L'AÉROSPATIAL

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I - INDUSTRY NEWS

ADACEL TECHNOLOGIES CANADA

* *2D Simulator*

Adacel Technologies is a software engineering company which specializes in simulation and operational training technologies used in air traffic control. The company has received an order from Oslo Lufthavn As, a subsidiary of the Norwegian Civil Aviation Agency, to upgrade the 2D air traffic control tower simulator located at Oslo's Gadermoen airport.

AD OPT TECHNOLOGIES

http://www.nserc.ca/seng/adoptf.htm

* *New contract*

London-based National Air Traffic Services (NATS), has purchased AD OPT Technologies' ShiftLogic software for scheduling employee work shifts. NATS provides the majority of the British air traffic control services and has more than 5,000 employees.

AIR DATA

http://www.airdata.ca

* *New contract from Bell Helicopter Textron*

Air Data has been awarded a contract by Bell Helicopter Textron for the development and supply of a new generation of Air Data computer for use on the Bell 427. The unit will provide altitude information as well as indicated/true airspeed and Mach number. The unit also provides the VNE (never exceed speed) data used to control the yaw pedal restrictor system. Air Data will use the latest technologies in pressure sensing and computing to reduce the size of the unit and achieve a high reliability. The first aircraft installation is scheduled for the third quarter of 1999.

* *Investment*

Technology Partnerships Canada (TPC) has made an investment of $147,608 in Air Data Inc. The funds will contribute to the development of a "breakthrough" data communications system which will enable operators of aircraft fleets to know the exact location of their aircraft and communicate in real time.

ALTA PRÉCISION

* *Expansion*

Alta Précision, which specializes in high precision machining of components for aeronautical systems has recently expanded its Anjou

facility and purchased two new CNC 4-axis machining centres which can process components up to 3 m long.

ALLIEDSIGNAL AEROSPACE CANADA

http://alliedsignal.com

* *Appointment*

- Mr. David O'Blenis has been appointed President of AlliedSignal Aerospace Canada, headquartered in Mississauga, Ontario. He will also serve as Chairman of AlliedSignal Canada Inc.

AVCORP INDUSTRIES

* *Boeing orders*

Avcorp Industries has signed three contracts with Boeing totalling more than $6 M. They cover flight attendant partitions for wide and narrow body aircraft, stanchion assemblies for the B757 and engine strut fairings for the B737 Next Generation

* *Bell Helicopter Textron orders*

The Metal Products Division has also been awarded a $400,000 contract for sheet metal sub-assemblies for the Bell Helicopter Textron 212 and 412 helicopters.

* *Airbus contract*

Avcorp has signed an agreement with Fischer Advanced Composites Components GESmbH in Reid, Austria, for the supply of Ram Air Turbine Doors for the Airbus 318/319/320/321 Aircraft programs. The contract, valued at $1.3 M, will require 22 shipsets per month, commencing in August, 1999 at the Company's Metal Products Division in Laval.

BOMBARDIER

http://www.bombardier.com

* *Continental*

Bombardier has formally launched the Continental. It is a transcontinental business jet which combines speed, comfort and low operating costs. It is also suited for operations from small airports (5,000 ft runways). To optimise the design and accelerate development and service entry, which is scheduled for the end of 2002, Bombardier will use contemporary technologies such as CATIA and Computational Fluid Dynamics (CFD).

* *Expansion at Dorval*

Bombardier will invest more than $30 M in a new 200,000 sq ft hangar at the Dorval delivery centre. It will accommodate the new CRJ-700 and allow an increase in the delivery rate of the CRJ-200.

* *CRJ-700*

The first flight of the Bombardier CRJ-700 took place in May 1999 from Dorval. Certification flight-testing will be carried out from the Wichita (Kansas) flight test centre. The CRJ-700 is a derivative of the 50-seat CRJ and offers improved operating economics while allowing adjustment of capacity to meet market demand.

* *CRJ*

Midway Airlines: conversion of options for three CRJs valued at $98 M.

SkyWest Airlines: conversion of options for 10 50-seat CRJs, valued at $337 M, raising this airline's firm orders to 45.

