

Papermakers Conference stresses personal interaction

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Over 800 registrants traveled to San Francisco, CA, for the annual Papermakers Conference, April 24-27, 1994, which was sponsored by the Paper and Board Manufacture Division. Responding to ongoing member and conference attendee requests for more networking and personal interaction opportunities, the organizers once again offered a combined poster session and Papermaker's Pub, a Meet the Experts Roundtable and Breakfast, a 5K run, and a large number of roundtable sessions with a heavy emphasis on attendee interaction. The newcomer's reception offered a special welcome, and a chance to obtain information, for first-time Papermakers Conference attendees.

The complementary four-hour Papermaker's Pub and poster session, chaired by Lynn Marlow of Weyerhaeuser Paper, ran during the Sunday afternoon registration hours, affording registrants the opportunity to interact with each other and with the 13 poster session authors. Crowds often topped several hundred during this event. The posters described work in progress or overflow papers that could not be accommodated in the other sessions.

More than 50 attended the newcomer's reception, which was hosted by the Paper and Board Manufacture Division officers, to offer a special welcome to first-time Papermakers Conference attendees (and new TAPPI members), to assist them with scheduling or other questions, and to encourage participation in events of interest. This event has been hailed as a friendly way to break down the initial hesitation to participate fully that some first-time attendees experience when it seems as if everyone else is an old hand.

The Meet The Experts Roundtable, a casual, problem-solving forum held over breakfast, attracted a record 98 attendees. This event, chaired by Jim Clay of Cellico Hedemora, provided an informal format for discussion of particular topics of interest by allowing attendees to select a table staffed with an expert in their area of interest and to ask general questions or present specific problems for discussion.

An astonishing 77 runners registered for the annual Papermaker's Runnability 5K Run, which was organized for the second year by Rex Robertson of James River and Ken Smith of Brown and Root. Participants ran or walked in a local park. The participants' registration fees, and corporate

1. Ben Thorp (Division Leadership Award recipient), Mal Condon (Division Technical Award and Harris O. Ware Prize recipient), and Joe Wilson (departing Division chairman)



sponsorships from companies, are used to fund Division scholarships for students training for a career in the paper industry. The Papermaker's Runnability 5K Run has raised more than US\$ 7000 since its inception in 1993.

Opening session

At the opening session, Division Chairman Joe Wilson of Lion Industries welcomed all attendees and introduced TAPPI Vice President Jack Chinn, of Madison Paper Industries, representing TAPPI President Ron Estridge. Chinn emphasized the need for feedback and the advantages of networking in his brief address.

Paper and Board Manufacture Division awards were announced by Joe Wilson and presented by Jack Chinn. The Division Leadership and Service Award was presented to Ben Thorp of James River; the Division Technical Award and Harris O. Ware Prize went to Mal Condon of JWI Group; and the Division Professional Development Award was received by Michael Withiam of J. M. Huber. In addition, retiring Division Committee Chairmen Roger Kanitz of Beloit, Lynn Stryker of Specialty Minerals, and Terry Bliss of Black Clawson were recognized. Chinn also recognized retiring

2. Ellen Warner (incoming Division chairman) and Elmer Martínez (technical program chairman)



3. Michael Withiam receives his certificate for professional development from TAPPI Vice President Jack Chinn



Division Chairman Joe Wilson. Ellen Warner of Eastman Kodak succeeds Joe Wilson as division chairman.

Irene Meister of Irene Meister & Associates delivered the keynote address, titled "The global nature of the paper industry." She discussed the ramifications of the Uruguay round of GATT (General Agreement on Tariffs and Trade), in which 109 nations agreed to move closer to a 10 year stage-in of 0/0 tariffs. This agreement has been seven years in the making and still must be approved by the U.S. Congress. Other recent international agreements, including NAFTA (North American Free Trade Agreement) and the U.S./Japan agreement, also are moving to lower or no tariffs, although even now some countries' business practices are more of a barrier to U.S. exports than tariffs. Meister stated that global environmental issues also will have a huge impact on the paper industry.

