Director’s Message

By Brad S. Carlberg, P.E.
Hyundai Engineering & Construction – Seoul, South Korea

Honorable Members of PUPID,

Well, it is already the third week of February and as I write this I am in Seoul, South Korea where I will be for the rest of the year.

Just like always, we still need a Director-Elect, and a symposia coordinator. The Director-Elect will train with me in 2013 and take over as Director for the 2014/2015 biennium. If you can only do it for a single year, then we can look at single terms. In return for the work, you’ll get your ISA Spring and Fall Conference expenses paid by the division.

This last September, the ISA Automation Week 2012 was at the Orange County Convention Center in Orlando, Florida. If you couldn’t be there, you can listen to the audio and read the Powerpoint presentations and papers by going to the links on the PUPID website. As they say, it’s the next best thing to being there.

Our division net membership has increased slightly from 450 to 457 members with 25 new division members since November. The membership has stayed nearly constant since last January. Welcome to all of you new members!

I am also pleased to be able to include Alison Rowat’s paper and see her presentation “Recausticizing Benchmarking Study” from the PaperWeek 2013 Conference earlier this month in Montreal, Quebec.

I hope it is an encouragement to you to become more involved with the Division and to enroll more members from the great international pulp & paper community.

Please do not hesitate to contact me at my email brad.carlberg@bsc-engineering.com to discuss how you can help PUPID.

Do feel free to forward the Newsletter to your friends and colleagues who may have an interest in it.

On Pages 2 & 3,
Read the “Tuning Tip” and learn how to tune your loops using Ziegler-Nichols Wave damping open and closed loop bump test techniques.

On Pages 5 - 7,
Find out what’s happening around the world of pulp & paper in the “Who’s Doin’ Anything” section.

On Pages 8 – 17,
Read Alison Rowat’s paper and see her presentation “Recausticizing Benchmarking Study” from the PaperWeek 2013 Conference in Montreal, Quebec.
ABSTRACT

Open Loop Method (Ziegler-Nichols)

The control system is allowed to come to a steady-state condition after the controller is placed on manual. A unit step change next taken on the controller output. The apparent delay time (Td) and the maximum reaction slope (Sm) are measured.

Based upon the following Ziegler and Nichols open loop method equations, the control mode settings are calculated by inserting the proper apparent delay time (Td) and the maximum slope of reaction curve (Sm):

Proportional Controllers

\[ K = \frac{1}{S_m T_d} \]

Proportional Plus Integral Controllers

\[ K = \frac{0.9}{S_m T_d} \quad T_i = 3.33 T_d \]

Proportional Plus Integral Controllers

\[ K = \frac{1.2}{S_m T_d} \quad T_i = 2 T_d \quad T_D = 0.5 T_d \]

where:

K = Proportional Gain
T_i = Reset Time
T_D = Derivative Time
S_m = maximum slope of reaction curve
T_d = apparent delay time

Calendar of Events

Get a quick overview of the ISA PUPID events for 2013 by going to the Calendar at: http://www.isa.org/~pupid/2013_PUPID_Calendar.htm

**2013 APPITA Conference & Exhibition**
May 8 – 10, 2013
Melbourne Park Function Centre, Melbourne Australia
http://www.appita.com/

**2013 Pan Pacific Conference**
11/20/2013 to 11/22/2013
Hotel Horison
Bandjung, West Java Indonesia
http://www.reptech2013.org/

**2013 TAPPI PEERS Conference**
09/15/2013 to 09/18/2013
Green Bay, WI USA
http://www.tappipeers.org/

**2013 BLRBAC Fall Meeting**
10/7/2012 to 10/9/2012
www.blrbac.org

**2013 China Paper Technical Conference**
9/2/2013 to 9/4/2013
China International Exhibition Center
Beijing
http://www.chinapaperexpo.cn/

**2013 ISA FALL LEADERS MEETING**
SATURDAY, NOVEMBER 2, 2013 AND SUNDAY, NOVEMBER 3, 2013

**ISA AUTOMATION WEEK 2013**
MONDAY, NOVEMBER 4, 2013 THROUGH THURSDAY, NOVEMBER 7, 2013
NASHVILLE CONVENTION CENTER
NASHVILLE, TN
Come meet your leaders & get involved!