* *Certification of the Global Express*

Bombardier Aerospace has received Type Certification from the European Joint Aviation Authorities for the Global Express. This is the last major development program milestone prior to customer delivery.

Bombardier Aerospace is also continuing its Reduced Vertical Separation Minima (RVSM) program. The Learjet 45 and Global Express, both completely new designs, have been certificated to the most recent regulatory standards, later standards than their respective competitors.

* *Challenger operator training*

Bombardier Aerospace has launched its Smart Training program which is available to all Challenger operators. With a monthly fee of as little as $249 over three years, participants will have access to unlimited maintenance training. They will have the right to attend courses at Bombardier training centres in Montreal and Tucson as often as they wish. Bombardier is studying the possibility of launching similar programs for the Learjet 45 and Global Express.

* *New facilities at Belfast*

Bombardier Aerospace has inaugurated a new 2.4 million pound Product Logistics Centre at its Belfast factory. The centre will receive components from manufacturers and suppliers and route them to the final assembly lines in the adjacent production facilities.

* *The European market*

Bombardier continues its penetration of the European market. It has sold all of its business jet models, the Learjet 31, Learjet 60, Learjet 45, Challenger 604 and Global Express. The company sold 24 business aircraft in the European market in the fiscal year ended January 31, 1999, compared with 16 in the previous year.

CAE ÉLECTRONIQUE

http://www.cae.ca

* *Orders for simulators and MaxVue systems*

CSA Czech Airlines: a full flight simulator and MaxVue Plus system for the Boeing 737.

American Airlines: a full flight simulator for the Boeing 737-800. Delivery is scheduled for April 2000.

Delta Air Lines: a full flight simulator and a flight training device for the Boeing 737-800. Delivery is scheduled for February 2000.

Flight Safety Boeing Training International: a contract to develop a full flight simulator (including a MaxVue Plus system) coupled with a maintenance training simulator for the Boeing 767. The new simulator will be installed at the Seattle Training Hub.

* *C-5B training system*

CAE has obtained a $26.5 M contract for a weapon system trainer to be used for training crews of the United States Air Force C-5B Galaxy transport aircraft. The system will be manufactured in Montreal. CAE anticipates an order for at least one additional system in the near future, which would raise the quantity of these systems sold by CAE to the United States military to nine (9).

CENTRE PROTOTECH

http://www.prototech.polymtl.ca/vf.html

The "centre Prototech", sponsored by the École polytechnique de Montréal, is a research laboratory available for use by SMEs. It specializes in rapid prototyping and tooling technologies, and virtual prototyping whose objective is to speed up the development cycle of products and industrial processes. Canada Economic Development (CED), and the Québec Ministry of Industry and Commerce have provided financial support to the start-up of the centre. They have made equal contributions to its financing totalling of $3 M over three years.

CRÉ-O-PACK

Cré-O-Pack is a packaging specialist. The company designs and manufactures non-standard packaging containers for the shipment of aircraft parts. Every part requires a different configuration, based on its dimensions and weight, the mode of transport used to ship it and delivery time. It is also uneconomic to hold non-standard containers in reserve. In response to these needs, Cré-O-Pack has developed eight types of logical configurations of container, which can be easily adapted to meet specific needs. The company uses specialized software to design the containers according to customer requirements. Cré-O-Pack has a contract with Bombardier Aerospace which commenced more than a year ago.

EMS TECHNOLOGIES

http://www.ems-t.com/

* *Wireless Internet technology*

As part of the ARCS (Astra Return Channel System) commercial project, EMS will supply a new satellite communication technology to Nortel Networks which will offer bidirectional Internet access. The requirement includes very high bandwiths, given the multimedia content on the Internet

The contract includes:

- multiple access modems,
- ground test facilities which simulate communications between the satellite and the ground,
- interface prototypes for the Nortel Networks network.

* *Amphitech*

EMS has signed a $700,000 contract with Amphitech International, of Blainville, for the supply of two prototype radar antennas with options on 100 flight-worthy production units. EMS will design, manufacture and test the two units, which form part of a new obstacle detection system for helicopters.

