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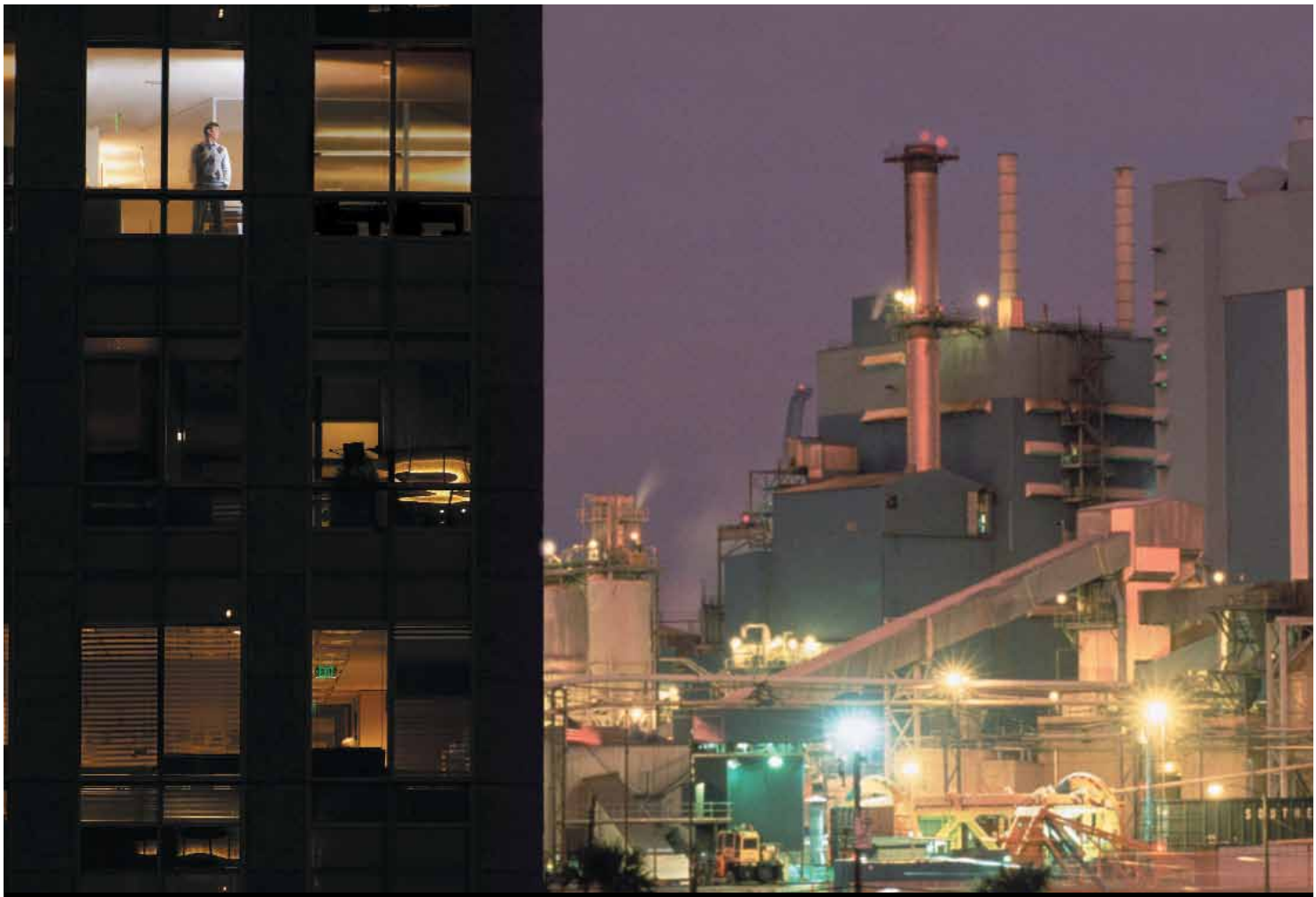
JANUARY/FEBRUARY 2013

LIGHTWEIGHT CONTAINERBOARD

Is there any real demand for lightweight grades in North America?

CONTAINERBOARD

Capacity control, coupled with significant Kraft liner export tonnage, should maintain operating rates in 2013.



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The Next Light Heavyweight

By John O'Brien, Managing Editor
jobrien@paperage.com

Is there a trend in North America towards the production of lightweight containerboard? And more importantly, is there a developing market in North America for lightweight grades?

The current answer to both questions is an un-resounding, 'somewhat.'

So why isn't there more migration in this part of the world towards lightweight grades, especially considering the pledges to sustainability that has become the mantra of nearly every large consumer goods packaging company and mega-retailer in this country?

I do realize that a large portion of things in this world require packaging that falls into the medium to heavyweight categories and that the big integrated producers have too much invested in their assets to move away from producing mid- to heavier weight grades. But the door is certainly open for smaller, independent producers to consider converting a machine or two to lightweight grades.

According to Sarilee Norton, President of Norton Associates and an expert with over 30 years of hands on experience in the area of paper-based packaging, lightweights have gained some traction in recent years, but the U.S. still lags far behind Europe and other regions of the world when it comes to the production of lightweight grades.

"We have clearly seen a trend to lightweighting, but lightweights have not increased as a portion of the total linerboard mix at all," Norton points out in her story "Lightweight Containerboard in North America — "Can You Hear Me Now?" that begins on page 18.

"In Europe and most other regions of the world, the average basis weight of boxes is 20% lower than in the U.S. The difference is in the basis weights of the box components — the rest of the world uses lighter weight containerboard, predominately made from recycled fiber," she explains.

If you were to ask U.S. and Canadian containerboard producers why they don't have much interest in lightweight grades, they would probably point to the lack of demand, and they're right, the demand just isn't there — yet.

On the other side of the coin, if you were to ask buyers why they don't purchase lightweight grades they'd probably tell you it's a supply issue and they don't want to get stuck empty-handed at a busy time.

As I see it, it's kind of a stand-off right now — until, of course, a few heavyweights (pun intended) like Walmart, Coca Cola, Amazon, etc. step up and in the name of sustainability demand lightweight packaging for their products. It's not as if this might happen, it's going to happen.

In her article, Norton states, "North America has the technology available to make containerboard comparable to the best of what's produced in Europe. And in Europe, lightweighting and lightweights are mainstream. Global consumer packaged goods companies and retailers want the same efficiency and sustainability advantages in North America that they have outside of the region. So what is holding North America back? We believe it has been the lack of availability of high-quality lightweights that are (1) consistent in their performance and aesthetic characteristic and (2) offered by well-established mills with the production experience and industry knowledge to manufacture, market and support lightweights successfully."

Norton's take on the situation is spot-on: if you create the right product at the right time, demand will follow.

There certainly is great potential for lightweight linerboard and medium in today's and tomorrow's world, and it's going to take some capital and nerve to get things started. ■

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NORTH AMERICA

Clearwater Paper Starts Up New TAD Tissue Machine at Shelby Mill

Clearwater Paper has started up a new through-air-dried (TAD) paper machine at the company's newest facility at Shelby, North Carolina.

The machine produced its first finished ton and converted product on December 13.

"Construction of all phases to date of the nearly one-million-square-foot facility came in on-time and on-budget," said Gordon Jones, chairman and CEO. "The dedication and support of Clearwater Paper's 200 Shelby employees have already made this facility a huge success."

Upgrades to a second Clearwater Paper TAD paper machine, located at the company's facility in North Las Vegas, have also been completed. The enhancements enable the facility to produce TAD ultra-bathroom tissue and household towels.

In a statement, Clearwater said, "New production and distribution capability at Shelby is expected to increase the company's ultra and premium offerings to existing southern and East Coast customers. Collectively, the two TAD machines will create new opportunities to expand the company's private label consumer tissue business around a national manufacturing footprint, supplying these key products to customers across the United States."

Linda Massman, president and COO of Clearwater Paper noted, "The completion of the flagship facility in Shelby fulfills one of Clearwater Paper's primary business strategies — to focus on growing the consumer products segment of the company."

"Combined with the recent upgrade at our North Las Vegas facility, these two important projects have helped Clearwater Paper achieve our goal of a coast-to-coast manufacturing footprint focused on best serving our private label customers," Massman added.

Wausau Paper Narrowing Focus to Tissue, Mulling Options for Specialty Papers Business

Wausau Paper said that it commenced a process last year to identify strategic alternatives for its Paper Segment that will position the company to focus its management efforts on continuing the growth of its tissue business.

In early 2012 the Company exited its legacy Print & Color business and narrowed the focus of its Paper Segment to specialty products with leading domestic and global positions in food, industrial and tape markets. Since that time Wausau retained financial advisors to assist the company's board of directors in the evaluation of alternatives for the remainder of the Paper Segment.

Wausau Paper recently began the start-up phase of a $220 million tissue capacity investment at its Harrodsburg, Kentucky site.

"Our Tissue Segment has demonstrated strong profitability and exceptional growth over the last decade," said Hank Newell, President and CEO. "We believe our shareholders' interests will be best served through a singular focus on successfully marketing the capacity and capability of our new tissue machine and sustaining the historically strong growth and profit performance of our tissue business."

Wausau Paper said that it "cannot provide assurance of the timing, terms or completion of a transaction related to the strategic alternatives for the Paper Segment."

Irving Paper Looks to Better 2012 Record-breaking Performance

Irving Paper (Saint John, New Brunswick, Canada) has a new target to beat in 2013 as it finished 2012 with record-breaking production.

The team of over 300 employees pulled together to make 408,214 tonnes of quality specialty grade paper.

While production has increased, the team has worked hard to reduce the mill's impact on the environment. Over the past five years, Irving Paper has achieved a 55% reduction in greenhouse gas emissions — the equivalent of about 20,000 cars off the road.

The Saint John mill is also active in the community — including volunteering with the award-winning PALs program at Glen Falls School, revitalizing local playgrounds, and supporting meal programs.

Irving Paper produces a full range of of Supercalendered Printing Papers at its mill in Saint John. Grades include SCA+, SCA and SCB in basis weight ranges from 30lbs to 40lbs (45 - 59 gsm). The mill houses two paper machines and has the capacity to produce 420,000 tons per year.

Soundview Paper Acquires Vermont-based Putney Paper

Soundview Paper Company LLC has acquired Putney, Vermont-based Putney Paper Co, Inc., a subsidiary of APC Paper Holdings, Inc., a towel and paper products manufacturer.

Terms of the deal were not disclosed.

Soundview Paper said the acquisition brings a broader range of commercial towel manufacturing capability into its finished paper products offering of tissue, towel and napkin products to retailers, distributors and other customers.

"We are very enthusiastic about this important addition to Soundview's Away-from-Home business and the synergies created by putting these enterprises together," said John McLean, SVP Sales & Marketing for Soundview Paper.

"With the addition of Putney, we now offer our customers an even broader product array of towel and tissue products in the Away-from-Home segment," McLean added.

George Wurtz, Soundview's CEO, noted, "We are excited about the Putney acquisition. The mill's operational capabilities and paper-making skills extend our capabilities in the commercial markets, enabling us to continue to grow our presence in the northeast region. The Putney mill has a rich culture and we look forward to welcoming Putney employees into the Soundview family."

