Advanced Manufacturing Technologies

**Strumming Right Along.** T. Phillips. *Advanced Manufacturing*, Jan./Feb. 2003, p. 23. – Advanced Manufacturing features Garrison Guitars, a St. John’s, Newfoundland manufacturer using advanced manufacturing technologies to produce world-class guitars for people all over the world. Chris Griffiths’ innovative patented Griffiths Active Bracing System and Integrated Blocking System add structural stability systems while enhancing the vibration ability. Advanced technologies used: laser cutting, CNC milling, and robotic on the finishing line.

Read more: [http://www.advancedmanufacturing.com/January03/advanced_manufacturers.htm](http://www.advancedmanufacturing.com/January03/advanced_manufacturers.htm)

**Planning a Plant.** J. Thilmany. *Mechanical Engineering*, February 2003, p. 42. – A digital factory runs just like a real one, only on a computer. It used to take many years for spacecraft to move from the drawing board to the launch pad. Today, that cycle to design and build a satellite has been shortened to years, thanks to advanced in computer-aided design and similar technologies. Time to market continues to drop despite increased complexities in manufacturing. And the market continues to demand even shorter time to market. The digital factory allows manufacturers to simulate factory layout digitally, in order to see how the plant would function under the proposed arrangement and to see where problems might arise in the line.


**Why CAM Isn’t CAD: Some Similarities, More Differences.** J. Rowe. *Advanced Manufacturing*, Jan./Feb. 2003, p. 15. – Ever wonder what the difference is between CAD and CAM? Although major progress has been made to close the gap between CAD and CAM functionality and interoperability, they are still considerably different from each other. This article explains the differences in the features, workflow orientation, and interoperability, including a review of the STEP (Standard for Product Data Exchange).

Read more: [http://www.advancedmanufacturing.com/January03/advanced_design.htm](http://www.advancedmanufacturing.com/January03/advanced_design.htm)
B2B / E-Business in Manufacturing

Useful Web Site: SME E-Business Information Toolkit
http://strategis.ic.gc.ca/SSG/ee00240e.html

Microsoft Outlines Plans for Serving Mid-Market. P. Jakovljevic. Advanced Manufacturing, Jan./Feb. 2003, p. 19. – Last year, Microsoft Business Solutions (MBS, an enterprise applications division of Microsoft Corp., unveiled a product & services strategy aimed at the small-to-medium-sized enterprise (SMEs) applications market. MBS intends to build a common foundation framework on top of its Microsoft.NET framework that will serve as an integration platform for “vanilla” application components.
Read more: http://www.advancedmanufacturing.com/January03/enterprise.htm

Sourcing ERP? Log on to: www.advancedmanufacturing.com and click on the “Advanced Software” link to review, analyze and compare Enterprise Resource Planning (ERP) software.

Ask the Expert (Knowledge-Bases Systems). J. Fallows. Manufacturing Engineer, December 2002, p. 270. – Manufacturers are realizing that one of the most cost-effective ways to improve productivity is to invest in information technology. ERP, and variations on that theme, allow manufacturers to improve the management of the data relating to the manufacturing process. Since Y2K increased the use of ERP, IT projects within companies have broadened to include the whole supply chain. But, the latest IT systems are going one step further, using knowledge-based software to reduce the dependence on highly skilled experts.
(Contact the ITC Library to obtain article)

Affordable IT. C. Boag. Manufacturing Engineer, December 2003, p. 280. – Technology is a must-have purchase for small as well as large companies, but it can be tricky particularly for SMEs. Lack of dedicated IT resources, affordable prices, value and service are elements of concern. The author suggests looking at IT investment as a utility instead of a capital investment. Choose a “pay-as-you-go” model and continually re-evaluate your requirements.
(Contact the ITC Library to obtain article)

Design for Environment

Bridging the Gap Between Design and Manufacturing. H. van der Wildt. Electronic News, 11/25/2002, p. 17. -- Opportunities for design for manufacturability- (DFM) aware tools can help the gap between the chip designers and the manufacturing engineers. The physical constraints caused by chip complexity, small feature size, high speed and low power result in many design, manufacturing and reliability problems. New EDA tools must include much more manufacturing-aware physical design capability to bridge the design/ manufacturing gap.
(Contact the ITC Library to obtain article)