LOCKHEED MARTIN CANADA

http://www.lmco.com

* *VISTA*

Lockheed Martin Canada has received a $2 M subcontract from Lockheed Martin Federal Systems (LMFS) for the development and delivery of PC-based maintenance procedures trainers for systems installed on U.S. Virginia class submarines.

Lockheed Martin Canada's VISTA (Visual Interactive Simulation Training) will be used to emulate selected submarine combat system components.

* *Aurora update*

Lockheed Martin Canada has received a $1.3 M contract from the Department of National Defence for the replacement of magnetic drum memory and related interfaces with semiconductor memory in the OL 504/AYS installed on the CP-140 fleet. This system analyzes acoustic signals received from sonobuoys and converts the analogue sonar signals into digital data for display.

MARCONI CANADA

http://www.marconi.ca

* *CMA-3000*

Marconi Canada has received a contract from Eurocopter for 15 CMA-3000 Flight Management Systems (FMS) for Super Puma MK 1 helicopters operated by the Swiss Army. First delivery is scheduled for September 1999, and system integration at Eurocopter will be completed in February 2000.

* *CMA-2400*

As the exclusive antenna supplier to AirTV, Marconi has developed a phased array antenna, the CMA-2400, which is based on the CMA-2102 satcom antenna. CMA-2400 deliveries will begin in mid 2002.

* *AN/GRC-512 (V)*

Marconi Canada has signed a contract with the government of the Republic of Korea for conversion of options for a significant number of AN/GRC-512 (V) radios, the latest generation frequency hopping military system. The total value of all orders and options should exceed $150 M. The initial order has a value of around $11 M.

* *New contract*

Marconi Canada has been awarded a contract of approximately $5 M for the design, development and manufacture of a keyboard/display assembly for the Advanced SINCGARS Improvement Program Radio (ASIP), developed for the U.S. military by the Aerospace/communications division of ITT in Fort Wayne Indiana.

* *Tactical radios*

Marconi Canada has made initial deliveries to the U.S. Navy of band 3 radio sub-systems for the AN/SRC-57 (V) Digital Wide-Band Transmission System (DWTS). As part of the same contract, Marconi has also received two new orders for radios which will be delivered later this year. The total value of these orders for 70 radios is $US5.5 M.

ORIGINALSIM

http://www.originalsim.com

* *Cooperation agreement*

OriginalSim has signed a cooperation agreement with the U.S. Armed Forces Research Laboratories (AFRL) to evaluate the application of the High Level Architecture (HLA) software language which is generated by the company's Osim Framework software. The goal is to design training simulations which use actual combat units or unit simulators originating from different sources and locations (Distributed Mission Training

Osim Framewok reduces the cost and time required to develop simulation applications by 50%, and automates the process of conforming to new industry standards.

* *Alliance with Sparta*

OriginalSim has signed a strategic partnership agreement with Sparta, a specialist in simulation systems used for military training in combat scenarios. Through this agreement, OriginalSim combine its global engineering solutions, which are based on its expertise in modelling and simulation, with Sparta's reputation and presence in the U.S. military market.

PEGA PRÉCISION

* *Partnership*

Pega has recently signed a partnership agreement with U.S. company Micro Craft, allowing it to benefit from the latter's expertise in computer-assisted design, specifically CATIA. The agreement with allow Pega to undertake projects which include design, manufacture and assembly of aerospace parts.

PRATT & WHITNEY CANADA

http://www.pwc.ca

* *Federal support*

The Federal government has announced its decision to invest $155 M in Pratt & Whitney Canada's research programs. The investment, which will

be made during the next six years, is through the Technology Partnerships Canada (TPC) program, and is re-imbursable by payments based on engine sales.

The PTC funds will be used in the following three programs:

- a three year extension of the "Technology Oriented Product" program,
- continued development of the PW308 business jet engine,
- development of a low emission combustion system for industrial engines.

This contribution will allow the creation or retention of around 600 jobs, two thirds of them in Québec.

* *Prizes awarded to five universities*

Pratt & Whitney Canada has awarded five prizes and grants to engineering students in Ontario and Québec. This is the company`s way of recognizing and rewarding their contribution to the development of gas turbine technology in the disciplines of aerodynamics, acoustics and materials, as well as the manufacture and integration of engines.

