

Multitrack program meets Division's needs at 1991 TAPPI Engineering Conference

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To describe a TAPPI Engineering Conference in detail would be similar, perhaps, to tackling the multivolume contents of the *Oxford English Dictionary*: a colossal undertaking. Held at the Opryland Hotel in Nashville, TN, from Sept. 30–Oct. 3, 1991, eight panel discussions and 84 papers provided a welcome opportunity for the 1200 registrants to share current information among veteran colleagues and newcomers. For the second year in a row the track program was used, and perhaps it's merely a coincidence, but for the second year in a row the conference was graced by Secret Service as President Bush stopped at the hotel on his way to the Grand Old Opry to watch the American Country Music Awards.

Individual perspectives

At the Newcomers Reception, which drew 49 first-time attendees from Canada, Colombia, Finland, Germany, Mexico, Sweden, and the United States, a consultant said that he paid for much of his conference expenses on his own. He came to the conference because of a project at work. When conducting research for this project, he found that many of the references relevant to the project were from TAPPI conferences.

Between sessions, a materials corrosion researcher from Canada commented that in his field, more is done in the United States than in Canada. The professional association there does not have a committee specifically committed to corrosion engineering. While it is common for U.S. paper companies to have corrosion engineers on staff, in Canada it's not as common. "So you go where the professionals are," he said. "You go to TAPPI."

Committee meetings "vital"

"Committees...that's where the action is," said one person when asked why he attended committee meetings. For him, the committee meetings provide opportunities to be in touch with technical information that is valuable to him. "In effect, I get it here [before it's presented anywhere else]."

The 12 Engineering Division committees held meetings on Monday, Sept. 24. Highlights from some of the meetings follow.

Process Control Committee

The Process Control Committee discussed the need for a liaison committee between TAPPI and other associations nationally and internationally.

Committee members are developing a textbook on process control for the industry.

Increasingly sophisticated computer systems not only help mills to optimize their products through process simulation and process control, but also introduce new challenges to manage the mass of information collected by computers. The Process Control Committee has formed a Long Range Planning Task Force to evaluate the emerging needs of TAPPI members in these fields and to recommend organizational structures within TAPPI to serve these needs. The Task Force is moving rapidly and hopes to bring a report to the Division in the spring of 1992.

The main topic covered at the meeting was an explanation of ISO, which will become an industry requirement in 1992. ISO certification can take up to 6–12 months, and it requires a total commitment from the company to implement the necessary procedures. However, besides giving a company preferred supplier status, ISO certification can have added benefit to an existing quality program. It allows employees to speak the same language, it creates and maintains a standard operating procedure, it enforces consistency, and it provides an avenue for new ideas.

ISO 9000 can serve as a strategic alignment tool for a total corporate quality management program, heightening customer service. However, ISO will not ensure quality. Primarily, it gives companies a method to get things done and to ensure consistency. It is a control of uniformity, not quality.

Process Simulation Committee

The Committee sponsored three sessions at this conference. They are revising the publication, *Introduction to Process Simulation*.

Water Removal Committee

The Committee also sponsored three sessions at this conference. At the meeting, they reviewed the very successful Pressing and Drying Seminar and the status of several technical information sheets. The *Wet Press Manual* is completed and available from TAPPI PRESS. Drying activity includes work on sheet handling and drying rates.

Plenary Session

Tuesday began with the conference award recognition and plenary lecture. The Best Paper Award, special Certificates of Appreciation, and the 1991 Division Leadership and Service Award and the 1991 Engineering Division Beloit Award were presented at the session.

The Division's Selection Committee gave two awards for Best Paper of the 1990 Engineering Conference. Algis P. Mockaitis of Stone Container Corp. won for his paper "Determination of tensile strength in old paper machine dryers," while a second award was given to Bradley A. James and Patrick W. Kane of Westvaco Corporation for their paper, "Sludge dewatering and incineration at Westvaco, North Charleston, SC."

Special Certificates of Appreciation went to William G. Corboy Jr., Donald J. Deiters, James O. Starkweather, and William Tomalonis.