Designing Eco-Buildings. M. Mowry. Business NH Magazine, Nov. 2002, p.16. -- As more companies become aware of the benefits of green or sustainable design, they are asking that those features be incorporated into new buildings. Options range from selecting materials that don’t give off toxins or volatile organic compounds (VOCs), to making the entire building ecologically sound from the draft table to final construction, including computer models to test the building’s environmental and economic viability before it’s even constructed.
(Contact the ITC Library to obtain article)
Emerging & Future Technologies

**GE's Growing Bet – Wind Power.** J. Teresko. *Industry Week*, February 2003, p. 16. – Steve Zwolinski, president and CEO of GE Wind Energy, expects the wind energy sector to grow 20% per year. To meet the demand, GE Wind Energy is field-testing the first commercial unit rated over three megawatts.


**Winds of change blow in power generation.** *Plant*, 2/10/03, p. 15. (Contact the ITC Library to obtain article)

**Farm Facts & Fancies.** *The Furrow*, February, 2003, p. 13. (Contact the ITC Library to obtain article)

**Current from Currents.** G. Ehrenman. *Mechanical Engineering*, February 2003, p. 40. – In the quest for renewable energy, the oceans’ tides and flow have gone largely untapped. Companies in the United Kingdom and Canada are trying to harvest the power of sea current through a new application of an old technology: turbines. These current, or sea, turbines function much like wind turbines. Instead of being driven by wind, they derive energy from coastal currents. Seawater is 832 times as dense as air, so the kinetic energy available from a 5-knot ocean current is equivalent to a wind velocity of 270 kilometres per hour.

Read more: [http://www.memagazine.org/contents/current/features/currents/currents.html](http://www.memagazine.org/contents/current/features/currents/currents.html)

**Big Brother is Tracking.** A. Pletsch. *Plant*, 2/10/03, p. 1. – The Electronic Product Code (EPC) is a system that uses tiny radio microchips, costing a few cents each, embedded into almost any object. The plan is a completely transparent supply chain, using computers to track a product from the manufacturing plant all the way to the supermarket or automotive dealer, using radio waves.

(Contact the ITC Library to obtain article)

High Performance Manufacturing

**LEAN MANUFACTURING**

**Use Slow Times to Train Staff in Flow Manufacturing.** G. Leone. *Advanced Manufacturing*, Jan./Feb. 2003, p. 36. – Down times in the manufacturing economy can teach valuable lessons to executives. Lately a clear dichotomy has developed in the North American manufacturing sector. At one end of the spectrum are the companies that react by slashing everything, stressing employees and compromising the company’s competitive position. At the other end are the companies, large and small, that invest time and resources to become more responsive and efficient. This latter group is weathering the economic storms better than the first group. One of the strategies for many of these successful companies is wide implementation of lean manufacturing strategies, including flow processing.

Read more: [http://www.advancedmanufacturing.com/January03/parting.htm](http://www.advancedmanufacturing.com/January03/parting.htm)

**A Paper Trail Leads to Success.** *Lean Manufacturing Advisor*, February 2003, p. 1. – A “Kaizen Newspaper” is one tool implemented at OhmCraft, designed to track the status of problem-solving initiatives. It is posted on the shop floor so everyone can see the progress being made.

(Contact the ITC Library to obtain article)
Mistake-Proofing is a New Tool as Lean Initiative Evolves. *Lean Manufacturing Advisor*, February 2003, p. 5. -- Lockheed Martin believes that mistake-proofing involves using wisdom and creativity to create devices that prevent defects. They also believe that training employees is important. Employees are taught the likely causes of defects; different levels of mistake-proofing efforts; priorities for those efforts; criteria for development mistake-proofing strategies. (Contact the ITC Library to obtain article)