**ABTCP 2013-46th Pulp & Paper International Congress & Exhibition**
10/8/2013 to 10/10/2013
Transamerica Expo Center
Sao Paulo, Brasil
http://www.abtcp2013.org.br/ingles/
Closed Loop Method
(Ziegler-Nichols)

The Ziegler and Nichols closed loop method in this discussion is referred to as the ultimate method. In this procedure, tune all reset and derivative action out of the controller (TI = TD = 0) leaving only the proportional mode. With the controller on automatic, tune the controller gain for continuous oscillatory cycle following an upset. If the gain is too high, the system will be unstable. If the gain is too low, the system will dampen out. When the system continues to oscillate on an upset, the gain is noted and referred to as the ultimate gain (Su). Also, the period of time between cycles is noted and referred to as the ultimate period (Pu). These values are used in the following Ziegler and Nichols closed loop ultimate method equation for controller tuning:

Proportional Controllers

\[ K = 0.5S_u \]

Proportional Plus Integral Controllers

\[ K = 0.45S_u \quad T_i = \frac{Pu}{1.2} \]

Proportional Plus Integral Controllers

\[ K = 0.6S_u \quad T_i = \frac{Pu}{2} \quad T_d = \frac{Pu}{8} \]

where:

- \( K \) = Proportional Gain
- \( T_i \) = Reset Time
- \( T_d \) = Derivative Time
- \( S_u \) = ultimate gain
- \( P_u \) = ultimate period

*This Tuning Tip was excerpted from “Analog Control Techniques & Tuning (with Ziegler-Nichols)” by Ralph K. Johnson of Bailey*. ISA Members can download this paper FOR FREE from the ISA Pulp & Paper Industry Division website at [http://www.isa.org/~pupid/RKJohnson_Tuning_1990.pdf](http://www.isa.org/~pupid/RKJohnson_Tuning_1990.pdf).
WELCOME TO THE 25 NEW ISA PULP & PAPER INDUSTRY DIVISION MEMBERS SINCE NOVEMBER 2012

Vivek Vijayan Elimban
Alejandro Torres Escobar
Dr. Theodore Meyer Garver, Jr.
Eric C. Hollis
Marko Kundacina
F G. Long
John Miller
Walter K. Ophelm
Paulo Correia Dos Santos

Shane Siegelin
Brian Smith
Stewart A. Whitlow
Thomas Ranch Dean
Tiago Donizete De Moraes
Trevor Nawalkowski
Kenneth Schunk
Joaquin Bolado Rodriguez

Kartikeyan Chellappan
Paul Dunn
Carl Allyn Ekblad
Mike Frias
Manuel Hernandez Fernandez
Tuan Nguyen
Arnold Proellochs
Kevin Anton DeWitt

HERE’S A REMINDER TO THE 58 ISA PULP & PAPER INDUSTRY DIVISION MEMBERS WHO NEED TO RENEW THEIR MEMBERSHIP

Santiago Aquino Amaya
Jesus Balarezo
Larry Bee, Jr.
Ketan Sharad Bhoite
John B. Birks
Joseph Bodnar
George C. Buckbee
Mitch Cannington
Devendra Kashinath Choudhari
Gordon D. Congdon
Brian Cruickshank
Diego Giovanni Cruz Cañenguez
Jason Dickey
Rajesh Bhoomalingam Donthula
Mauricio Estrada
Gregg Gagnon
Sajith Gandhi
Ms. Nutan Ashok Gole
Rushikesh Vijay Goregaonkar
Jack M. Griffin, Jr.

Carlos Alberto Grosman
John Hands
Anu Hari
Ahmik Bre Hindman
Ronald S. Houghtelling, CCST
Ms. Sangeetha Jagannathan
Philip J. Jerman, Jr.
David W. Johnson
Matthew Johnson
Sanket Ramesh Kolambkar
Daniel Kolligian
Maximillian George Kon
Kae Lee
Peter J. Luciano
Carlos Stanley Luna Rodriguez
Herbert Maldonado
Thomas J. Marszalek
Francisco Miguel Martinez Albeanez
Apurva Vinayak Meher

Rudra Vijay Mhatre
Gerald Murenbeeld
Ronaldo Goncalves Paes
Benjamin N. Page
Prashant Anant Patil
Mike Pemberton
Chris S. Perry
Preema Balabhadran Pillai
Marcilio Antonio V Pongitori, Sr., Mestre
Dan Poole
Tommy Quick, Jr.
James B. Russell
Ramgowri Shanmugavel
Nolan Southard
Samuel G. Sudler, III
Michael A. Trombley
Pankaj M. Vaid
Ms. Danielle Valdivia
Rikard Vedin

DON’T FORGET TO RENEW!
### WHO’S DOIN’ ANYTHING?:

**International Paper Finalizes Transaction with Grupo Orsa in Brazil**

MEMPHIS, Tenn., Jan. 14, 2013 /PRNewswire/ -- International Paper (NYSE: IP) and Brazilian corrugated packaging producer Jari Celulose, Embalagens e Papel S.A., a Grupo Orsa company, have 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. Today’s closing completes the transaction 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, Chairman and Chief Executive Officer. "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.