Soundview Paper Company LLC (formerly Marcal) is part of Atlas Holdings which owns and operates more than 70 facilities with nearly 9,000 employees worldwide.

Sappi Fine Paper North America Slates $2.5 Million for Coater Upgrade at Westbook Mill

Sappi Fine Paper North America announced the approval for its $2.5 million capital project to re-build a specialty paper coater at its Westbrook Mill in Westbrook, Maine.

According to Sappi, the project involves an upgrade in the web handling, coating and drying capabilities of #20 coater, which will result in expanded manufacturing capacity, allow for use of a wider range of raw materials and improve energy efficiency.

"This is tremendous news for Westbrook Mill," said Donna Cassese, Managing Director, Westbrook Mill, SFPNA. "Over the past few years, we have made significant gains in safety, yield, equipment reliability, and productivity; all of which have strengthened our market position globally. These accomplishments helped set the stage for the decision to invest in our Classics line."

The Westbrook Mill makes specialized release papers. The Classics line is used to provide the textures and patterns for synthetic fabrics used in automobiles, fashionable footwear and apparel as well as decorative laminate surfaces found in flooring, kitchens, and baths, Sappi said.

Sappi expects the re-build to be completed by May of 2013.

SOUTH AMERICA

International Paper Finalizes Deal with Grupo Orsa in Brazil

International Paper and Brazilian corrugated packaging producer Jari Celulose, Embalagens e Papel S.A., a Grupo Orsa company, in mid-January finalized the formation of Orsa International Paper Embalagens S.A.

The new entity, in which IP will hold a 75 percent stake, includes three containerboard mills and four box plants, which make up Jari's former industrial packaging assets.

The deal was originally announced in October of 2012.

"International Paper has been in Brazil for over 50 years and we are excited about this partnership as a platform to enter the corrugated packaging business in this strategic region," said John Faraci, IP's Chairman and CEO.

"This investment fits our strategy to grow our packaging business globally and allocate capital to opportunities that deliver returns well above our cost of capital."

The value of IP's investment is approximately $470 million at today's exchange rate.

SOUTH AMERICA

CMPC to Increase Guaiba Pulp Mill Capacity by 1.3 Million tpy

Santiago, Chile-based Empresas CMPC said that it will move forward with plans to expand the company's Guaiba pulp mill, in the state of Rio Grande do Sul, Brazil.

The expansion of Guaiba involves a total investment in industrial assets of approximately US$2.1 billion, CMPC said.

"This investment is a milestone for CMPC, the largest in the company's history," said Hernan Rodriguez, CEO of CMPC.

"The Guaiba II project will almost double our market share of global pulp and help us meet growing demand for high quality wood pulp from clients in all our markets.

"This important decision taken by [our] Board of Directors is another step in CMPC's internationalization, and takes our total investment in Brazil to US$4.5 billion," Rodriquez said.

According to CMPC, the project consists of the construction and operation of a new bleached eucalyptus pulp production line, with a total capacity of 1.3 million tons per year.

The new pulp production line will be in addition to the existing bleached eucalyptus line at the site, which currently has an annual capacity of 450,000 tons per year.

CMPC expects the new second line to begin producing pulp by the first quarter of 2015.

With this investment, CMPC will increase its pulp production capacity to 4.1 million tons per year.

Guaiba II will incorporate the latest technologies in the production of pulp, and will be 100% self-sufficient in terms of pulpwood supply, CMPC said.

CMPC said that it has obtained all state, municipal and environmental permits and authorizations necessary to carry out the expansion of the Guaiba plant.

EUROPE

Graphic Packaging Completes Acquisitions of Contego Packaging and A&R Carton

Graphic Packaging Holding Company (GPK) recently completed the acquisitions of Contego Packaging Holdings, Ltd., a leading food and consumer products packaging company based in the United Kingdom, and A&R Carton Holding B.V., which is A&R's European beer and beverage packaging business.

The combination of Graphic Packaging's European packaging business with these two acquisitions will create one of Europe's largest folding carton businesses, GPK said in a statement.

Contego Packaging

Graphic Packaging bought Contego Packaging for approximately GBP 71 million in cash and assumes about GBP 10 million in other net liabilities.

Contego Cartons operates three folding carton facilities that convert approximately 150,000 tons of paperboard annually into folding cartons for the food and consumer product industries. Two of Contego Carton's facilities are located in the United Kingdom while the third facility is in the Netherlands.

A&R Carton Holding

Graphic Packaging acquired A&R Carton's Beer and Beverage packaging business for about EUR 19 million in cash and assumes approximately EUR 7 million in other net liabilities.

The A&R Beer and Beverage packaging business includes two manufacturing facilities that convert approximately 30,000 tons of paperboard annually. The folding carton facilities are located in the Netherlands and Germany.

The two acquisitions provide state of the art web and sheetfed converting assets creating a manufacturing platform in Europe similar to Graphic Packaging's U.S. operations, GPK said.

Mondi SCP Slates EUR 128 Million in Green Energy Projects at Ruzomberok Mill

Mondi SCP announced plans to invest EUR 128 million in green energy projects at its Ruzomberok mill in Slovakia.

According to Mondi, the investment includes a new recovery boiler at the mill to increase pulp production, reduce the mill's environmental footprint, and improve the overall cost position. The projects will cover improvements in chemical recovery and green energy and heat production during the pulp production process.

The new recovery boiler will be constructed over a two-year period with an expected start-up in the fourth quarter of 2014.

Mondi SCP is the largest integrated mill producing pulp and paper in Slovakia with pulp production exceeding 500,000 tonnes and uncoated fine paper production of 535,000 tonnes.

EUROPE

SCA to Sell Its Laakirchen Paper Mill in Austria to Heinzel Group

SCA has agreed to sell its Austrian publication paper mill in Laakirchen to Heinzel Group.

Under the terms of the agreement, the initial purchase price is EUR 100 million with a possible maximum additional purchase price of EUR 100 million based on a two-year profit-sharing model. In conjunction with the deal, an impairment of EUR 50 million has been recognized, which will be charged to profit in the fourth quarter of 2012.

In 2011, Laakirchen had total sales of EUR 335 million, employed some 500 people and has the capacity to produce over 500,000 tons per year of paper.

SCA expects the deal to be finalized in the first quarter of 2013.

Following the divestment of Laakirchen, SCA's remaining publication papers operations will be concentrated to Sweden, close to its forest holding.

UPM Permanently Ceases Production of Coated Magazine Paper at Stracel Mill

UPM on January 4 permanently ceased production of coated magazine paper at its Stracel mill in France after finalizing the employee information and consultation process with the Central Workers' Council of UPM France and the Workers' Council associated with the mill.

The consultation process, which began in July of 2012, is part of UPM's asset review announced on August 31, 2011 that focuses on adjusting the company's magazine paper capacity to match the needs of its global customer base.

Current customers of the Stracel mill will be served from other UPM mills, the company said.

UPM's Stracel mill has been producing 270,000 tonnes per year of coated magazine paper grades. The mill has 250 employees.

Moving forward, UPM said that it will continue with negotiations of the sale of assets and part of the land of the Stracel mill to the joint venture created by VPK Packaging Group and Klingele Papierwerke.

"The project of VPK and Klingele to convert the mill into a recycled fiber-based containerboard mill is serious and provides an option to create a new industrial future for the Stracel site and for a number of its employees," said Jyrki Ovaska, President of UPM Paper Business Group. "The aim is to conclude these negotiations as soon as possible."

NPTA Alliance Unveils 2013 Strategic Initiatives

The NPTA Alliance Board of Directors recently adopted a strategic plan for 2013-2015 and revised mission statement. NPTA's mission is to actively support the success of member firms through the delivery of networking, education, advocacy and industry trends focused on the health of the paper distribution channel, which reflects a focus on paper merchants and mill partners as the sole membership base.

In support of this three-year plan and updated mission, NPTA has adopted revised strategic objectives that include:

- Offering stimulating networking events which unite current members and attract new members.
- Providing year-round, cost-effective educational and training opportunities for member firms and their customers.
- Supporting advocacy efforts on behalf of the paper and print industries.
- Serving as a unique and relevant resource for industry data and trends that impact member firms.

"Our primary focus will be on facilitating the flow of information and education between paper merchants, printers, and print and paper buyers that drive efficiencies, and create learning opportunities."

— Kevin Gammonley, CEO, NPTA

"Following extensive market research efforts, strategic planning sessions and the evaluation of our resources, the NPTA Board has devised strategic objectives and priorities for the next three years to foster growth within the organization and its member firms," said NPTA CEO Kevin Gammonley.

"Our primary focus will be on facilitating the flow of information and education between paper merchants, printers, and print and paper buyers that drive efficiencies, and create learning opportunities," Gammonley said.

In 2013, NPTA's strategic priorities will include:

- Partner with the printer community – NPTA will reach out to the printer community to address value chain issues and opportunities between mills, merchants and printers. These include reducing costs, waste and redundancies in the channel, as well as addressing end-user perceptions about paper.
- Partner with the European paper merchant community – NPTA will investigate and facilitate opportunities for the exchange of ideas, solutions and trend analysis between its members and the European paper merchant community.
- Focus on paper and print buyers – NPTA will investigate opportunities to help NPTA members increase understanding of and build relationships with a younger demographic of paper and print buyers.

For more information on NPTA, visit www.goNPTA.com.

IPST Doctoral Student Explores Process to Convert Lignin into Gasoline-compatible Liquid Fuel

Wei Mu is in IPST's doctoral program in Chemical and Biomolecular Engineering on an IPST Paper Science and Engineering Fellowship.

More than 50 million tons of lignin are produced in the paper industry each year with 98% of it burned for energy, according to IPST (Institute of Paper Science and Technology) doctoral student Wei Mu.

Today, Wei is exploring other value-added opportunities for lignin, including the catalytic conversion of lignin into gasoline-compatible liquid fuel.

Wei, who entered the doctoral program in Chemical and Biomolecular Engineering on an IPST Paper Science and Engineering Fellowship, is supervised by Professor Yulin Deng of IPST and the School of Chemical and Biomolecular Engineering. Wei plans to graduate with his PhD in December 2013.

Wei's research employs a two-step conversion of lignin into a liquid transportation fuel. The first step is pyrolysis, which decomposes lignin into smaller molecules. Step two is upgrading, which increases the hydrogen amount and partially removes oxygen. The upgrading step requires robust and active catalysts. His research focuses on the catalyst synthesis step and reaction kinetics modeling.

Wei's research has captured international attention, most recently at the International Conference of Bioengineering and Technology (ICBT) in Nanjing, China. He presented two papers at ICBT: "Lignin Pyrolysis Components and Upgrading – Technology Review," by Mei Wu and Professor Yulin Deng (ChBE); and "Catalytic Hydrodeoxygenation of Pyrolysis Oil Derived from Lignin," by Mei Wu, Haoxi Ben, Professor Yulin Deng (ChBE), and Professor Art Ragauskas (Chem).