* *Erratum*

David Caplan has been elected chairman of the General Aviation Manufacturers' Association (GAMA).

SEXTANT AVIONIQUE

http://www.sextant-avionique.com

* *CRJ700*

The CRJ700, currently in flight testing, integrates systems developed by Sextant. Sextant supplied for this new Bombardier aircraft the secondary flight control system, the integrated electronic emergency instrument and the antistall system. Sextant utilized it's new test bench located in the Montréal facility to test, validate and certify the trim and spoilers control systems.

II - INDUSTRY DEVELOPMENT

QUALITY

* *Seventy nine ISO registered companies*

Abipa - Aéronav - Aérotech - Aérosystème International - Airborne - Air Data - Air LB Canada - Air/Terre Équipement - AlliedSignal Aérospatiale - Alphacasting - Alta Précision - Arell - Atelier d'usinage Aéro - Aviation Lemex - Bell Helicopter Textron - Bombardier Aéronautique - Bomem - CAE Aviation - CAE Électronique - CRIQ Essais - CPS Industries - CRL Technologies - Deburex - Delastek - EG&G Optoélectronique - EMS Technologies Canada - Farsound Canada - Finecast - Flexibulb - Fonderies Shellcast - Générale Électrique du Canada - GFI - Godfrey Aérospatiale - Harbour - Harrington - Hemmingford Aérospatiale - Héroux - Hochelaga Aérospatiale - Howmet Cercast - James Dawson - Kvaerner QTC - JLM Précision - Les industries Profab - Les outillages K&K - Les trempeurs d'acier du Québec - Les trempeurs Thermetco - Lockheed Martin Canada - Lucas Industries Canada - Mag-Chem - Marconi Canada - Marquez Transtech - Meloche - Mechtronix Systems - Mésotec - Messier-Dowty -Mil-Quip - Mitec Électronique - MDS Aero Support - Oerlikon Aérospatiale - Optimus - Outils Diacarb - PAM Électronique - Pratt & Whitney Canada - Primetech Électronique - Pôle Air Aviation - Robert Mitchell - Rolls-Royce Canada - Rolls-Royce (GTE) - RPM Tech - Sablage au jet 2000 - Sider-Tech - Sido - Soudure Aérospatiale - TEAM - Technique Design - Technologies industrielles SNC - Terminal & Câble TC - Tribospec - Usinage P.L.

More than 90% of Quebec's aerospace production is generated by ISO 9000 registered companies. If your company is ISO registered, but not on our list, please let us know.

III - TECHNOLOGY

VERY HIGH SPEED LASER

Elia, an ultra-high frequency power laser, will be installed at the University of Bordeaux. The device, called a "femtosecond" laser emits pulses whose duration is in the range of 10 – 15 femtoseconds (femto represents 10^{-15}) at a rate of 1,000 per second (1 kHz). It thus projects a very high number of low energy, short duration pulses, which prevents heating of the material and the resulting deformation. This allows to drill and cut without leaving burrs. Elia has four sponsoring organizations: Thomson-CSF laser (TCL), the European leader in femtosecond lasers and initial partner in Elia, the German company Biotronics, which specializes in bio-artificial implants, the British company Photec, which manufactures light-detecting PMTs (phototmultipliers) and the French company Excitec, which integrates machining lasers into machine tools.

AERONET

French company Sita has developed the AeroNet network, a secure Intranet network, based on the TCP/IP protocol. It allows workgroups to use a common database while located thousands of kilometres apart, and can deliver technical documentation to aircraft maintenance facilities. The Aeronet network is used by Boeing and Rolls-Royce.

CETEX

The fixed leading edges of the Airbus A340-500 and 600 wings made by British Aerospace will be manufactured from a thermoplastic composite material. Use of this material produces a weight saving of 20%, allows optimization of the design of the complete assembly and reduces the number of parts. Composites with thermoplastic resins are more damage tolerant and easier to repair than thermosets, with better control of the repair process. Their preparation is also easier and faster. To develop this new technology, British Aerospace has teamed with the Dutch companies Fokker Aerospace, which is responsible for design and manufacture of the leading edge, and Ten Cate, which developed the Cetex thermoplastic material.