**International Paper Completes Acquisition of Sabanci Shares in Olmuksa Corrugated Packaging Joint Venture in Turkey, Becomes Majority Shareholder**

MEMPHIS, Tenn., Jan. 3, 2013 /PRNewswire/ -- International Paper today announced it has completed the acquisition of the shares of its joint venture partner Sabanci Holding in the Turkish corrugated packaging company Olmuksa, for a purchase price of $56 million. International Paper had obtained regulatory approval for the deal in the fourth quarter of 2012. The deal sees International Paper become the majority shareholder, owning approximately 87.5 percent of Olmuksa’s outstanding shares. The change of control triggers a mandatory call for tender of the remaining public shares (approximately 12.5 percent float) of Olmuksa, which will be conducted in line with the regulations of the Turkish Capital Markets Board.

"Packaging is a core business for International Paper and this deal follows our commitment to expand profitably our strong global platform and regional presence," said Maximo Pacheco, President of International Paper Europe, Middle East & Africa. He added "It is an exciting opportunity to grow and serve our customers in a strategically important geography."

The Turkish corrugated market is currently the 7th largest in Europe with expected continued average growth rates of greater than 5% annually. The country is also strategically positioned to serve as potential growth platform to the Middle-East.

**Mondi SCP Invests €128 Million In Green Energy Projects At Its Mill In Ružomberok, Slovakia**

December 21, 2012

Mondi SCP announced plans to invest €128 million in green energy projects at its Ružomberok mill in Slovakia. This 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.

“Our objective is to increase pulp production, produce more green energy and further improve our CO2 footprint. We are pleased that the Slovakian government is supportive of our long term presence in the country, which played an important role in our decision making” said Peter J. Oswald, CEO of Mondi’s Europe & International division.

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

Peter Orisich, CEO of Mondi’s Uncoated Fine Paper business said “Mondi has invested over € 350 million in the mill over the last ten years to drive innovative production and operational improvements. This investment continues the development of Mondi SCP into a state-of-the-art facility in Slovakia,” he added.

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 535,000 tonnes.

SOURCE: Mondi SCP
Up And Running: Clearwater Paper Adds New TAD Paper-Making Capabilities In Shelby, N.C., Upgrades In Las Vegas
December 18, 2012
SPOKANE, WASH.--(BUSINESS WIRE)--

Clearwater Paper Corporation (NYSE:CLW) today announced the completion of the next phase of the company’s newest facility at Shelby, N.C., culminating in the start-up of the company’s new through-air-dried (TAD) paper machine. 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.

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.

“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,” said Linda Massman, president and COO. “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.”

The Shelby project, announced in June 2010, involved significant coordination with local and state agencies.

“The ongoing support from the people of Cleveland County and our new, exceptionally talented employee team has made this world-class facility possible,” said Vince Reese, Shelby plant manager.

“We clearly owe a big thanks to the hundreds of contractors who have worked methodically night and day for two years to build one of the finest tissue manufacturing complexes in the world,” said Brian Hoaglund, expansion project leader. “We worked seamlessly with government agencies from Shelby, Cleveland County and the state of North Carolina throughout the process.”

Clearwater Paper’s Las Vegas TAD machine was completed in 2004 to fill an important void in the private label tissue marketplace, which lacked a leading national brand equivalent (NBE) ultra-premium quality paper towel product. Since the machine became operational, Clearwater Paper has been a leading supplier of TAD paper towels to regional and national private label retailers throughout the United States.

“The Las Vegas upgrade was a success for many reasons including excellent project management,” said Bill Copenspire, vice president consumer products manufacturing. “We completed significant pre-installation work before the scheduled outage and had very good communication between Clearwater Paper and an army of vendors.”