After his return, he participated in the Annual Meeting of the American Institute of Chemical Engineers in Pittsburgh, Pennsylvania, where he also presented two papers: "Catalytic Hydrodeoxygenation of Pyrolysis Oil Derived from Lignin," by Mei Wu, Haoxi Ben, Professor Yulin Deng (ChBE), and Professor Art Ragauskas (Chem); and "ANOVA Study of Reaction Condition Effect on Hydrodeoxygenation," by Wei Mu and Professor Yulin Deng (ChBE).

As part of his master's work in Paper Science and Chemical Engineering at Miami University in Ohio, Wei conducted research at the Argonne National Laboratories in Illinois, to synthesize new materials for semi-conductors using layers. He has industry experience with the Hercules Paper Division and Hercules Paper Technologies and Ventures in China, prior to earning his master's degree and coming to Georgia Tech for his PhD.

For information about IPST, please visit: ipst.gatech.edu

EUROPE

Rottneros Mill to Continue Making Pulp, Producing New Grade

The Rottneros Group announced that it has reconsidered a previous decision to halt groundwood pulp production at Rottneros Mill in Sweden and that the mill will now produce a new grade of pulp.

Rottneros said an initiative to improve the groundwood mill's process has resulted in the mill producing and marketing a new grade of pulp with properties that are "particularly attractive to board manufacturers."

There are plans to produce between 40,000 and 50,000 tonnes of groundwood pulp in 2013 and it will constitute the new board grade as well as current printing paper grades, Rottneros said.

The Board of Rottneros announced in May 2012 that it had entered into negotiations concerning the termination of continuous groundwood pulp production at Rottneros Mill. Negotiations, which were concluded mid-year, resulted in the organization having to reduce its staff by around 50 people.

Twenty or so employees are now being offered continued work, the company said.

CHINA

Burrows Paper Now 100% Stakeholder in Innopak

Burrows Paper Corp. recently completed the acquisition of the remaining 75 percent equity interest in Innopak Hong Kong Limited (the investment company that owns 100 percent of Innopak Heshan) from Innopak Holdings Limited.

Until recently, Burrows was a 25 percent stakeholder in this joint venture packaging company.

"We are very proud to welcome the Innopak team into the Burrows family," said Bill Burrows, Chairman, CEO and President of Burrows Paper.

"The synergy of our two companies holds great potential for mutually beneficial integration and significant growth opportunities. Through our shared values and commitment to quality, we will achieve our primary goal of providing superior packaging products to our customers, as well as broader opportunities for employees," Burrows said.

Innopak Heshan is a converter of specialty paper and board-based foodservice packaging products. Innopak's current offerings include specialized hand carry bags, grease-resistant wraps, color printed clamshells for a variety of food items and more.

Innopak was established in 2007 and its manufacturing facility is located at Longkou, Heshan, Guangdong, China.

CHINA

Orient Paper Secures Land Lease for New Tissue Mill in China

Orient Paper Inc. has secured a land lease for its new "at-home" tissue paper production facilities as well as signed the construction and installation contract for the first production line in these facilities, through its subsidiary Hebei Baoding Orient Paper Milling Co., Ltd. ("Orient Paper HB").

"Orient Paper is making steady progress with our business expansion into the tissue paper sector."
— Zhenyong Liu, Chairman and CEO, Orient Paper

Orient Paper HB has secured the lease of a 200,000 square meters parcel of land in the Wei County Economic Development Zone in Hebei Province, China. Under the land lease agreement, Orient Paper HB has the usage rights for 15 years starting from November 27, 2012 for a lease payment of RMB3.6 million (US $580,000) per year.

Orient Paper HB has also signed a construction and installation contract with a leading paper manufacturing equipment provider in China, for the first of its two tissue paper production lines, each having a designed capacity of 15,000 tonnes per year.

The cost for the first production line is RMB31 million (US$5 million), with installation scheduled to be completed by the end of the second quarter of 2014.

Orient Paper estimates that the total cost of the two tissue paper production lines and related facilities will be approximately US$43.5 million.

"Orient Paper is making steady progress with our business expansion into the tissue paper sector, as previously announced," said Zhenyong Liu, Orient Paper's Chairman and CEO.

"Our strategy is to tap on under-served markets and benefit from the growing urbanization of China's rural regions, and we see great potential in the household/tissue market in North China," he added.

INDUSTRY SUPPLIER

Fabrica De Papel San Francisco on Track to Start Up New Tissue Line in Mexico

Metso said that Mexican tissue producer Fabrica De Papel San Francisco is preparing to start up its third Metso-supplied tissue production line.

According to Metso, it will be the world's first tissue line based on the Advantage NTT concept, which enables high bulk and softness properties at the same time as it provides energy savings compared to conventional or structured tissue grades.

Metso's scope of supply comprises a complete 2.6-meter-wide Advantage NTT tissue machine.

Metso said the project is proceeding according to plan and the new tissue production line will start up in Mexicali, Mexico in the end of the second quarter of 2013.

The new tissue line will add another 30,000 tonnes per year of bathroom tissue, napkin and towel grades to Fabrica De Papel San Francisco's existing production.

Fabrica De Papel San Francisco now operates four tissue production lines and converting facilities, delivering tissue products for the Mexican and U.S. market.

INDUSTRY SUPPLIER

Voith to Supply Modern Karton with Lightweight Packaging Paper Machine

Ahmet Eren from Modern Karton (on the left) and Andreas Endters from Voith Paper signing the contract for the PM 5.

Voith said that it will supply Modern Karton with a new paper machine for Modern Karton's paper mill in Corlu, Turkey.

The new PM 5 will produce lightweight packaging paper.

The scope of supply includes the entire process line.

According to Voith, PM 5 will be a particularly sustainable machine, especially as it consumes very little fresh water.

Modern Karton itself will set up a power plant on the mill site to utilize the residual materials from the manufacturing process and generate energy.

PM 5 will have a speed of 1,500 m/min and wire width of 8,180 mm. The new machine will produce around 400,000 metric tons of packaging paper with a basis weight of 70 to 160 g/m².

PM 5 is expected to start-up by the middle of 2015, Voith said.

Modern Karton is part of the Eren Group and is one of the largest manufacturers of board and packaging paper in Europe. Currently the Corlu mill produces about 600,000 tons per year of packaging paper on two machines for both the domestic market and export market, representing about 40% of Turkey's total production capacity.

PAPER


Judy Lassa

- *Boise Inc.* has appointed **Judy Lassa** as Executive Vice President and Chief Operating Officer of the company, effective Jan. 1, 2013. Lassa takes over for **Bob Warren**, who requested a non-officer role within the company. Lassa began her 30-year career with Boise at the St. Helens, Oregon mill as a process engineer. She became an officer in 2000 and senior vice president of the paper business in 2010.


Ned Dwyer

- *Great Northern Paper* (GNP) announced that **Ned Dwyer** is the company's new president. Dwyer replaces CEO, **Richard Cyr**, who has served as GNP's acting president since Jan. 2012. Cyr will remain as GNP's CEO. Dwyer holds a Bachelor of Science degree in Paper Science & Engineering from the State University of New York and Syracuse University, and brings more than 26 years of relevant industry experience to his new role as president of GNP. Dwyer is also a veteran of the U.S. Air Force, where he served in the Strategic Air Command.

- *International Forest Products* is pleased to announce that **Karen Ziemba** has joined the company as its U.S. Sales Manager. Ziemba has more than 20 years of experience in the forest products industry and most recently held the position of Vice President of Sales at Mississippi River Pulp LLC. She will be located in the Green Bay area, representing IFP in the Midwestern markets and primarily working with IFP's Pulp Division.

- *International Paper* has named **Carl Gunter** as the new Mill Manager of its Prattville containerboard mill in Alabama. Gunter most recently served as the manager of the Pensacola containerboard mill in Florida and has 30 years of experience in the paper industry. IP said that former Prattville mill manager **Don Forst** has been named Director of its Capital and Manufacturing Service and will relocate to the Loveland, Ohio area. In a related move, **Brett DeJong** has been named Mill Manager for IP's Pensacola mill. Most recently, DeJong served as operations manager at IP's coated paperboard mill in Augusta, Georgia.

- *PaperWorks Industries* has appointed **Robert J. Nobile** to the position of Chief Financial Officer. Most recently, Nobile was CFO and Senior VP of Finance of Opnext. Nobile holds a Bachelor of Science degree in Accounting from St. John's University and is a CPA in New York State. He is a member of Financial Executives International and the American Institute of CPAs.


Lars Idermark

- *Sodra* has named **Lars Idermark** as its new Group President and CEO. Idermark is currently the CEO of PostNord. Idermark has a six-month notice period in his present job, and a specific date as to when he will take up his new position at Sodra has not yet been determined. In the interim, **Gunilla Saltin** will continue in her position as Acting Group President and CEO.


M. Jack Sanders


Harris DeLoach, Jr.

- *Sonoco* announced that **M. Jack Sanders** will become President and CEO of the Company, effective April 1, 2013, when **Harris E. DeLoach Jr.** retires as an active employee after more than 27 years with Sonoco. Sanders also was elected to Sonoco's Board of Directors. Sanders, 59, is currently president and chief operating officer of Sonoco. DeLoach, 68, is currently Chairman and CEO and has served as CEO since July 2000.

- *UPM* has appointed **Marko Koskela** as Senior Vice President, UPM Energy. Koskela formerlyu served as Vice President, Business Controlling, Energy and Pulp Business Group with UPM. He replaces **Anja Silvennoinen**, who is leaving after nine years in the company.

INDUSTRY ASSOCIATION

- *The American Forest & Paper Association (AF&PA)* announced that veteran Hill staffer, **Elizabeth Bartheld**, has accepted the position of Vice President, Government Affairs for the association. Bartheld joins AF&PA from Congressman John Sullivan's (OK-1) office where she served as chief of staff for nearly a decade.