After accepting the 1991 Division Leadership and Service Award and US\$ 1000 honorarium, Clarence H. Hornsby Jr. gave a plea for more "generalists" during his lecture, "Engineer as generalist and manager." He pointed out the need for leaders in the paper industry and suggested that colleges should provide a five-year engineering degree to prepare students to be the generalists they need to be in the field.

Thomas M. Grace, recipient of the 1991 Engineering Division Beloit Award, provided an interesting review of the history of recovery processes and some thoughts for future trends during his lecture, "Kraft recovery 1965-1990-2015."

Program responds to attendees' needs

The eight-track program differed slightly from the one offered in 1990. Some areas of expertise were regrouped and a new track was added for engineering managers. W.B.A. "Sandy" Sharp, Division Vice Chairman and Tech-

Clarence H. Hornsby Jr. was the recipient of the 1991 Engineering Division Leadership and Service Award and a US\$ 1000 honorarium presented by Kenneth E. Smith, vice president, communications and planning, Tappella Sandy Hill.



nical Program Chairman, said that the Technical Program Committee developed the tracks and their content to meet the needs Division members expressed when surveyed in 1990. The 1991 program tracks addressed engineering managers; maintenance managers; materials engineers; papermaking engineers; power and recovery engineers; pulping and bleaching engineers; recycling engineers; and simulation, control, and electrical engineers.

Attendees repeatedly expressed their pleasure with the track concept. Most agreed that it was an ideal way to ensure that each attendee chose the sessions most appropriate to his or her needs. "In a division as large and diverse as Engineering," commented one member, "the track idea is not only convenient but a necessity. But it can also be a model for other divisions that wish a truly functional conference."

"At a conference, time management is a must. There's too much information and too little time, so a person has to be selective and very attentive to the schedule. If not, there are possibilities of many missed opportunities. Tracks eliminate those and can ensure that you see and hear what you need."

The program also addressed industry trends, according to Sharp.

The recession, environment, recycled fiber usage, safety, globalization of industry, use of computers to develop more a realistic understanding of processes, and the need for more technical information are hot topics touched on in many of the sessions.

Managing during recession

For example, Session 1, "Effective management of small projects during a slowed down economy," assembled a panel of mill personnel and contractors to discuss how a

Thomas M. Grace won the 1991 Engineering Division Beloit Award and US\$ 5000 honorarium. The honorarium was presented by **Robert Page**, group vice president, Beloit Corp.



mill should approach small projects, the role of mill engineering personnel, the relationship between mill engineers and outside consultants, and weighing the options of having small projects handled by mill personnel or by bringing in outside consultants. The panel concurred that the number of small projects may far exceed larger ones at a mill; these projects can and should be managed with the same level of efficiency.

Globalization

What factors must be considered by an industry that is rapidly becoming globalized? What challenges will we face?

In Session 10, "Engineering management in a globalized pulp and paper industry," a contractor, an engineer, a vendor, and an owner described their experiences and advised attendees on project management overseas. While an international presence may present opportunity, a great deal of risk is also involved. For example, will the project be full foreign ownership or joint ownership with a local partner or will an existing operation be purchased?

Only by defining all of the variables and carefully weighing options can a company decide if it is wise to make an overseas investment. Familiarity with the country, its customs, its trade regulations, and its nuances is invaluable for establishing successful relationships. Gaining this familiarity really can only be done, according to one panelist, by getting a passport and wearing it out.

Paper machine design considerations for recycled fiber usage

The topic was clearly of great interest to the attendees who crowded in for standing room only. While some good information was presented, the session overall fell a little short. The authors tried to pack in too much information—in some cases, information not directly keyed to recycling—and this tended to defocus the session. The

theme was good and perhaps the Water Removal Committee will repeat it with a narrower or more specific focus.

General paper machine technology

A good review was presented of syphons for dryer sections. While this was not new material, it was a good review for newcomers to the industry and should be done for many parts of the paper machine. A paper about flow variation in showers had interesting data and proposed improvements to shower technique. A paper on composite covers for granite roll substitutes gave a detailed picture of new-generation press roll covers. While these covers have still to prove themselves on Eastern U.S. lightweight papers, they are serving many areas of the world with a safe and satisfactory granite roll substitute.