The opening session was concluded with a presentation by Pamela Sweat of TAPPI describing the award-winning Paper Express Kit. This educational package, developed by TAPPI, is targeted at grade school children and their teachers and is intended to stress the importance of paper products and the paper industry. It also contains a helpful videotape and manual of science demonstrations that can be conducted before groups of students to illustrate scientific concepts important in the paper industry.

Technical program

Technical Program Chairman Elmer Martínez of Borden assembled a full slate of high-quality sessions, with as many as four running concurrently. All were well attended.

An overflow crowd responded to the grade-specific International Superintendents Panel Discussion and Roundtable, reflecting a strong interest in both the subject areas and the interactive format. Five key grades of paper products were identified and separately seated at conference tables, while overview remarks were made by Irene Meister. In addition, each grade-specific table had one or more paper mill hosts and supplier hosts to kick off the discussions on the particulars of

their grades. The discussions were lively and wide ranging, specifically encompassing problem solving, U.S. vs. overseas practices, and ISO 9000. The session easily could have continued past the designated ending time.

Chi Yu of Beloit chaired a session with a mix of theoretical and mill practice refining papers. This session started with a presentation concerning studies of stock wad interactions with a single pair of refiner bars in a test stand, by Mark Martinez and Richard Kerekes of Paprican. Martinez pointed out that the great majority of the extensive published literature regarding refining concerns either the effect of refining on fibers or energy consumption during refining, while relatively little has been written about the mechanisms of refining. Their study indicated that a substantial refining force could be applied only over a relatively narrow range of tackle clearances. Excessive gaps resulted in little energy transfer, and gaps below the minimum resulted in floc rupture rather than compression and shear.

Refiner mechanisms were further explored in a paper by Christopher Demier of Beloit, who reported results of a high-speed photographic study of an operating, commercial-size refiner with a transparent window and transparent stator systems. This technique allowed determination of fiber coverage ratios over the stator bars, which may lead to methods of increasing coverage ratios and increasing the homogeneity of the treatment.

Jorma Lumiainen of Sunds Defibrator Jhylla reported the results of a series of trials on pilot disc and conical refiners, which showed that while hardwood pulps generally respond better to lower refining intensities, strength properties can be optimized and total refining energy consumption can be reduced by choosing an appropriate refining intensity. He indicated that the optimum intensity value, expressed as specific edge load, also is dependent on the plate pattern and the strength development targets. He concluded that the refining intensity should be increased to the maximum the fibers will absorb and still achieve the desired development results because the refiner capacity and the motor load capacity are better utilized under these conditions.

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The refining session was completed by Colin Baker of PIRA International, who stated that the optimum treatment of softwoods will occur at a specific edge load of about 2 Ws/m, while hardwood strength will be optimized at a specific edge load of 0.2 Ws/m. He emphasized the importance of separate refining of various fiber types, especially for special purpose and high-performance papers, such as security papers, coating papers, glassines, and tracing paper. He also discussed the various theories for quantification of refining, including specific edge load, specific surface load, and "C" factor. Finally, he stated that the same results can be obtained from almost any type of hardware, given equal intensity treatment, although the gross energy consumed may vary widely with refiner design, due to intrinsic differences in the no-load characteristics, based on tackle geometry.

Advances in wet-end operation were presented in a session chaired by William Kochanik of Betz PaperChem and Jack Lukins of Rust Engineering. The session started off with a report on a vacuum box dewatering study by John Neun and Steve Fielding of AES Engineered Systems. The initial study on a pilot paper machine, previously reported, resulted in curves which can be used to predict trends in flat box dewatering for a range of linerboard weights, machine speeds, and incoming dryness. They concluded that after an initial fast dewatering rate, the final dryness of the sheet does not improve much with more dwell time at a given vacuum level. However, since fabric wear and energy required to drive the wet end and operate the vacuum pumps are strongly influenced by exposure time at a given vacuum, there is a cost incentive to optimize the vacuum levels at the wet end. The most recently reported work correlated the pilot study results to field results.

Operating experience with a top wire former on linerboard was reported by Joe Parisian of Black Clawson and Ashim Banerjee of Boise Cascade. This upgrade was unusual in the sense that, while capacity was increased, the primary motivation for the upgrade was base sheet quality. The standard deviation of sheet moisture, basis weight, and caliper were dramatically reduced, and the formation and smoothness also improved. Breaks at the mill and during converting were reduced, and converting efficiency has improved.