FEBRUARY 4-8, 2013
PaperWeek Canada
PAPTAC
Fairmont Queen Elizabeth Hotel
Montreal, Quebec, Canada
Website: www.paperweekcanada.ca

FEBRUARY 28-MARCH 1, 2013
ASPI Spring 2013 Meeting
Association of Suppliers to the Paper Industry
Don CeSar Hotel
St. Pete Beach, Florida, United States
Website: www.aspinet.org

MARCH 17-19, 2013
Paper2013
AF&PA and NPTA
Fairmont Hotel
Chicago, Illinois, United States
Website: www.paper2013.com

MARCH 18-21, 2013
Tissue World Conference & Exhibition
UBM Asia Trade Fairs
Fira Barcelona
Barcelona, Spain
Website: www.tissueworld.com

APRIL 3-5, 2013
2013 Outlook & Strategies Conference
Paperboard Packaging Council
Gaylord Opryland Hotel
Nashville, Tennessee, United States
Website: www.ppcnet.org

APRIL 27-MAY 1, 2013
PaperCon 2013
TAPPI
Hyatt Regency Atlanta
Atlanta, Georgia, United States
Website: www.papercon.org

MAY 5-8, 2013
International Pulp Week
Pulp and Paper Products Council (PPPC)
Four Seasons Hotel Vancouver
Vancouver, British Columbia, Canada
Website: www.internationalpulpweek.com

MAY 9, 2013
26th Annual Global Forest & Paper Industry Conference
PwC
Sheraton Wall Centre
Vancouver, British Columbia, Canada
Website: www.pwc.com/ca/forestconf

JUNE 9-12, 2013
70th Annual Safety and Health Conference
Pulp & Paper Safety Association
Williamsburg Lodge
Williamsburg, Virginia, United States
Website: www.ppsa.org

June 23-27, 2013
59th Annual Pulp and Paper Industry Conference
IEEE
The OMNI Hotel
Charlotte, North Carolina, United States
Website: www.ieee.org

SEPTEMBER 23-25, 2013
2013 China International Paper Technology Exhibition and Conference
China National Pulp and Paper Research Institute
National Agriculture Exhibition Center
Beijing, China
Website: www.chinapaperexhibition.com

Containerboard Markets Maintain Steady Course Despite Weak Domestic Box Cut-Ups

Box and containerboard markets continue to exhibit the stability that has characterized the domestic market over the last couple of years. The most notable event in 2012 was the first containerboard price increase in two years. Box demand is expected to remain flat this year but barring a big change in either exports or an unexpected surge in supply the market should continue on an even keel in 2013.

By Harold M. Cody

Over the last twelve months the containerboard market has continued to exhibit the same steadiness we've seen for over two years. While there has been little growth and margins could always be better, producers are in relatively good shape particularly following price increases on both containerboard and corrugated boxes last fall. The most likely prospect for 2013 is for more of the same.

Mill production was relatively subdued in 2012. Total containerboard production in November was up 1.0% vs. 2011 but through the first eleven months of 2012 was running just 0.4% over the 2011 level at 31.46 million short tons.

Last year at this time the outlook wasn't very exciting either but the possibility of a major economic downturn was a major concern. A major worry was the huge cloud hanging over Europe due to the debt crisis and fears it would throw the global economy into a downturn. A major retreat by the weak U.S. economy — a "double dip" — was also cause for concern. While growth has been tepid in the U.S. and Europe in recent quarters a catastrophic downturn didn't occur. And while similar concerns remain about the strength of the economic outlook fear of a major downturn seems to have diminished.

U.S. GDP growth continues to be steady, but the relatively anemic rates of growth seen during much of 2012 were unable to overcome problems such as high unemployment and a weak housing market. GDP posted a solid 3.1% rate of growth in the third quarter of 2012, but this followed just 2% and 1.3% growth in the first and second quarters. Following a strong rebound in 2010, when industrial production ended a two-year slide by rising 5.3%, industrial output had been growing. But after rising just 0.2% in second quarter 2012, IP fell 0.7% in the third quarter.

Stagnant Box Market

As a result of lackluster economic growth, U.S. box shipments are flat. Through November 2012 shipments were 330.9 billion sq. ft. (BSF), a slight 0.2% gain over year earlier levels according to FBA. This remains well below historical levels such as the 390 BSF level in the 2004-2007 period. In turn, there is a surplus of corrugated box capacity.

Mill production was similarly subdued last year. Total containerboard production in November was up 1.0% vs. 2011 but through the first eleven months of 2012 was running just 0.4% over the 2011 level at 31.46 million short tons, according to AF&PA. Linerboard output is down year to date while medium production is up about 2.1% through November compared to a year earlier.

In Europe it's reported that virgin liner has been in tight supply but recycled grades are readily available due to continued weakness in European box demand owing to the weak economies of the region.

Given this rather weak economic performance and flat box demand, the market moved steadily along for most of 2012. And for most of the year there was little serious talk of a price increase being in the cards. However, by late

summer 2012 conditions had changed enough that a $50/ton price increase was announced effective in September on containerboard grades. To the surprise of many the increase was quickly enacted bringing 42 lb. grades up to around $600/ton at the high end, according to various sources. Box prices also rose about 8% during the fourth quarter, the first increase in over two years.

The success of the price increase, however, was all about limited supply not driven by improved demand. The constraints were the result of a plethora of planned and unplanned outages during the first half of the year. As a result, while shipments remained sluggish, mills have been able to maintain operating rates. In November, total operating rates were 96.9% and year to date have averaged 95.4%

In addition, a key factor leading to tight market conditions, and a major contributor to the success of the fall 2012 price hike, was low inventories. In October 2012 U.S. containerboard inventories dropped to the lowest level in literally years at 2.01 million tons. In November, the latest data available, they were running at just 3.6 weeks of supply, a slight uptick from the October level of 3.5 weeks. In fact, it's reported that some mills found it better to ship tonnage domestically rather than into the export market due to limited supply.

Overall the November containerboard and box plant data were good news for the industry. Some of the decline in box shipments — November shipments were off 1.2% — may be due to disruptions caused by the big storm in the northeast late last year.

Linerboard exports continue to play a key role in the overall tone of the market. Export linerboard production in November was 294,000 tons, down 3.2% compared to the prior year, bringing year to date export shipments to 3.5 million tons, a modest 1.4% gain over 2011 levels. Production for export in October was 283,000 tons, the lowest level for exports in 2012.

Export pricing has also been improving but the gains varying widely by market. Modest gains were made on export spot prices in some areas such as Asia while gains closer to home in South America, for example, are reported to be larger, with U.S. mills implementing a $50/ton increase.

U.S. Kraft liner export shipments reached nearly 4.5 million tons in 2011 according to the US Dept. of Commerce, nearly a one million ton increase over 2009 levels. By far the largest export markets are Europe and Latin America, which account for roughly half. Mexico has been a big growth area in the last 3-4 years. Thus, while weakness in Asian shipments has occurred other markets have maintained a relatively high level of tonnage overall.

One thing that hasn't been stable in recent months has been input costs, at least for OCC. Starting at very low levels in 2009, OCC prices rose steadily into 2011 in one of the longest such stretches ever seen. However, during spring and summer 2012, OCC prices fell for five straight months, dipping to under $100 in the U.S. for the first time in three years in July. Prices posted a bit of a recovery in late 2012, but so far gains are modest.

Reading the Tea Leaves

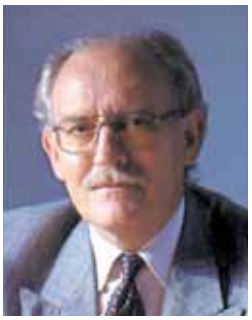
The question now is whether the factors that aligned to keep supply and demand in a narrow range of balance will continue in 2013. To a large extent it appears likely that they will.

First, let's examine demand. Most 2013 economic forecasts are subdued and call for continued sluggish growth — assuming the Federal Government navigates the "fiscal cliff" situation and avoids potentially throwing the economy into turmoil. In turn, box shipments at best might grow 1%, following little or no growth last year, and it may continue to just slip sideways and remain at the current level. Until the economy grows at stronger rates — e.g., 3% or more — box demand simply won't post any major gains. Most projections don't call for any large economic gains until 2015 at the earliest.

One thing to watch closely is capacity that will be coming on line this year. A total of 850,000 tpy of recycled capacity based on new/converted machines at Atlantic Packaging and Cascades will come on-line in 2013. And significant capacity is also coming online in China, which is one reason liner exports to China were weak in early 2012. Various sources report that almost 10 million tonnes of containerboard capacity were added during 2011-2012 in China.

Thus, assuming the wheels don't fall off the economic train, the recipe for success will likely continue to work. Capacity control, in conjunction with significant Kraft liner export tonnage should maintain operating rates which in turn sustain pricing and margins. Some weakness in selected export markets may occur but it appears likely this could be offset by solid shipments to other regions. If inventories remain low and producers can work their way through the slow winter months, it's even possible they may be able to take a shot at another price increase. Even if they don't, the status quo isn't all bad. ■

Harold Cody is a contributing writer for PaperAge. He can be reached by email at: HCody@paperage.com.



What Worries Our Industry

At the end of 2012, three conferences in Europe brought together CEOs, chairmen, presidents, consultants and editors. I spent some time listening to their views on our industry, and three main issues preoccupied them.

By David Price

In the closing six weeks of 2012, conferences held in London by Hawkins Wright (Pulp Symposium) and CPI (workshop), and Europe's CEPI (European Paper Week in Brussels) attracted delegates from all over the world. I counted about 35 CEOs and a load of other senior players from Brazil, North America, China, Southeast Asia and, of course, Europe and Russia. There were strong views and many dissenting voices over some of the issues.

One of the largest biomass power plants in Central Europe is located in France and operated by Dalkia, one of Europe's largest energy service providers. The combined heat and power plant uses mainly bark and forest residues as fuel to produce 50 megawatts of electricity for the national grid and 74 megawatts of process steam for Smurfit Kappa's paper mill.

However, the three major issues appeared to be: closures and job loss, the drive for alternative energy sources, and China.

Closures and Job Loss

The pages of this journal and others record, each month, the melancholy roll call of closed mills and layoffs in the northern hemisphere. In the next few months in Europe, Stora Enso and tissue maker Kimberly-Clark (KC), separately, will close eight mills, streamline seven others and cut over 2000 jobs. Small Austrian and German mills are also being closed and workers are being laid off.

The language describing the events is all to do with "profitability, market positions, growth opportunities and efficiency improvements." Private equity firms, normally active in picking up distressed companies, stripping assets and then selling them off, have been unusually inactive during the last few months, so it must be tough out there.

Some CEOs I spoke to said poor forward planning was partly responsible for some closures. Others believed that obsession with volume, inability to control costs, low-cost competition and rising energy prices were to blame — they are all correct of course. A Finnish consultant said that the industry had been hit by a "costs tsunami."

Energy

Alternative energy translates to biomass which is hinged to the government aid and legislation that come with it. I was intrigued by an editor's column in which he reported that on his trip to Finland where he was to cover the paper industry, he never visited a single pulp or paper mill. Instead, all he was shown was biomass energy projects.

Another editor was at European Paper Week in Brussels and commented that Europe's paper industry ". . . has become a subsection of the forest fiber industry sector which is positioning itself as part of the bio-economy."

The worry now, in Europe, is that the legislators are the driving force behind change in the forest industries. Dr. Wolfgang Palm, CEO of Germany-based Papierfabrik Palm, has a very sophisticated argument. He says, as European

countries run down their nuclear power plants, the power gap is expected to be filled mainly by renewable energies. He makes a point when he poses the following question: How could a pulp and paper manufacturer be seriously considered as an energy provider to the national grid? And he points out that a pulp and paper producer would be unable to achieve the scale of a mainline energy provider like Shell or GE.

In Germany, the government is making policy so that energy intensive primary industries like steel, chemicals, nonferrous metals and glass will have, among their energy providers, a biomass supplier. The unspoken question is: who then will make paper and board in its traditional form?

One French company chairman was furious with the energy legislators. He drew my attention to an EU grant of 10 million euros going to a mill in Bosnia and Herzegovina to upgrade its biomass capability.