Canadian Software Helps Firms Get Lean, Conference Told. J. Zronik. *Advanced Manufacturing*, Jan/Feb 2003, p. 6. – A Canadian-developed manufacturing measurement system is helping companies around the world improve profitability and productivity. PVelocity’s Profitability Dash Manufacturing Intelligence Software demonstrates where a company’s profit potential exists by consolidating its data sources. Read more: [http://www.advancedmanufacturing.com/January03/newswire.htm#innovation](http://www.advancedmanufacturing.com/January03/newswire.htm#innovation)

The Journey to Lean. A. Wilson. *Manufacturing Engineer*, December 2002, p. 275. – The author provides a “back to basics” guide to software tools that support lean manufacturing in six areas: making lean stick, lean and suppliers, extending lean to customers, inventory management, shorter lead times, resolving lean with ERP. (Contact the ITC Library to obtain article)

PRODUCTIVITY

Getting Agile with Product Data. M. Goldby. *Manufacturing Engineer*, December 2002, p. 257. – Global competition, increased customer expectations, and a faster pace of business influenced Siemens Communications’ decision to do the following: cut operating costs; increase cash flow by reducing the time taken to ramp to volume production on new products; decrease the time taken to service customer requests; and improve the component sourcing process. New product chain management software was implemented to help Siemens manage their products through every phase of the product profit cycle. (Contact the ITC Library to obtain article)

Sharing Risk and Reward. J. Roux. *Manufacturing Engineer*, December 2002, p. 284. – Collaborative working is a concept that is defining new levels of productivity and profitability. This article explores the potential for collaborative working that CAD technology offers. (Contact the ITC Library to obtain article)

Secrets to Longevity. J. Jusko. *Industry Week*, March 2003, p. 24 – What do Du Pont, Deere & Co., Procter & Gamble, and Coca-Cola Co. all have in common? They’ve been around for a long time. Innovative, resilient, focused, and adaptable describe companies that stand the tests of time. Resilience, adaptability, visionary, innovative, and the ability to learn from mistakes are four qualities that lead to longevity in successful companies. Read more: [http://www.industryweek.com/CurrentArticles/asp/articles.asp?ArticleID=1393](http://www.industryweek.com/CurrentArticles/asp/articles.asp?ArticleID=1393)

**QUALITY**

**Benefiting from Six Sigma.** G. Connor. *Manufacturing Engineering*, February 2003, p. 53. – Garry Connor, author of *Lean Manufacturing for the Small Shop*, says your company does not have to be large to benefit from Six Sigma. Many techniques in the lean manufacturing toolbox are also found in the Six Sigma tool belt. These programs complement each other rather than compete for resources. With some modification, Six Sigma can benefit small companies as well as large companies. Read more: [http://www.sme.org/cgi-bin/get-mag.pl?&amp;03fem003&amp;000007&amp;2003/03fem003&amp;ARTME&amp;SME&](http://www.sme.org/cgi-bin/get-mag.pl?&amp;03fem003&amp;000007&amp;2003/03fem003&amp;ARTME&amp;SME&)

**Driving Quality with Six Sigma.** R. Olexa. *Manufacturing Engineering*, February 2003, p. 61. – By designing part using math-based software, Design for Six Sigma, and Six Sigma, GM has increased vehicle quality while lowering costs and improving its products’ reliability and durability. Software tools can even be used to tell if a part is able to be manufactured in the ways the engineers are considering. Read more: [http://www.sme.org/cgi-bin/get-mag.pl?&amp;03fem001&amp;000007&amp;2003/03fem001&amp;ARTME&amp;SME&](http://www.sme.org/cgi-bin/get-mag.pl?&amp;03fem001&amp;000007&amp;2003/03fem001&amp;ARTME&amp;SME&)

**Flying High with Six Sigma Quality.** R. Olexa. *Manufacturing Engineering*, February 2003, p. 69. – What is Six Sigma according to GE? It isn’t a secret society, a slogan or cliché. Six Sigma is highly disciplined process that helps GE focus on developing and delivering continually improving products and services. Read more: [http://www.sme.org/cgi-bin/get-mag.pl?&amp;03fem002&amp;000007&amp;2003/03fem002&amp;ARTME&amp;SME&](http://www.sme.org/cgi-bin/get-mag.pl?&amp;03fem002&amp;000007&amp;2003/03fem002&amp;ARTME&amp;SME&)