The effects of consolidation on sheet quality

A paper about the effect of a fourth press on print quality was well done, but comments after the session challenged the conclusions due to reliance on a somewhat unknown and narrowly focused print density test for printability.

A paper on displacement of water from paper using pressurized gas was of interest due to the potential for achieving water removal while retaining bulk in the sheet. The process appears difficult and the economic value compared to evaporative drying was missing. A very interesting paper on hot pressing was presented with excellent results for water removal. The only challenge heard after the session was whether or not this was a very capital-intensive way to achieve high sheet temperature (hot dryer with nips) when compared to other techniques such as steam boxes. A well-done paper on single-tier dryer sections gave us an update on sheet quality effects but was not especially new. A paper on machine calendering seemed similar to material presented two or three years ago.

Fluid mechanics in papermaking

A paper on pressure drop calculations in syphons and riser tubes seemed a solid addition to a more general long-term effort at modeling dryer sections. Nuclear magnetic resonance (NMR) flow measurements on fibrous suspensions was shown to be possible, but the application is probably very limited by the inherent need of the magnetic field and high cost of equipment. Perhaps it will be a research laboratory tool. Two sequential papers on a wet press simulation model were very interesting and seemed to give promise of a rather simple calculation method. It may well be necessary to do specific furnish testing to define the constants needed. Only time will determine if this is a useful addition to wet press evaluation.

Flow visualization

This was a delightful session on new techniques that can be used to model or simulate several process systems. An outstanding video was shown on the flow and velocity fields determined by computational fluid dynamics for a

This year's Paper Chase drew 70 participants and raised more than US\$ 16,000 for scholarships.



9th Annual 5K Paper Chase nets scholarships for 10 pulp and paper programs

Andrew K. Jones of ABB Combustion Engineering Systems moved back into the first-place slot in the 9th Annual Paper Chase held at the TAPPI Engineering Conference in Nashville, TN, Oct. 1, 1991. Frank J. Sutman of Betz PaperChem Inc. placed second and John C. Holton of Scott Paper Co. again placed third. While the official winning time was 11:52, which would put the finishing times of the Paper Chase in a world-class category, it was widely agreed that the course measurement had been abbreviated.

In the women's division, Wynne Shaw of Weyerhaeuser Paper Company placed first with Dorothy H. Dowe of CRS Sirrinc and Mary Lynn Miller of TAPPI placing second and third, respectively.

This year's race had 40 sponsors and raised more than US\$ 16,000 worth of scholarships for the following schools' pulp and paper programs: North Carolina State University, University of Minnesota, Washington State University, Institute of Paper Science & Technology, University of Maine, College of Environmental Science & Forestry-SUNY-CESS, Miami University Pulp and Paper Foundation, Auburn University, Western Michigan University, the University of Wisconsin-Stevens Point.

This year's sponsors included BE&K Engineering and Construction, *American Papermaker Magazine*, *Pulp and Paper Magazine*, *PIMA Magazine*, Beloit Corporation, Betz Industrial, Black Clawson, Core Link, CRS Sirrinc Engineers, Dixie Construction Products, Eichleay Constructors (ECI), Escoweld, Felker Brothers Corporation, Fluor Daniel, General Electric Company, Gotaverken Energy Systems, Huyck Formex, Jaakko Pöyry Marathon, Kamy, Keystone Valve USA, KITZ Corporation of America, Krieger Corp., Longview Inspection, Magnesium Elektron, Marathon Electric, Nash, Clark & Vicario, Peerless Pump, Rust Engineering, Sandwell, SKF Bearing Services Company, Sensor & Simulation Products (Weyerhaeuser), Southern Environmental, Tampella Paper Machinery, The Clarkson Company, The Downs Group, Inc. (SCAPA Group), The Falk Corporation, The Johnson Corporation, Valmet Paper Machinery, and Voith.

—Scott R. Robertson
Director of Communications
BE&K, Inc.