"What nonsense is this?" the chairman exclaimed. "I have not heard of this place, I cannot even find it on any map! You'll see this money used for some new cars, some luggage and a mistress," he fumed.

I suspect the tide is beginning to turn against the hasty drive by the forest industries — driven by legislation — to become big players in the biomass/energy sector. Much will depend on the willingness of the forest industries to see this. They must put up a concerted challenge to legislators that renewable energy may not be the best way forward for an industry that will always have biomass as part of its operational DNA. It needs, also, to keep making pulp, paper and board.

China

Nearly every delegate I spoke with had a view on China. A Russian delegate explained that a new Russian pulp mill in at Ilim's Bratsk branch in Irkutsk Oblast region, will export all its production to China. He added that Chinese investment will help start-up a pulp mill in Belarus (old European Russia) in 2015. He also predicted, as I have in the past, that China will start looking at struggling pulp mills in Europe.

China has already moved into the wastepaper market in Europe and is buying up — through non-Chinese agents — wastepaper collectors and processors who then ship to China.

A delegate from the French bank group BNP Paribas said that Chinese officials were doing the rounds with European investment banks. They were extolling the new, favorable investment climate for forest industries in China, which the new Five Year Plan offers. But no one's rushing to test it. ■

David Price is a contributing writer for PaperAge. He can be reached by email at: DPrice1439@aol.com.

Lightweight Containerboard in North America — "Can You Hear Me Now?"

When it comes to lightweight containerboard, global consumer packaged goods companies and retailers want the same efficiency and sustainability advantages in North America that they have outside of the region. So what is holding North American producers back?

By Sarilee Norton

Lightweights are generating a lot of "buzz" in the paper and packaging community. Even a casual observer of the industry would be hard pressed to say he or she hadn't heard a presentation or read a story that mentioned lightweights as a trend to watch. Yet many containerboard suppliers and corrugated producers say they simply don't see much interest in lightweights and that demand for 26# and lighter grades hasn't changed significantly in the last two decades. Is there a disconnection, or is there some other explanation?

WHAT IS THE DEFINITION OF "LIGHTWEIGHT" LINERBOARD?

For this article, lightweight linerboard refers to basis weights less than 26# and lightweight medium refers to basis weights less than 23#. But are these the "right" definitions? That seems to depend on whom you ask.

Prior to the industry's adoption of Alternate Rule 41/ Item 22 ("Rule 41") in 1991, box transit certification was based on a burst as measured by the Mullen test and a minimum combined weight of facings standard. Virtually all linerboard sold domestically was one of six basis weights: 26#, 33#, 38#, 42#, 69#, and 90#, which conveniently met the minimum weight standards Descriptively, these were extra-lightweight (26#), lightweight (33#), midweight (42#, 38#), heavyweight (69#), and extra-heavyweight (90#).

Alternate Rule 41 allowed box-makers to use an edge crush test (ECT) standard for box certification. ECT is directly related to ring crush values for the combined board components. So suppliers now had to be more concerned with the compression strength of the containerboard.

Since the Rule 41 change there has been a proliferation

Uniform Freight Code Standards

Maximum Weight of Box and Contents (lbs.)	Maximum Outside Dimensions, Length, Width and Depth Added (inches)	Maximum Bursting Test, Singlewall, Doublewall or Solid Fibreboard (psi) or Maximum Puncture Test Triplewall Board (inch oz. per inch of tear)	Maximum Combined Weight of Facing(s) of Doublewall or Triplewall Board or Minimum Combined Weight of Plies Solid Fibreboard, Excluding Adhesives (lbs. per 100 sq. ft.)	Minimum Combined Weight of Facings Using 'Standard' Weights for Combination
SINGLEWALL CORRUGATED FIBREBOARD BOXES				
20	40	125	52	26+26
35	50	150	66	33+33
50	60	175	75	42+33
65	75	200	84	42+42
80	85	250	111	69+42
95	95	275	138	69+69
120	105	350	180	90+90

Figure 1: Prior to the adoption of Alternate Rule 41, more than 90% of certified boxes could be made from just five linerboard basis weights.

Source: National Motor Freight Traffic Association, Inc., 2007.

of grades. Mills that were capable of producing higher ring crush values could reduce the nominal basis weight of their product and mills that could not achieve the ring crush specification had to add fiber to meet the grade requirement.

MEDIUM — IT'S NOT JUST 26# ANYMORE

Before the change to Rule 41, 80% of all medium consumed in North America was 26#. Typically, heavyweight medium was used only for the most demanding applications, where boxes might be exposed to conditions such as high moisture, temperature and humidity changes or prolonged storage. Now medium could be used to optimize cost/performance considerations for the combined board structure. So while heavyweight medium has been evolving since the 1980s, 23# didn't emerge until after 1995. Box-makers recognized that if the box contents were self-supporting, such as metal cans or glass jars, the box didn't need to carry the load, and using 23# medium reduced the fiber content of the medium layer by 11%.

WHERE WE ARE TODAY? — LIGHTWEIGHTING YES, BUT NOT LIGHTWEIGHTS

Many industry observers would say that North American containerboard is the best available anywhere. Further, North America supplies the rest of the world with the most desirable recovered fiber, e.g., old corrugated containers (OCC), old newspapers (ONP) and mixed paper. North America's abundance of forest resources and network of large-scale virgin containerboard mills is unmatched in the world and has historically provided the region with the lowest cash cost per ton. And on-going investment in machine improvements and upgrades has increased the performance of containerboard such that box-makers can use lower basis weights and still meet ECT requirements. In fact, for the most commonly used weight categories, which are midweight, heavyweight and lightweight, the old standard 42#, 69# and 33# have been displaced by lighter weight, high performance grades, 34-37#, 55-61# and 27-32# respectively.

We have clearly seen a trend to lightweighting, but as the chart in Figure 2 shows, lightweights have not increased as a portion of the total linerboard mix at all.

THERE'S NOT A LOT OF LIGHTWEIGHT CONTAINERBOARD IN NORTH AMERICA

In Europe and most other regions of the world, the average basis weight of boxes is 20% lower than in the U.S. The difference is in the basis weights of the box components — the rest of the world uses lighter weight containerboard, predominately made from recycled fiber. Some reasons why:

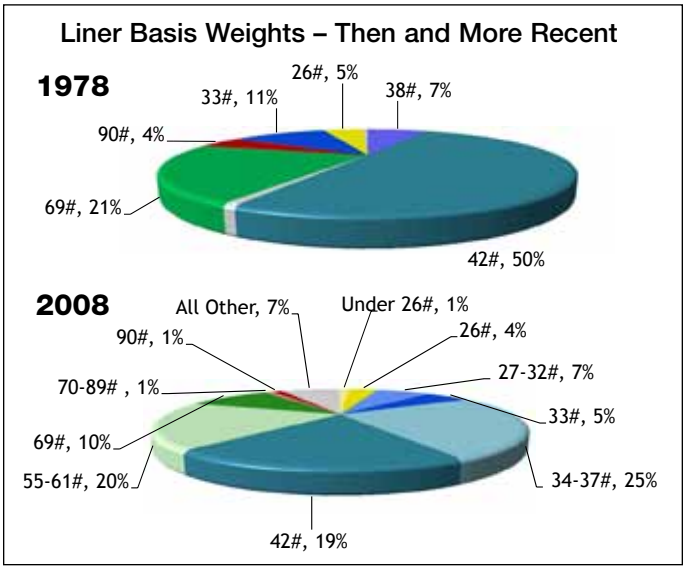


Figure 2: As the number of linerboard grades has proliferated, categorizing by basis weight has become more complicated.
Source: Future of Lightweight Containerboard in North America, 2010.

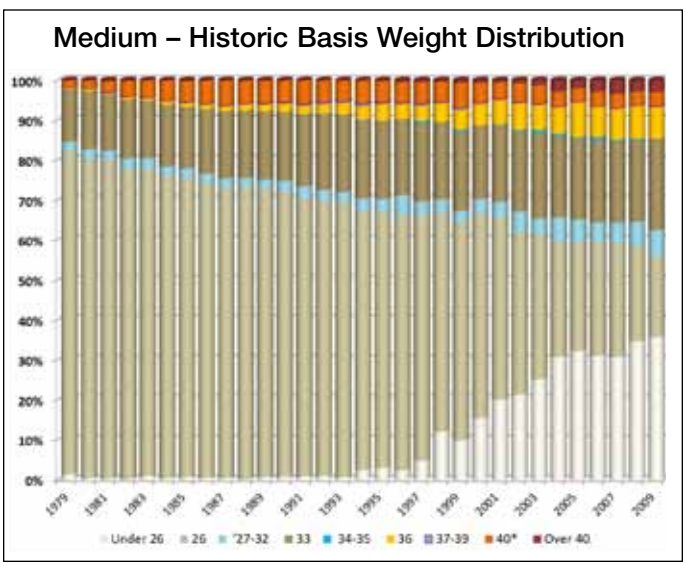


Figure 3: 26# now accounts for less than 20% of medium consumed in the U.S.

- The North American containerboard industry developed around the availability of virgin fiber. Wood was plentiful and softwood, especially southern varieties, made superior paper.
- The size and topography of the North American continent and, in turn, the distances and shipping conditions encountered required robust packaging.
- North American containerboard machines, which collectively have a median age of close to 45 years, were typically engineered to target a midweight or heavyweight "sweet spot" and run most efficiently in a that particular weight range.

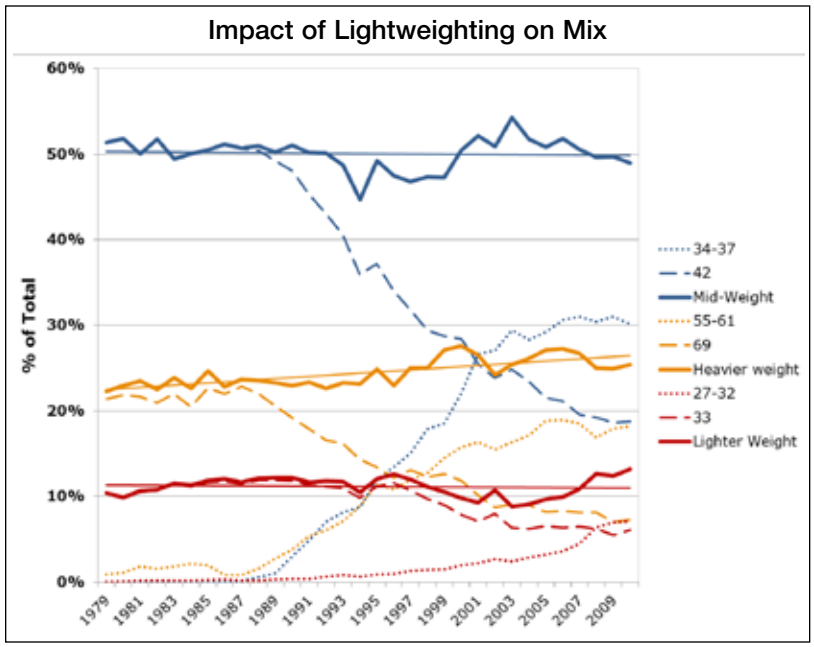


Figure 4: Lighter basis weight alternatives have displaced the traditional Mullen grades in the most popular weight categories.