HARDLUBE FOR MACHINE TOOLS

Physical Vapour Deposition (PVD) can be used to apply complex multi-layer coatings to meet very specific and specialized requirements. Hardlube, which is now being marketed by Balzers, is a coating used in dry machining, in particular drilling. It combines hardness (Vickers Hardness of 2,600) high temperature resistance (up to 900°C) and excellent lubricating characteristics (coefficient of friction with dry steel of 0.2). The base coating, comprising titanium and aluminum nitride, provides the hardness and temperature resistance while the surface coating, a composite of tungsten carbide and amorphous carbon, provides the dry lubrication. The coating has a thickness of 2 to 6 micrometres.

LENS PROCEDURE

A new Lockheed Martin factory has commenced operations. It specializes in the manufacture of complex and difficult to manufacture parts using laser-fusion of metal powders. The robotised process, called Lens, results in metal structures made from a single component, compared with hundreds of parts by traditional technologies. The production time is also reduced for complex components, resulting in lower cost and production cycle time.

IV - SHOWS, EXHIBITIONS AND SYMPOSIA

"QUÉBEC SPRING" IN FRANCE

As part of the "Printemps du Québec en France", the aerospace ministerial mission led by vice-premier M. Bernard Landry, took place on April 11, 12 and 13, at Paris and Toulouse. The major Québec prime contractors such as AlliedSignal, Bell Helicopter Textron, Bombardier Aerospace, CAE Électronique, Messier-Dowty (Mirabel), Pratt & Whitney Canada, Sextant Avionique Canada, Rolls-Royce and EMS Technologies attended. In addition, nine SMEs participated in the mission. Participants had the opportunity to attend corporate presentations and to meet and discuss with representatives of several French companies, including some of the giants such as Aérospatiale, Dassault, Snecma, Messier Dowty, Airbus, Sagem, Turbomeca, Labinal, Ratier, Eurocopter, Liebherr, Sextant Avionique, Latécoère, Thomson-CSF Detexis, etc. A total of 170 people participated in the organized activities at Paris and Toulouse resulting in almost 400 individual meetings between French and Québec companies.

FORUM 55 AHS INTERNATIONAL

The annual forum of the American Helicopter Society was held at the Montréal Palais des Congrès between May 25 and 27, attracting 6000 technical people from the helicopter world. This event, which was held outside of the United States for the first time, was a huge success: 40% increase in the number of attendees (5,360 registrants), and 10% increase in the number of exhibitors. Amongst the Québec exhibitors there were several prime contractors, around thirty SMEs at the booth of the Association québécoise de l'aérospatiale, and the aerospace and defence directorate of MIC.

PARIS AIR SHOW – LE BOURGET

The 43rd Paris Air Show was held at Le Bourget from the 12th through the 20th of June.

Québec was represented by prime contractors such as Messier-Dowty, Marconi Canada, Sextant Avionique, Bell Helicopter Textron, Bombardier Aerospace, Pratt & Whitney Canada, EMS Technologies Canada and AlliedSignal, and by 24 SMEs. The vice-premier, M. Bernard Landry, met representatives of several foreign companies and used the occasion to announce several investments in the industry.

A reception was held at the "Délégation générale du Québec à Paris" to emphasize the Québec participation. A meeting was also held between British and Québec companies, thanks to the cooperation of the Society of British Aerospace Companies (SBAC), and the support of the Ministry of Industry and Commerce. Around twenty five British companies attended this event.

CLUB AÉROSPATIAL DINNER-MEETING

- Around 140 people attended the Club Aérospatial dinner-meeting held on May 12. The guest speakers were Mr. René Brasseur, vice-president, Procurement, Bombardier Aerospace and Mr. Philippe Collard, president of Virtual Prototypes.

* *Dates of the next dinner-meetings:*

- 15 September 1999
- 24 November 1999
- 9 February 2000
- 10 May 2000

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* *"L'Aérospatial" is now also available on the MICST web site at:*

http://www.mic.gouv.qc.ca/aerospatiale

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