rolls-Royce - Sargent Aérospatiale Canada - Sermatech Canada - Sermati Canada - Shellcast - Sico - Sido - Sinters Canada - Soudure Aérospatiale - SPG Data 3D - Technimeca International - Techspace Aero

Canada - Teco Précision - Terminal & Câble TC - Thermetco - TMH Canada - TNM Anodisation et Peinture - TQF Technologies - Ultraspec - Verdun Anodisation

11 NADCAP certified companies

CP Tech - Howmet - Lego - Metcor - Optimus - Soudure Aérospatiale - Tecnickrome - TNM Anodisation et Peinture - Ultraspec - Vac-Aéro - Verdun Anodisation

If your company has received ISO, AS or NADCAP certification, but does not appear on this list, please let us know.

IV - MANPOWER AND TRAINING

Innovation challenge

How can I make my company more innovative? How can I make my employees more innovation oriented? To help you answer these questions, the MDEIE has recently made available a series of management tools that allow you to undertake a systematic approach to innovation, while also minimizing risk.

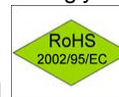
The process recognizes that production workers and customers can be a source of innovation, and for all the functions within the company such as product development, marketing and human resources. It is a simple approach that breaks up the process into seven major stages including the product development stage, as disseminated by the Product Development Institute, (equivalent to Stage Gate in the United States). For additional information, you can contact Mr. Normand Raymond at 514-499-6535.

Eco-design standards

You will increasingly see the following symbols



and



on mass-produced electrical and electronic equipment. The garbage can indicates that a recycling process has been developed to recover materials, while the RoHS symbol confirms that the product does not contain hazardous substances such as lead, cadmium, hexavalent chrome, mercury and bromine-based fire retardant. Europe has implemented the DEEE 2002/96/CE (garbage can) and 2002/95/CE (RoHS) directives. China will start down the same path in 2007, and the United States is expected to follow. The directives cover test equipment, but avionics are exempt at the moment, although EADS is applying them voluntarily.

Manufacturers must thus develop methods to extract materials for recycling, and control the proportion of materials in all components, as well as the reliability of the product, which will impact selling prices. CRIQ offers

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services for evaluation of the reliability of electronic circuits using lead-free solder. For additional information, contact Mr. Normand Raymond at 514-499-6535.

CENTRE TECHNOLOGIQUE EN AÉROSPATIALE

<http://www.aerospatiale.org/>

Grant of \$1.5 million for CTA from the Québec government

The mandate of the Centre technologique en aérospatiale (CTA), an educational centre specializing in the transfer of technology to industry, has been renewed for a period of five years by the ministère de l'Éducation, du Loisir et du Sport (MELS). This renewal comes with an annual operating grant of \$300,000 accorded by the Ministry of Economic Development, Innovation and Export Trade (MDEIE) and MELS. The CTA's expertise includes high performance machining, the application of composite materials, photogrammetric inspection and prototype manufacturing.

ÉCOLE NATIONALE D'AÉROTECHNIQUE

<http://www.collegeem.qc.ca>

Memorandum of understanding between ÉNA and Directions Finningley of Doncaster, England

The École nationale d'aérotechnique (ÉNA) of collège Édouard-Montpetit has signed a memorandum of understanding with Directions Finningley, an organization dedicated to manpower development for the Doncaster-Sheffield Robin Hood airport in England. This collaboration between British aerospace training organizations and ÉNA aims to encourage the mobility of students and teacher exchanges, share knowledge, expertise and technical documentation and develop common training approaches. Graduates from both sides of the Atlantic will be able to practice their technician trade in both European and Canadian organizations.

V – SHOWS, EXHIBITIONS, MISSIONS AND SYMPOSIA

MINISTERIAL AEROSPACE MISSION TO FRANCE

The Minister of Economic Development, Innovation and Export Trade, (MDEIE), Mr. Raymond Bachand, will lead an aerospace industrial mission to France. The mission will take place between January 28 and February 1, 2007, and participants will visit the three primary French aerospace regions; Paris, Midi-Pyrénées (Toulouse) and Aquitaine (Bordeaux). For additional information, please contact Mr. Charles Dieudé at 514-499-6535.

QUÉBEC AEROSPACE ASSOCIATION (AQA)

<http://www.aqa.ca>

AQA news

- The first supper meeting of the year took place at the Ritz Carlton hotel in Montréal on September 20, 2006. More than 300 people attended. The invited speakers were Mr. Raymond Bachand, Minister of Economic Development, Innovation and Export Trade, Mr. Ronald T. Covais, president, the Americas, of Lockheed Martin Corporation, Mr. Gilles Labbé, president of Héroux-Devtek, Mr. Guillermo Alonso Jr., president of Alta Precision, and Mr. Eduardo Minicozzi, president of Minicut International.
- The second supper meeting of the year took place at the Ritz Carlton hotel in Montréal on October 24, 2006. More than 280 people attended. The invited speaker was Mr. John A. Lockard, president of the Precision Engagement and Mobility Systems division of Boeing.

CONTACTING US

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