- The front-end investment required to build a virgin mill dictated that paper machines be substantial and long-lived — and most have been. The cost of replacing a significant number of North American containerboard machines would be prohibitive.
- There simply hasn't been enough demand for lightweights to justify further investment in capacity.

WHO PRODUCES LIGHTWEIGHTS IN NORTH AMERICA TODAY?

Prior to 2000, no containerboard machines had been built in North America for the purpose of producing lightweights. Since then, a handful of lightweight-capable machines have been introduced. In 2006, International Paper converted a machine in Pensacola, Florida to run lightweight containerboard. The machine can run as low as 18#, though the company's focus for the output has been on export markets. New Forest was built in Scarborough, Ontario in 2006 as a joint venture between Atlantic Packaging and Mitchel-Lincoln. It was the first new machine in Canada in 25 years. It can run both medium and liner, in basis weights as low as 20#.

Pratt started up its third U.S. mill in Shreveport, Louisiana in 2008 to run lightweight liner and medium, 18-30#. The machine uses a significant portion of mixed waste in addition to OCC.

KPAQ, previously RENEW, is a conversion of a fine paper mill formerly owned by Tembec. So far only one machine is producing lightweight linerboard in the 22.5 - 35# range. Industry sources indicate that KPAQ produces about 150,000 tons for the domestic market.

Resolute (formerly AbitibiBowater) modified a newsprint machine in Coosa Pines, Alabama to run lightweight containerboard and paper. The company ultimately decided it was not going to try to commit additional assets to what represented a new segment for them. We believe this decision was largely based on internal considerations rather than market potential. SP Fiber Technologies (formerly SP Newsprint) has picked up the ball from where Resolute spotted it. SP appears to be serious about the containerboard segment. Let's see what they can do with it.

WHO WILL BE PRODUCING LIGHTWEIGHTS?

Despite a slow start for lightweights in North America and a dearth of machines that currently produce the grade, the landscape is changing. Figure 5 highlights major (more than

Major Lightweight Initiatives Since 2006

KapStone is also focused on lightweight kraft linerboard and Longview markets lower basis weight grades

Company	Location	Capacity	Material	Origin
International Paper	Pensacola, FL	500,000	Kraft linerboard	Conversion from uncoated free sheet
New Forest	Scarborough, ON	250,000	Recycled liner/medium	Greenfield
Pratt Industries	Shreveport, LA	350,000	Recycled liner/ medium	Greenfield
KPAQ	St. Francisville, LA	220,000	Kraft linerboard	Conversion from fine paper
~~AbitibiBowater~~ SP Fiber Tech	~~Coosa Pines, AL~~ Dublin, GA	100,000–200,000(?)	Recycled containerboard/ paper	Conversion from newsprint
Greenpac*	Niagara Falls, NY	540,000	Recycled linerboard	New machine adjacent to existing site
Atlantic Packaging*	Whitby, ON	300,000	Recycled containerboard	Conversion from newsprint machine

Figure 5: By the end of 2013, lightweight capacity could represent as much as 6% of North American containerboard capacity.

*Greenpac is scheduled for start up in the third quarter of 2013. Atlantic Packaging's Whitby Mill is scheduled to open in March 2013.

100,000 tons a year capacity) lightweight initiatives since 2000. In addition, Kapstone is producing and has committed to continuing to supply the market with high performance lightweight grades. Longview Fiber is also capable of producing lightweights.

A NEW START-UP AND A RE-STARTED CONVERSION IN 2013

In 2011, Norampac, a division of Cascades Canada, announced that they would be the majority partner in "Greenpac," a partnership that would build a state-of-the-art recycled linerboard machine in Niagara Falls, New York. The Metso-supplied machine will have a trim width of 328 inches and capacity to produce 540,000 tons a year. The basis weight output for the machine is expected to range from low 20s# to 35#. Notably, the machine is sized to produce three-out rolls in widths that are the most desirable for today's popular 98-inch and 110-inch corrugators.

Norampac's current capabilities include six machines at five Canadian and New York State locations, with an estimated capacity of one million tons. Other Greenpac operating partners include Jamestown Container, Containerboard Partners and affiliated box plants. Startup is slated for early third quarter of this year.

Late last year, Atlantic Packaging announced that the company will be re-opening its idled Whitby, Ontario newsprint mill to produce lightweight containerboard. In a company press release in November, David Boles, President of Atlantic Packaging said, "What we're talking about is a disruptive technology that is capable of producing low basis weights (lighter paper) with sustainability and strength characteristics unlike anything in corrugated packaging today." The machine will have a capacity of 300,000 tons per year. In 2006, Atlantic and its joint venture partner Mitchel-Lincoln, launched New Forest Paper Mills in Scarborough, Ontario. The New Forest machine has an estimated capacity of 250,000 tons per year.

WILL CONTAINERBOARD REACH A TIPPING POINT FOR LIGHTWEIGHTS IN 2013?

The industry pushed to change the old Rule 41 so that companies could take advantage of better papermaking technology and machine capabilities. Alternate Rule 41 allowed box-makers to determine their paper requirements by performance, not weight. Containerboard suppliers have taken advantage of the opportunities that high-quality, virgin fiber based materials offer to replace traditional linerboard and medium grades with lighter weight options. But lightweights, defined in this article as linerboard less than 26# and medium less than 23#, have been largely avoided in the U.S. and Canada.

North America has the technology available to make containerboard comparable to the best of what's produced in Europe. And in Europe, lightweighting and lightweights are mainstream. Global consumer packaged goods companies and retailers want the same efficiency and sustainability advantages in North America that they have outside of the region. So what is holding North America back? We believe it has been the lack of availability of high-quality lightweights that are (1) consistent in their performance and aesthetic characteristic and (2) offered by well-established mills with the production experience and industry knowledge to manufacture, market and support lightweights successfully.

STILL A LOT OF QUESTIONS

Virgin versus recycled — who wins? North America is the only region where the cost differential between virgin and recycled has a significant impact in determining which companies are advantaged cost-wise — and it impacts their strategies. If lightweights are the future, does it matter whether they're made from virgin or recycled fiber? Would anyone build a virgin mill, with its high capital cost, if they believed that over time fiber costs wouldn't clearly favor virgin mills? And at what point do old mills become too expensive to operate and maintain cost-effectively?

We believe that by the end of 2013, lightweights will represent at least 6% of containerboard capacity in North America, based on machines in place or scheduled to start up this year. Add to that the capacities of other machines that can but currently do not run lightweights, machines that already run modest quantities of lightweights, and the potential for new entrants from conversions. With this in mind, the issue of lightweight availability should no longer be a barrier to converters and end-users wanting to take advantage of cost and sustainability benefits that lightweights can offer. ■

Sarilee Norton is President of Norton Associates, a consulting business that specializes in the paper and packaging industries. She has over 30 years of industrial experience in strategy, business development, market planning and corporate communications, as well as in sales and general management. Most recently she was President of the Tru-Tech division of Temple-Inland. Previously she was Vice President of Corporate Strategy for Packaging Corporation of America, where her responsibilities included directing the company's strategic planning and analysis activities and strategic transaction opportunities. Sarilee is currently working jointly with RISI on a comprehensive directory of U.S. corrugated operations that will be available late this year. She can be reached by email at: sarileenorton@cox.net.

"Am I Doing the Right Maintenance?"

While a pulp and paper mill may have plenty of effort devoted to the efficient use of resources to perform maintenance, it is equally important to have a plan for determining the most effective maintenance to be done.

By John Yolton

Many organizations tasked with the responsibility to improve reliability have developed efficient organizations and an appropriate response to most of the needs associated with operating equipment in a capital intensive manufacturing process such as pulp and paper.

With the increasing role of both operations and maintenance in helping to meet expectations for the operation's bottom line, tolerance for equipment failures has diminished. Maintenance is no longer performed in isolation and the activities of the resources associated with maintenance have become part of the overall enterprise effort to effectively compete through improved asset reliability.

RISK ASSESSMENT

Enlightened organizations are embarking on a journey down the reliability improvement road as a result of learning from the benchmarks of best practices in their own as well as other industries. Most notable among the leaders of this maintenance process change has been the civil aviation industry, followed closely by the risk assessment and avoidance efforts of the power generation industry, especially nuclear facilities. In each of these industries, the driving force behind a movement toward better reliability of the equipment has been the consequence of failure.

If this piece of equipment fails what are the consequences? If this work process fails, what are the consequences to the business? The process of assessing risk for each of the "systems'" components eventually led to the development of a best practice in use throughout all industries today, namely Reliability Centered Maintenance (RCM).

The fundamental concept of RCM is to evaluate all "critical" assets down to individual components, determining (before experiencing failures) whether there is an opportunity for employing some strategy to avoid failures and ultimately, the serious consequences to the enterprise.

REAL LIFE SCENARIO

As a means of illustrating the issue of reliability, the following is a real life example from experiences at a large North American market pulp and communications paper mill with a well-designed maintenance effort. These efforts include a maintenance organization heavily focused on the planning of work, a rigorous and demanding preventive maintenance program, and the use of a computerized maintenance management (CMMS) system to assist with the automation of information collection, retrieval and reporting.

One day, while attending the morning production meeting at the main office, the Engineering & Maintenance Manager was summoned from the meeting by one of the maintenance superintendents. He was told that in the change out of the bottom first press roll (a suction roll) on the scheduled machine outage currently underway, the "roll was damaged."

CATASTROPHIC FAILURE

Awaiting the Manager was a scene from any maintenance manager's worst nightmare.

Approaching the press section, he noticed that there were felt rolls hanging off the frames at odd angles, and when he looked down into the basement, the full impact of the situation struck home. There, imbedded in the concrete floor, was the bottom first press roll. Across the machine, on the backside, the roll's drive gearbox had broken off its base and

sustained significant damage to its cast iron housing.

Without going into details, the clean-up effort placed the machine back in service some four days later. As usual, the maintenance response was laced with ingenuity, resourcefulness, and untiring effort.

> Approaching the press section, the Engineering & Maintenance Manager noticed that there were felt rolls hanging off the frames at odd angles, and when he looked down into the basement, the full impact of the situation struck home. There, imbedded in the concrete floor, was the bottom first press roll.

The point, however, is not expeditious return to service. What the mill lacked, and this became abundantly clear that day, was a reliability strategy for its critical assets, which, it was determined later, included that machine room's bridge crane.

DO THE RIGHT MAINTENANCE

This particular mill had the tools and applied the discipline to business processes for achieving significant improvements in the efficient use of resources, e.g., maintenance done right. The mill's maintenance process, however, lacked one essential element of "world-class" maintenance, e.g., a process to help determine the right maintenance to perform.

While there was plenty of effort devoted to the efficient use of resources to perform maintenance, there was no strategy for determining the most effective maintenance to be done.