“Clearwater Paper can add NBE TAD bath tissue to our product lineup at a time when the ultra-quality tier is the highest growth segment in bath tissue,” said Bruce Woodlief, director of marketing. “The addition of TAD bath provides retail customers with a significant quality improvement over their existing conventional ultra-bath product.”
WHO’S DOIN’ ANYTHING?: (CONTINUED)

Metso To Supply Grade Conversion Rebuild From Newsprint To Lightweight Coated Grades For Norske Skog In Australia
December 17, 2012
Helsinki, Finland—(Marketwire) - Metso Corporation's press release on December 17, 2012 at 1:00 p.m. local time
Metso will supply Norske Skog with a grade conversion rebuild from newsprint to lightweight coated (LWC) grades of their PM 2 machine at their Boyer mill in Tasmania, Australia. The rebuilt production line will be fully operational after several phases of rebuild during the first quarter of 2014. The value of the order will not be disclosed. The main target of the rebuild is to convert the newsprint machine into a competitive lightweight coated paper (LWC) production line. The delivery also includes a cooperation agreement aimed at achieving key objectives of the conversion.

Technical information
The future capacity of the PM 2 machine after the rebuild will be 140,000 tonnes per year of lightweight coated grades. Metso’s delivery will include a rebuild of the existing machine calender and a new ValSizer sizing section, a coating preparation and supply system, a TurnDry Compact air dryer, an OptiLoad calender, a ValReel reeler, a WinBelt C winder and parent roll handling equipment.
The order is included in Metso's Pulp, Paper and Power fourth quarter 2012 orders received.
Norske Skog has 11 wholly and partly-owned mills in 9 countries and is one of the world's largest producers of publication papers like newspapers, magazines and periodicals as well as grades for advertising purposes. Norske Skog is listed on the Oslo Stock Exchange and had 5,100 employees at year-end 2011.
Metso's pulp, paper and power professionals specialize in processes, machinery, equipment, services, paper machine clothing and filter fabrics. Our offering and experience cover the entire process life cycle including new production lines, rebuilds and services.
Metso is a global supplier of technology and services to customers in the process industries, including mining, construction, pulp and paper, power, and oil and gas. Our 30,000 professionals based in over 50 countries deliver sustainability and profitability to customers worldwide. Expect results.

Boise Inc. Promotes Judy Lassa to COO and Bob Warren transitions to a new role
Today Boise Inc. announced that Judy Lassa will become executive vice president and chief operating officer of the company on January 1, 2013. In her new role, Lassa will provide leadership for all of the company's business units.
“Judy has an exceptional track record of leading her teams to deliver excellent safety, operational and financial performance,” says CEO Alexander Toeldte. “She is also deeply committed to developing people. I know Judy will make strong contributions as she takes on this well-deserved expanded role.”
Judy began her 30-year career with Boise at the St. Helens, Oregon, mill as a process engineer after graduating from the University of Wisconsin-Stevens Point with a bachelor's degree in paper science and engineering. She moved to the Vancouver, Washington, mill in 1986 and then to the Portland, Oregon, office as marketing services manager. In 1991, Judy became pulp mill/wood yard superintendent at DeRidder, Louisiana, and in 1994 returned to the Vancouver mill as paper operations manager. After working in a variety of operational and marketing roles, she moved to Boise as general manager of the packaging business in 1997. Judy became an officer in 2000 and senior vice president of the paper business in 2010. Also effective January 1, 2013, Bob Warren, executive vice president and chief operating officer, will transition at his request to a non-officer role within the company. Warren will continue to work as an advisor to the senior management team and as a coach to leaders throughout the company.
“Bob has made pivotal contributions to our company and its predecessors over many years,” says Toeldte. “He successfully led the paper business through the startup of Boise Inc. and transformed our supply chain organization to best-in-class status. Bob leads by focusing on possibilities and getting people to make them happen. We regret and respect Bob's desire to step back but are delighted that he will continue to contribute to the company.”
REAUSTICIZING BENCHMARKING
BY
ALISON ROWAT
AND
PAPTAC BLEACHING COMMITTEE PARTICIPANTS

PRESENTED AT PAPERWEEK CANADA 2013
FEBRUARY 4 - 7, 2013
FAIRMONT QUEEN ELIZABETH HOTEL
MONTREAL, PQ CANADA
Recaucisticizing Benchmarking