A paper by Otto Kallmes of MK Systems and Bradley Bishop of Simpson Paper described a method of determining whether changes in formation are due to changes in the tendency of the stock to form flocks or due to changes in the papermaking conditions. This method uses a side-stream instrument to compare the floc index in a quiescent area of a flow cell to the floc index immediately after redispersion. A change in the ratio of these indices correlates to changes in sheet formation.

Jeffrey Pappalardo of Vooner Vacuum Pumps made a presentation detailing where vacuum pumps normally wear due to corrosion and erosion and how this wear reduces vacuum pump capacity. Rotor to cone clearance increases as the pump wears, but the power consumption remains the same. A one percent decrease in removal of water at the wet

end due to inadequate vacuum capacity can result in a four percent increase in drying requirements, which may require that the paper machine be slowed down, he said. Normally, mills that must use recirculated water for vacuum pump seal water find that stainless steel rotors and cones are required.

A strong correlation between consistency going into a dandy roll or a top-wire former and formation has been pointed out by E. Richard Woodward of NDC Systems. The consistency at this point can be measured with a "single sided" nucleonic backscatter gauge, and a relative indication of the sheet formation can be measured at the wet end with a device that measures transmitted light variations. Results of case studies suggest that controlling to constant vacuum at the vacuum boxes, or at the couch roll, should be changed to controlling vacuum to maintain consistency, reducing variations in formation. He noted that most operators will routinely control to a slightly higher consistency than would be optimum for formation to reduce wet-end breaks.

Monofilament yarn deposition resistance has been improved via the addition of fluorinated copolymers, according to a paper presented by Michelle Diaze-Korti of Shakespeare Monofilaments. However, historically, little correlation between monofilament properties and the stain resistance of the finished cloth has been observed. The author suggests that test methods based on the Wilhelmy Principle may be useful for this purpose.

Roundtables

A large crowd attended the Papermakers Problem Solving Roundtable sponsored by the Papermakers Committee and moderated by committee officers Roger Kanitz of Beloit and Tom Rodencal of International Paper. This roundtable has no previously announced topic and no panelists or initial presentations. Instead, the roundtable is driven only by questions from the participants, which are also answered by participants. The session attracted a wide range of questions, and almost every question seemed to draw a response well grounded in experience. Many attendees consider this session one of the most helpful of any at the conference.

A roundtable specifically targeted to the special needs, stock preparation system modifications, and operating practices of small mills was organized and moderated by Gary Henrikson of Harris Group and sponsored by the Stock Preparation Committee. The panelists, all with substantial day-to-day operating experience in mills that frequently change grades, were questioned extensively for several hours by a small but lively audience. Colored broke management and reducing time-to-grade during frequent grade shifts was extensively discussed.

Short courses

Two short courses followed the Papermakers Conference. The Stock Preparation Short Course, held every two years and organized by the Stock Preparation Committee, was

chaired by Anil Dewan of Champion International and attracted 40 attendees. The Optimizing and Troubleshooting Retention and Drainage Short Course was sponsored by the Papermaking Additives Committee and chaired by Mike Shuster of Betz PaperChem and Jerry Gess of Weyerhaeuser. It attracted 79 registrations.

Future conferences

The 1995 Papermakers Conference will be held April 23–26, 1995, at the Chicago Marriott Hotel, Chicago, IL. Abstracts for papers for the 1995 conference should be addressed to 1995 Technical Program Chairman Jonathan C. Kerr, Black

Clawson Co., 605 Clark St., Middletown, OH 45042, telephone: (513) 420–8315, fax: (513) 424–1168. Abstracts are due by Sept. 1, 1994.

The 1996 Papermakers Conference will be held in Philadelphia, PA, March 24–27, 1996. However, in response to many TAPPI member and conference attendee requests to combine conferences and run more concurrent sessions, the 1997 Papermakers Conference will be delayed until October 1997 and combined with the Engineering Conference at the Opryland Hotel in Nashville, TN. ■