RCM

This is the role RCM plays in the management of assets — a process to assist in developing strategies for assets that includes evaluating whether proper attention and resource allocation is being performed. The basic steps of RCM include:

- Determine the asset's function,
- Establish failure modes,
- Establish the consequence of failure,
- Determine appropriate maintenance strategy,
- With feedback, adjust the strategy.

RCM is a proven methodology for controlling equipment-related failures in industry today. The negative for the implementation for RCM has always been the demand for time and effort to perform the analysis using the standard techniques employed by RCM consultants. In the paper industry, use of what might be termed "streamlined" RCM techniques has been very effective. In fact, one West Coast mill successfully employed the methodology's techniques to develop their basic care program in 1980, long before the RCM term was coined.

Caution must be employed in the selection of assets to be analyzed, as well as a thorough understanding of the functions, failure opportunities, and proper maintenance strategies for the properly selected candidates.

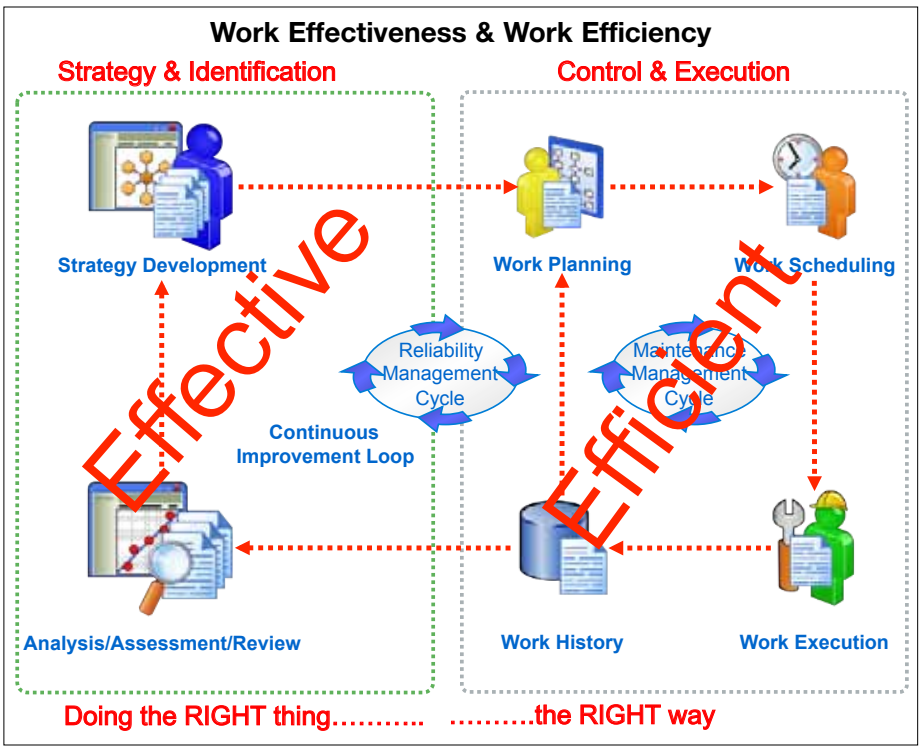


Figure 1. Effective maintenance done efficiently.

IDENTIFY ASSETS FOR RCM

The first step in developing an RCM strategy is to separate the operation into its individual processes with component pieces.

Using the mill's P&IDs and asset hierarchy, for example, the equipment that is crucial to production, (as an example of one set of 'criticality' criteria), will quickly determine how much of the mill's equipment fits this category.

This is the functional assessment, e.g., what is the equipment's function and how does this fit into the overall production, and/or safety, and/or environmental strategy (depending upon the selection criteria)? Now it can be determined which of those selected assets will result in the most loss if malfunction occurs.

As the selection of specific assets narrows, assessment of the functions of component pieces making up the asset is performed. One objective here is not to perform analysis process on everything,

The first step in developing an RCM strategy is to separate the operation into its individual processes with component pieces.

but rather the selected critical assets.

Back to the crane; is its function critical to production? Yes, very much so. It therefore makes the list. Unfortunately in the real-world example used, no prior RCM analysis had been performed prior to the failure.

DEFICIENCIES IDENTIFIED

After the fact, analysis of the catastrophic event described above revealed many deficiencies.

The machine room is narrow. The design of the machine room is such that rolls from the wet end are hoisted snuggly up against the bottom of the building's bridge crane and then the bridge crane travels over the top of the machine — with its suspended load — all the way to the dry end for servicing or replacement.

The bridge crane had been designed without either of the two hoists being capable of carrying the load of the heaviest roll on one hook. A design commonly used to reduce overall project costs.

The mill's PM program called for regular inspections of the crane and hoists, based on manufacturer recommendations. These recommendations often designed to protect the vendor's warranty and performance obligations over-commit resources, encouraging a PM routine to be missed here or there, thus diminishing the objective of PM.

Usually the crane is visually inspected prior to any machine outage. This routine includes inspection of the cables, hooks, and movement of the hoists. On a less frequent basis, but regularly, the motors, motor control, and gearboxes and couplings are inspected. Lubrication recommendations were followed. Annually the crane rails were inspected for wear and their fasteners for looseness or fatigue. The pendant and control box are replaced/repaired as required.

ROOT CAUSE

Follow-up investigation revealed that the component failure was the "up" limit switch installed to stop the hoist before the hook's cable block collides with the cable drum as the load is lifted. In this case, each of the two hoists was connected to ends of the roll as it is raised for its ultimate journey across the top of the machine to the dry end.

"Normally" the crane operator was a seasoned mechanic who has performed this task many times in the past and knows ('by feel') the amount of head room required for the roll to clear the top of the machine and not to run up against the cable drum.

This day was different, involving a training issue that contributed to the problem. The relatively new crane operator kept raising the roll, mistakenly believing the limit switch would work, until one of the hoists' blocks slammed up against the cable drum.

The "up" limit switch failed to perform as designed — it did not stop the hoist from winding the cable. The hoist "slipped" under severe strain, causing the roll on one end to drop placing the entire roll's weight on the other hoist and hook. In a scene suitable for any action movie, the roll tumbled end-over-end through the press section striking frames, felt rolls, and felt stretch mechanisms and gearboxes on its way to the basement. The roll's integral, extended drive journal burst through the concrete floor in the machine room basement and imbedding the roll in the ground below.

ROOT CAUSE

Examination of the mechanically actuated roller lever limit switch revealed that moisture had attacked the metallic parts of the mechanism. The lever arm either broke off without activating the switch, or the switch was rendered useless by corrosion. Typically, the bridge crane was "parked" on the wet end directly over stock prep equipment, a situation thought to have directly contributed to the failure of the limit switch.

FAILURE MODES

Had RCM analysis taken place at the time, development of a list of component parts and their function within the crane's "system" (to determine which require attention) would have been performed prior to any failure. Inquiry of how they fail and the likelihood of that part failing in that mode would have been determined, as well as the presence of any symptoms to help to determine if failure of the component is occurring.

How can this limit switch fail? Research may be required to answer that question. Is it likely to fail from wear? Is it likely to fail from fatigue? Is it likely to fail from corrosion? Is it likely to fail from distress? Are there any signs of these types of failures that can be observed?

From these potential failure modes, the consequences of failure in any of these modes, e.g., if this part fails in this mode what happens, is sought? The process is intended to narrow the focus of limited resources required to fulfill a strategy for the asset that meets the objective. Too often, a well-intentioned PM system becomes overloaded with assignments (demand for resources).

MAINTENANCE STRATEGIES

Next in the RCM process is the determination of a maintenance action that will

neutralize the affect of the component's failure, or forewarn of an impending failure, or simply to let it fail. Five fundamental maintenance strategies from which to choose are:

- Monitor the asset's condition …and, based on condition, replace/repair before failure.
- Perform preventive maintenance… lubrication, inspection, adjusting, cleaning.
- Test performance…exercising the equipment to see if it performs as expected.
- Modify the situation…corrections to equipment to eliminate a design flaw, retrain, etc.
- Or, simply let it fail.

Any of these strategies might be correct for any given component of a system.

In the case of the "up" limit switch on the bridge crane hoist, one strategy could be observing its condition — except without removing its cover there is no way of determining the internal condition.

Certainly, modifying the limit switch to some other type of more reliable proximity sensor is a possibility. The previous action taken at this particular mill was to "test it" periodically, especially before each machine down.

The test was simple. While someone was raising the hook, usually just a few feet off the floor, another worker would trip the switch to see if the hoist would stop. The mill also took the action to replace the switch on a regular basis.

BUILD A LIBRARY

The appropriate maintenance response determined by the RCM process can be incorporated into the crane's asset optimization strategy. The task becomes part of the "pre-planned" library for that machine's shutdowns. As RCM is used for more and more equipment, the growing library of preplans reduces the ongoing effort by planners to develop appropriate maintenance strategies for each asset.

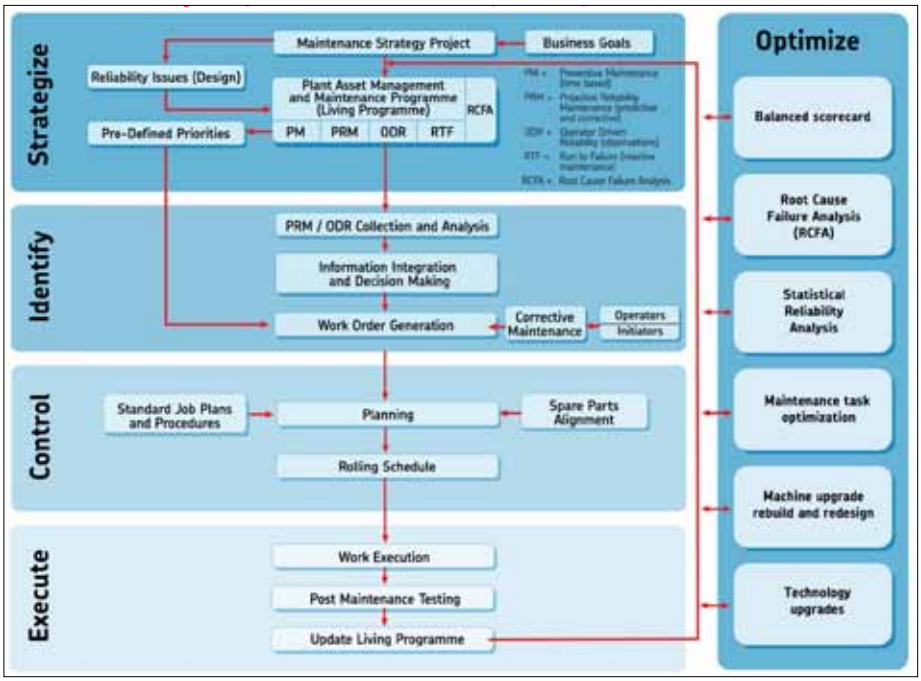


Figure 2. SKF's Asset Efficiency Optimization (AEO).

The workflow for the reliability improvement cycle is shown in Fig. 2.