Alison Rowat and Paptac
Bleaching Committee Participants

Visit / visitez www.paperweekcanada.ca

Hosted by / organisé par: PAPTAC
Mills Identified With Letters Use An Online Analyzer To Report Liquor Properties

Mills Identified With Numbers Use The Shift Lab To Report Liquor Properties
Green Liquor TTA: Generally higher TTA is better to reduce hydraulic load on system. Too high can result in scale so mill must make best balance.
White Liquor TTA: Usually very close to Green Liquor TTA, but good control of slaker can reduce TTA variability between Green Liquor and White Liquor.
Green Liquor to White Liquor: Variability Improvement (GL COV – WL COV)/GL COV x 100
Causality: NaOH/(NaOH + Na2CO3) A function of the Green Liquor TTA (higher TTA, ability to achieve higher CE). High CE with low variability means less hydraulic load (lower energy use), and more stable operation (less likelihood of overliming, underliming, cleaner liquors).
Generally want high Lime Mud Solids to produce a lime with high availability and low carbonate
Poor Reduction Efficiency (Na2S/(Na2S+Na2SO4)) means higher Sulfate deadload in green liquor and a ripple effect in the recovery cycle.
Energy Use ranges from about 4.8 to 8.6 MMBTU/short Ton
LETTERS TO THE EDITOR

Send your comments on this newsletter to me at brad.carlberg@bsc-engineering.com or post a message to the ISA PUPID Technical Discussion Forum List Serve & “get something started”!

You can reach the site at http://www.isa-online.org/cgi-bin/wa.exe?A0=PUPID or by going to the PUPID or the main ISA websites and looking for the “ISA Technical Divisions”
LINKS TO RELATED WEBSITES

ISA PULP & PAPER WEBSITE
http://www.isa.org/~pupid/

ISA PULP & PAPER TECHNICAL DISCUSSION FORUM
http://www.isa.org/scripts/lyris.pl?enter=pupid&text_mode=&lang=english

ISA TECHNICAL CONFERENCE SESSION SCHEDULE
http://www.isa.org/Template.cfm?Section=Conferences_and_Exhibitions&template=taggedpage/conferencesbydate.cfm&icid=61

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http://www.paprican.ca/

TAPPI
http://www.tappi.org/

PIMA
http://www.pimaweb.com/

AMERICAN FOREST AND PAPER ASSOCIATION
http://www.afandpa.org/

NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS
http://www.nspe.org/

SWEDISH ROYAL INSTITUTE OF TECHNOLOGY
http://www.pmt.kth.se
http://www.hut.fi/English/

HEL��IN UNIVERSITY OF TECHNOLOGY
http://www.hut.fi/English/

TECHNICAL ASSOCIATION OF THE AUSTRALIAN AND NEW ZEALAND PULP &AMP PAPER INDUSTRY (APPITA)

AUSTRALIAN PULP & PAPER INSTITUTE

ISO STANDARDS TECHNICAL COMMITTEE LIST

ISA STANDARDS COMMITTEES LISTSERVER
http://www.isa.org/shellcgi/lyris.pl?site=isa&page=topic&topic=standards+committees&text_mode=0&lang=english

QUICKIES

ISA PULP & PAPER TECHNICAL DISCUSSION FORUM

Anybody (not necessarily an ISA or PUPID member) can subscribe to the PUPID Pulp & Paper Technical Discussion Forum. To subscribe, go to the PUPID homepage at http://www.isa.org/~pupid/, select "Pulp & Paper Technical Discussion Forum" in the pick box, click "Go", and enter you email address and a password.

ISA EMAIL ADDRESS FOR ALL MEMBERS

Any ISA member can register for a free email address and online mailbox. If you set it up, your ISA email address will be yourname@member.ISA.org. To register, go to http://www.isa.org/membership/benies/ , and follow the registration instructions.

ISA PUPID CALENDAR

Get a quick overview of ISA PUPID events for 2002 by going to the Calendar at: http://www.isa.org/~pupid/2002_PUPID_Calendar.htm
# World Corners

**Canada Corner**

Nothing from anyone there this time!

**Central & South American Corner**

Nothing from anyone there this time!

**Far East Corner**

Nothing from anyone there this time!

**From The Land Of The Midnight Sun**

Nothing from anyone there this time!

**European Corner**

Nothing from anyone there this time!
2012 Pulp & Paper Industry Division Officers

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Paper Review Coordinator  
vacant

Environmental Chairman  
vacant

Secretary / Treasurer:  
vacant

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