A few moments with the 1991 Engineering Division scholarship winners

Jeffrey W. Kerr is a good example of the recruitment problem facing the industry today. Although he grew up in a location known for its forest products, and although he was enrolled in a chemical engineering program, he was unaware of the careers in the paper industry until he joined a student chapter at college. Only there did he discover the industry career options available to him.

Now Kerr is the president of the Oregon State TAPPI Student Chapter and he is a self-professed missionary of the paper industry. Knowing that other students are as ignorant as he was, Kerr claims, "I want to get the word out that there are careers in the paper industry for electrical engineers, mechanical engineers, and chemical engineers."

He thinks that getting the word out to professors and other math, science, and engineering associations may be a key to this puzzle facing the industry. Kerr is pursuing a degree in chemical engineering and pulp and paper technology at Oregon State University in Corvallis, OR. Kerr has a head start on his career since he has served as a process engineering intern at James River Corporation's Halsey mill in Halsey, OR, for two summers.

Jennifer L. Moger comes from a family of engineers,

including a sister who is pursuing a degree and who is responsible for introducing her to the paper industry. If it hadn't been for her older sister who recommended exploring the field of paper technology, Moger might have gone the way of many students pursuing engineering degrees, unaware of the fields in the paper and related industries. "You simply don't know that engineering is part of the industry—or chemical engineering for that matter."

Moger agrees with Kerr that the industry needs to get more information to other student associations and to professors of engineering who simply have never been given a background in the industry and who are basically ill-equipped to advise students on career options and fields of study. Understandably, Moger wants more women to feel comfortable with engineering careers in the paper and related industries, and she encourages her peers to explore the vast possibilities available.

Moger is studying chemical engineering with a pulp and paper option at Auburn University in Auburn, AL. She interned at Mead Containerboard Corporation's Stevenson, AL, mill where she concentrated in the area of pulp strength development.

The Engineering Division awarded two US\$ 2500 scholarships for the 1991-92 school year to **Jennifer L. Moger** and **Jeffrey W. Kerr**. The scholarships were presented during the conference's award recognition and plenary lecture segment by Division and General Conference Chairman **Jere W. Crouse**, left, and by TAPPI President's Representative **Neil G. Vander Linden**, far right.



recovery boiler. Other computational techniques were used to prepare another video of three-dimensional free-surface flows from an impinging jet. A more specific presentation of air entrainment at the contact line for low-speed roll coating gave information for a better understanding of this potential problem in coating methods with a promise of more work to be done. If one missed this session, one missed an opportunity to glimpse what the future holds for us in modeling and simulation confirmed by visualization of all kinds of processes and systems from the recovery boiler to the coater.

Certificates of Appreciation

This year, the Division presented Certificates of Appreciation to outgoing committee chairmen during the officers' reception and dinner. Those recognized served from 1989–1991 and include:

- William H. Friend, Energy Management Committee
- Malcolm R. Hathaway, Process Engineering Committee
- Richard R. Manz, Steam and Power Committee
- Robert E. Neiman Jr., Engineering Management Committee
- James A. Rushton, Process Simulation Committee
- Charles L. Sanford, Fluid Mechanics Committee
- Eugene J. Tummett, Materials Handling and Industrial Engineering Committee
- Henry A. Wells, Publicity Chairman, Division Council

100 exhibitors participate in trade fair

The trade fair, held two days, assembled suppliers, equipment manufacturers, consultants, and publications representatives from nearly every facet of the industry. Attendees were able to view live equipment demonstrations, discuss new products one-on-one with vendors, and learn what's new.

1992 Conference in Boston

The TAPPI 1992 Engineering Conference will be held Sept. 14–17, 1992, at the Marriott Copley Place in Boston, MA. Those interested in presenting a paper at the conference should contact William G. "Bill" Cook, Tampella Sandy Hill, Inc., 27 Allen St., Hudson Falls, NY 12839-0803, telephone: (518) 747-1504, fax: (518) 747-1543. The submission deadlines are: February 28, paper abstracts; June 30, edited manuscript; July 31, slide copy. □