**ISO 9000 and ISO 14000: Alive, well and worldwide.** *Plant*, 2/10/03, p. 22. – But Canadian firms don’t feel the sense of urgency. Effective December 14, 2003 all ISO 9000:1994 accreditation certificates for ISO 9001, ISO 9002, and ISO 9003 will expire. This article outlines some observations as to why Canadian ISO 14000 registrations are smaller than other industrialized countries. (Contact the ITC Library to obtain article)

**Material Advances**

**Woodworking North of the Border.** Christianson & Landgraf. *Wood & Wood Products*, January 2003, p. 49. – Canada is a strong ally, trading partner, and competitor to the United States. And, like the U.S., Canadian manufacturers are facing stiff competition from lower-cost producers in China. In 2001, China passed Canada as the U.S.’s leading source of foreign furniture and components. (Contact the ITC Library to obtain article)

**Canadians Feel the Heat, Take Steps to Compete.** H. Miller. *Wood & Wood Products*, January 2003, p. 56. – Canadian wood product manufacturers are seeking ways to meet stiffer global competition. (Contact the ITC Library to obtain article)

**Breakthrough Could Lead to Stronger Manufacturing Metals.** *Advanced Manufacturing*, Jan./Feb. 2003, p. 11. – Combining old-fashioned metal-working techniques with modern nanotechnology, engineers at Johns Hopkins University have produced a form of pure copper metal that is six times stronger than normal, with no loss of ductility. Read more: [http://www.advancedmanufacturing.com/January03/worldwatch.htm#us2](http://www.advancedmanufacturing.com/January03/worldwatch.htm#us2)
Military Mixes "Smart" Coatings. D. Essex. Emerging Technologies Newsletter (MIT), February 21, 2003. The U.S. Army wants self-healing, corrosion-resistant polymers to camouflage tanks. Researchers think nanotubes will help them get there. Nancy Sottos, a professor of mechanics at the University of Illinois at Urbana-Champaign engineered an epoxy with micron-scale capsules that burst when cracks form, quickly sealing them. "The key to making it a product is the shelf life," Sottos says. "Right now, we mix them and break them up right away."

Read more: http://www.technologyreview.com/articles/wo_essex022103.asp

Thermoplastic Composites Making an Impact. D. Brosius. Composites Technology, February 2003, p. 20. – In the search for materials that cut mass and cost while providing improved performance, design engineers are increasingly turning to long-fiber-reinforced thermoplastics (LFRTs).

Read more: http://www.raypubs.com/ctmag/ctmain.lasso

New Lightweight Trailer Delivers Heavy-Duty Performance. S. Black. Composites Technology, February 2003, p. 36. – All-composite chassis and trailer design offered trucker increased cargo capacity plus greater durability. A lighter trailer reduces the overall vehicle weight, meaning more cargo can be hauled per trip, reducing the cost of the transported goods.

Read more: http://www.raypubs.com/ctmag/ctmain.lasso

Metal-Powder Injection Molding Moves into Larger Parts. M. Knights. Plastics Technology, February 2003, p. 43. – One of the latest developments in metal-powder injections molding (MIM) is its first commercial large part – a 3.5 lb flow-body housing for a passenger jet plane. The maker, Polymer Technologies Inc., used simulation software to reduce development time by several weeks and to obtain a high degree of process repeatability.

Read more: http://www.plasticstechnology.com/articles/200302cu3.html

Manufacturing News

SMEs Should Use Web for Better Productivity – Pierre-Paul Allard, CEO of Cisco Systems Canada, stated that for small-medium-sized business owners, spending money on Internet-based solutions for your company is an investment, not a cost. Allard, who is co-chair of the Canadian e-Business Initiative, said that based on a recent CeBI study, small Canadian businesses still lag well behind their U.S. counterparts in e-business adoption. "It’s so much more than sales, it’s reconstructing their business in a web-centric fashion."