INFORMATION SYSTEM

The mill in this example had a computerized information system that was able to accommodate the RCM process up to a point. Missing information therefore had to be collected, analyzed, and adjusted by a reliability engineer.

These then are the basic steps in an RCM process. Foremost among the requirements is a user-friendly information system that will support asset strategy efforts, otherwise the whole exercise will become bogged down in paperwork and remain unused because of resulting frustration.

CONCLUSION

So what was the outcome of this mill's experience? Neither condition monitoring, nor any time-based maintenance activity would uncover or prevent failure of the limit switch when needed most. This "hidden" failure potential therefore had to be designed away as a source of future problems.

A "load evener" was designed that used both hoist hooks and could be swiveled 90 degrees to allow the roll, or any other wet end roll, to be carried down the operating (tending) aisle to the staging/repair/replace preparation area on the dry end. "Designing for reliability" is another corrective action perfectly acceptable for solving reliability issues.

You can see from the example that determining your baseline "critical" assets' maintenance strategies identifies potential issues, but the process will also provide you with the resource requirements going forward, e.g., how many operators and mechanics will be deployed.

The paper industry has come a long way in being able to manage the resources tasked with keeping the cost of unreliability in check, however the one question that must be asked time and time again is, "…am I doing the right maintenance?" ■

John Yolton is nearing 50 years in the Pulp and Paper Industry. After years of managing operations and maintenance activities for many diverse businesses within the industry, he is currently Maintenance Strategy Consultant for SKF. He can be reached at john.yolton@skf.com.

Boiler MACT – Implications for the Pulp and Paper Industry

EPA has handed-down its final, final version of the new Boiler MACT standards, and although the new rules may not be perfect, the clock is ticking for the industry to bring its boilers into compliance.

By John O'Brien, Managing Editor

The National Emission Standards for Hazardous Air Pollutants (NESHAP) for Industrial, Commercial, and Institutional Boilers and Process Heaters, or, as it's more commonly referred to as, Boiler MACT (Boiler Maximum Achievable Control Technology), was first finalized by the U.S. Environmental Protection Agency (EPA) in February of 2004.

In 2007, the standard was returned to EPA to be rewritten. EPA completed the "new" rule on March 21, 2011.

However, after receiving additional data through an extensive public comment period, EPA in May 2011 took the unprecedented step of staying the effective date of the rule while it reconsidered several key aspects of the rule.

Six months later, EPA completed its re-evaluation process and on Dec. 2, 2011 issued a re-proposed rule which would require emission limits and work practice standards to be met for industrial, commercial and institutional boilers across the nation.

On Dec. 20, 2012, EPA publicly announced its "final" Boiler MACT, Incinerator, and NHSM Rules.

PaperAge recently spoke with Donna Harman, President and CEO of the American Forest & Paper Association (AF&PA), to gain a better understanding on some of the implications the new Boiler MACT standard will have on the U.S. pulp and paper industry.

In May of 2011, AF&PA petitioned EPA to reconsider its revised Boiler MACT rules as they were originally proposed by the Agency in March of that year. What was your message to the EPA?

First, we felt the court had put EPA in an untenable position by forcing it to finalize rules within a month when it asked the court for 15 more months. In fact, EPA, in a very unusual move, signaled in the March 2011 final rules that it intended to immediately reconsider several important issues it did not have time to address. Our challenges to the rules ensured the court knew that we also didn't think EPA was finished or had done its job given the extensive comments and data it received.

> "Complying with these rules will be the most significant environmental investment by the paper industry in more than a dozen years."
>
> *— Donna Harman, President and CEO, AF&PA*

Second, once EPA formally started the reconsideration process and held the rules in abeyance, we quickly agreed to hold the litigation in abeyance, letting EPA do its job of revising the regulations.

EPA made adjustments to a number of key aspects of the originally proposed rules. Did they get it right?

EPA has made a number of helpful changes, but we are still evaluating the rules to ensure there are no surprises and to determine if there are new implementation issues. The Boiler MACT limits appear to be technically achievable, and by that I mean traditional pollution control devices when installed can get down to these protective levels. However, it is important to remember that the paper industry will end up spending more than $2 billion dollars in scarce capital to comply, assuming we can still burn the various biomass residuals identified in the rule.

Given the still-recovering economy and the economic situation within some sectors, these will be significant investments. Complying with these rules will be the most signifi-

cant environmental investment by the paper industry in more than a dozen years — since Cluster MACT implementation.

EPA says, of the 1.5 million boilers in the U.S., less than 1%, or about 2,300, will need to meet numerical emission limits, while 13%, or about 197,000, would need to follow work practice standards, such as annual tune ups, to minimize toxics. The remaining 86%, or about 1.3 million boilers are not covered by the rules. Which group would the majority of pulp and paper manufacturers fall into?

Boilers at Kraft pulp mills are part of the 2,300 that must meet the tough emission standards. In fact, more than 10% of the affected boilers are in our sector (about 275). Boilers at smaller mills, such as box plants and converters, are subject to the area source rule (so called Generally Achievable Control Technology or GACT), which has work practice obligations that are more affordable.

How much time do manufacturers have to bring their equipment into compliance?

The rule gives major boiler operators three years to comply with the possibility of another year to be granted by state regulators. Giving a fresh three years from the date of publication is essential to the paper industry given the number of changes in the final rule that could not be anticipated.

How will EPA determine the date of compliance for the new rule?

Essentially, what EPA did in the final regulation was to reset the clock — they reset the timeframe for compliance. Under their earlier proposal, the compliance date would have started in March of 2014, which meant companies had only a little over a year to be in compliance. So they completely reset the start date so that the compliance timeframe now is three years from the date of publication of the finalized new rule.

When will the new rule be formally published?

The new rule has been released on the Internet, but it has not been formally published in the Federal Register. We're expecting that could happen towards the end of January or the first week of February, making the date of compliance the end of January or beginning of February 2016.

Is there any flexibility in the time to comply?

Yes. EPA indicated that states have the authority under the law to grant an additional year of compliance when it's warranted. They recognized some of the facts that we presented about the complexity and number of boilers required to make changes, along with the difficulty involved in planning, engineering, purchasing, and securing of the actual equipment and completing the installation of that equipment. We made very strong arguments that three years was insufficient. So EPA, in the rule, made clear that they anticipate circumstances where the states will need to use their authority to grant that fourth year.

Do you see companies taking advantage of the extra year?

Some companies have already begun talking to the state regulators about getting that fourth year of compliance and some of those companies have already developed very detailed compliance plans. When you're making these types of changes and you have a really complicated situation, what we would say to the pulp and paper industry is, 'this process can't begin too soon.'

You said in a press statement that "we will be looking for improvements from the December 2011 re-proposed rules on the use of biomass residuals as fuels, compliance time, and overall achievability." What "improvements" would you like to see EPA make?

One of the main things left undone by EPA is the listing of additional biomass residuals as non-waste fuels under the Non-Hazardous Secondary Materials rule. EPA concluded it already had most of what it needed to proceed with this supplemental proposed rule and is inclined to list. In the case of creosote treated wood like railroad ties, we are working with other interested stakeholders to provide EPA additional information. We hope EPA can issue the proposal within the next month or so, and we will meet with them to make sure they understand the importance of timely action to reduce business uncertainty.

At this early stage of the process, what would you tell manufacturers?

Companies should begin talking to their state regulators now, and AF&PA will help with the coordination, certainly with our member companies in a given state. This may even be an area where we can help coordinate the broader manufacturing community in a given state so that collectively and together industries can go to the state regulators to encourage them to grant that additional fourth year of time. Having that certainty upfront, knowing what needs to be done now, could make your project less expensive and could allow you to work these changes in with other changes you might want to make at your mill. ■

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Got Paper?

Paper Check-off program would serve to highlight the benefits of paper and paper-based packaging.

The U.S. Department of Agriculture (USDA) on Dec. 28, 2012 announced it is seeking public comment on the proposed national Paper and Paper-Based Packaging Promotion, Research and Information Order. The proposed program would cover four segments of the paper industry: printing and writing; kraft packaging paper (used for products such as grocery bags); containerboard (used to make shipping containers); and paperboard (used for food and beverage packaging, tubes, etc). Newsprint and carbonless papers would not be included in the program.

"[This] announcement is great news for those of us on the Paper Check-off panel and for the health of our industry," said Jim Rubright, chairman and CEO of RockTenn and chairman of the Paper Check-off Panel.

"Paper and paper-based packaging offers a renewable, recyclable products choice for our customers and consumers, and the Paper Check-off program would offer us a unique opportunity to make a sustained investment in telling our story in a targeted and positive way. We appreciate USDA's efforts in moving this process forward and allowing our industry the opportunity we requested."

"We have an excellent track record on sustainability as an industry, and we need to collectively educate consumers to correct any misperceptions that may be contradictory."

— Mark Gardner, President and CEO of Sappi Fine Paper North America

What is a check-off?

Authorized by federal legislation, a Check-off is designed to maintain and expand markets for an industry's products. Check-offs are governed by an Order that sets the parameters of the program and are run by an industry nominated board of directors appointed by the Secretary of Agriculture. While program funds may not be used for lobbying or advocacy, they are available for informational, educational, and promotional activities in support of an industry's products.

Why a check-off?

Check-offs have successfully turned the tables for a wide array of industries providing returns on investment.

"In the case of the paper industry, current research indicates that messages about our sustainability practices provide significant opportunities to change consumer behavior and educate purchasing decision makers," says the American Forest and Paper Association. "Messages highlighting that our products are reusable, recyclable, and come from trees that are replanted, for example, resulted in meaningful improvements in overall industry perceptions. These perceptions will contribute to an increase in the sale of paper-based packaging and slow the decline for printing and writing grades."

The forest products industry employs nearly 900,000 people, including 329,000 jobs directly affected by the paper grades to be covered in the Paper and Paper-Based Packaging Promotion, Research and Information Order. The total number of jobs affected by covered grades through the supply chain reaches 1.4 million jobs.

"We have an excellent track record on sustainability as an industry, and we need to collectively educate consumers to correct any misperceptions that may be contradictory," said Mark Gardner, president and CEO of Sappi Fine Paper North America. "The Paper Check-off would allow us to showcase paper and paper-based products with a singular voice to benefit the industry as a whole."

The USDA oversees such promotional, research and information programs for numerous industries. These programs are initiated and funded by the industry. The Paper Check-off would be funded by an assessment of 35 cents per short ton only on companies producing or importing 100,000 short tons or more annually of the covered grades. The program would be administered by a 12-member board of directors, which would carry out activities to showcase the renewable, reusable and recyclable attributes of paper and paper-based packaging. A referendum would be held among eligible domestic producers and importers prior to a program going into effect.

For further information about Paper Check-off, visit: www.papercheckoff.com. ■

PAPER2013

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Scheduled Paper2013 speakers (top row) Martin, Pesonen, Rosensweig (bottom row) Scheible, Wallach, Williams

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- Paper2013 Reception **5:30–6:30pm**

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- Suites open **8am–12pm** and **2:30–6pm**
- RISI Global Paper Market Trends and Forecast **10 – 11:30am**
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