The study states that SME’s tend to be more reluctant to embrace e-business for sophisticated applications such as supply chain management or order processing and fulfillment. But they must “exploit the power of the Internet to reach new customer, suppliers and employees that they could not otherwise reach. They must also overcome a narrow view of their markets, uncertainty over return on their e-business investment and resolve concerns over security and web site integration."

For additional information:

Events & Learning Opportunities

Innovation Insights Plant Tour
Friesens Corporation
Altona, MB
March 5, 2003, 10:00 a.m. – 3:00 p.m.
Continuous Improvement, Human Resources, Information Technologies
Details: www.tvp-ii.org

An Introduction to the Balanced Scorecard
March 12, 2003
Breakfast session, 7:30 am – 9:00 am
Manitoba Quality Network
Details: www.qnet.mb.ca or call (204) 949-4999

HPM Lean Accounting Sessions
High Performance Manufacturing Consortium
Velcro Canada, Brampton
- Mar 13, HPM Lean Accounting
  Supporting the Lean transformation… the big picture made simple
- Mar 14, HPM 1+1=3...
  Learning to Measure & Max Lean’s $ Benefits… Hands-on Practice Lean Acc’tg

https://www.hpmconsortium.com/event_accounting.asp
Contact Laura: lramsay@highperformancesolutions.ca; phone 519-893-6260

Innovation Insights Plant Tour
Vansco Electronics
Winnipeg MB
March 18, 2003 (Note: date change),
10:00 a.m. – 3:00 p.m.
Lean Manufacturing, Continuous Improvement
Details: 1-800-999-4129; www.tvp-ii.org

Advanced Manufacturing Showcase
March 24-27, 2003
Winnipeg MB
Details: contact Bill Teerhuis, 945-2428, bteerhuis@gov.mb.ca

Life Sciences Commercialization Training Program
Healthcare Products Association of Manitoba (HCPAM)
Module 1: New Product Development from Idea to Launch
Wednesday, March 26 & Thursday, March 27, 2003
8:30 a.m. to 4:30 p.m.
Location To Be Determined
$250 per HCPAM member ($300 non-members) Module # 1 (2-days)
Details: www.hcpam.com

Balanced Scorecard: Linking Strategy to Results
March 27, 2003, 8:30 am – 4:30 pm
Manitoba Quality Network
Details: www.qnet.mb.ca or call (204) 949-4999

CME Manitoba Gala Dinner
March 27, 2003
Fairmont Hotel, Winnipeg
Speaker: George Reynolds, Northrop Grumman Corporation, Ohio, USA.
Details: ph: (204) 949-1454
E-mail: mb.reception@cme-mec.ca
Innovation Insights Plant Tour
Cascades Boxboard Group Inc.
Winnipeg MB
**April 10, 2003, 9:30 a.m. – 1:30 p.m.**
Continuous Improvement, Lean Manufacturing
Details: [www.tvp-ii.org](http://www.tvp-ii.org)

Innovation Insights Plant Tour
Loewen Windows
Steinbach MB
**May 22, 2003, 9:00 a.m. – 2:00 p.m.**
Customercentricity, Lean Manufacturing
Details: [www.tvp-ii.org](http://www.tvp-ii.org)

Innovation Insights Plant Tour
Winpak Ltd.
Winnipeg MB
**June 3, 2003, 10:00 a.m. – 1:00 p.m.**
Continuous Improvement, Human Resources, Sustainable Development
Details: [www.tvp-ii.org](http://www.tvp-ii.org)

Innovation Insights Plant Tour
Palliser
Winnipeg MB
**June 17, 2003, 10:00 a.m. – 2:00 p.m.**
Human Resources, Lean Manufacturing, Supply Chain Development
Details: [www.tvp-ii.org](http://www.tvp-ii.org)

Lean Enterprise Institute Workshops
Toronto, ON
**August 18-22, 2003**
Details [www.lean.org](http://www.lean.org)

International Lean Conference
Are you going to measure up for success?
**October 6-10, 2003**
Toronto ON
Details: [http://www.measureupforsuccess.com](http://www.measureupforsuccess.com)