

BAY WEST EXPRESS ON A FAST TRACK TO EXCELLENCE

PATRICIA M. PAUKSTA

BAY WEST'S TISSUE AND TOWEL MILL BREAKS RECORDS AND SETS STANDARDS AT ITS MIDDLETOWN, OH, SITE.

LOCATED JUST INSIDE THE CITY LIMITS OF MIDDLETOWN, OH, the Bay West mill turns out tissue and towel on two paper machines at a record-setting pace. Since a 1991 conversion from specialty paper operations, Bay West has produced tissue and towel using 100% recycled fiber under the EcoSoft™ brand name.

The new operation has not only set speed records, but has nettled other producers by setting and maintaining high standards in recycled content. In 1993, Bay West pushed the North American speed record above 6700 ft/min. While producers doing business in New York were asking for relief from the high standards the Empire State uses to define recycled content, after inspecting the Bay West operation, the commissioners kept their standards in place. Bay West is certified as a post-consumer supplier in New York.

TRASH TRANSFORMED

Tons of sorted recovered paper, in which office waste makes up the greatest portion of the mix, are delivered by truck and rail to the mill through a contracted supplier. Local residents, schools, and scout troops also contribute to the mill's huge collection, which is baled and stored to be defibered, deinked, bleached, and formed into tissue or towel or sold as deinked pulp.

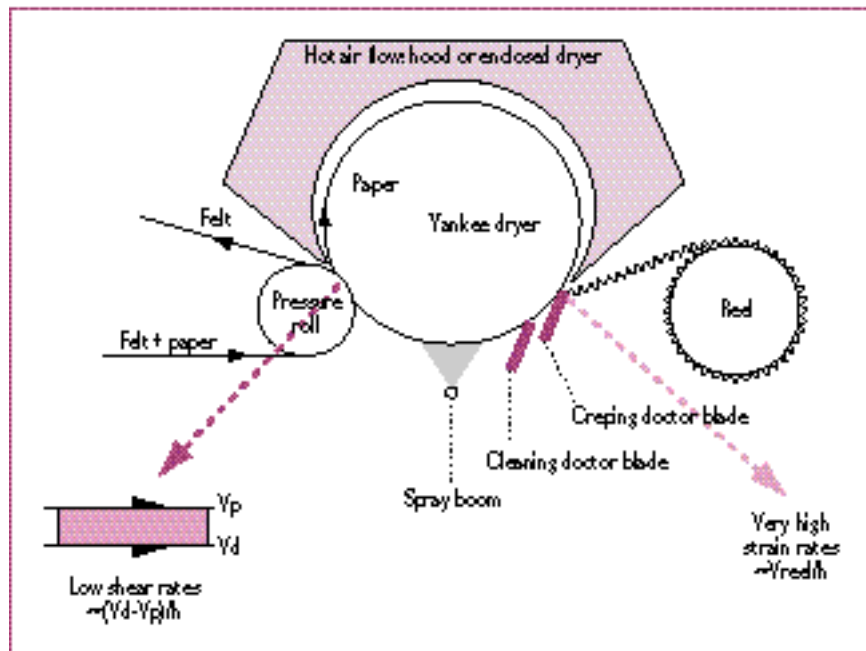
Technical and deink manager Judy Arvan emphasized that "flexibility is the key." The mill is capable of using a variety of furnish—mixed office waste, coated grades, newsprint, corrugated, and junk mail. This enables the

mill to make tissue and towel in a variety of grades and ride out the down trends that occur in individual markets. Pulp from a mix of newsprint and old corrugated are used for the natural towel grades.



Operator Rick Hamilton moves wet lap for shipment to a customer.

Christmas cards, junk mail, and magazines eventually become tissue and towel.



1. Creping and release agents are sprayed on between 240 and 270 degrees (6:30). The web starts at 300 degrees (5 o'clock) on a counterclockwise trip around the Yankee, then leaves the dryer at 240 degrees (7 o'clock).

After staples and other metals are removed by a high-density cleaning system, the recovered paper is defibered and passes through a washing and deinking flotation system. The pulp is 99% water at this point. Removing adhesives and laser print contaminants used to be a challenge, but a new flotation system installed in 1994 helped to overcome this problem. "A heating process lifts the laser ink from the fibers leaving a peppery dirt, which is floated off the top," Arvan adds, "Our customers rely on Bay West to consistently supply a clean product."

In the control room, deink operator Sherman Chapman and his assistant Roger Martin monitor the process, while the pulp passes through a retention tower and undergoes a peroxide bleaching stage. Lastly, sodium hydrosulfite is added to the bleaching sequence. The decision to use this type of totally chlorine-free process was based on eliminating the environmental concerns of chlorine and the ability to bleach all types of fibers.

Bay Best discharges less than 3 million gallons of water as effluent each day. The wastewater passes through an onsite treatment plant and is discharged into the Greater Miami River.

Based on orders for the day, the finished pulp, at this point, either goes to the tissue or the towel machine—or is formed as wet lap with a retention of 50% water.

BAY WEST'S CLAIM TO FAME

A German mill still holds the world record for the fastest tissue machine at 6800 ft/min. And—until July 1, 1993—the Georgia-Pacific mill in Palatka, FL, held the North American speed record at 6500 ft/min. Determined to beat that record, "coach" and machine room superintendent Tom Slezak and his team brought Bay West's tissue machine up to the speed, which placed Bay West in the winner's circle for the fastest tissue machine in North America. Representatives of Scapa Press Fabrics in Frankfort, KY, and Eldorado Chemicals in Cincinnati, OH, were on hand to verify the speed and the quality of the tissue, which had to be at least 95% of the standard, over the time trial of 24 hrs.

The record setting tissue machine is a twin wire C-former, designed to run at 7000 ft/min. The new machine started off in 1991 at a speed of 5000 ft/min and experienced a gradual increase in speed over time. In late 1992 through early 1993, the machine reached 6000 ft/min when trouble with the felt design began. Slezak called in the machine clothing supplier, Scapa Press Fabrics in Appleton, WI, who recommended an upgrade in the machine clothing. The upgraded felt increased water drainage and still offered fiber support.

The tissue machine, built by Escher Wyss—except for the air cap—includes a 16-ft Yankee dryer. Slezak explained that the water is drained by centrifugal force and that because of the machine's design, operators rely solely on instrumentation to monitor the drainage. The wire provides good drainage and fiber support. A continuous wash keeps the felts clean, a critical factor in production.

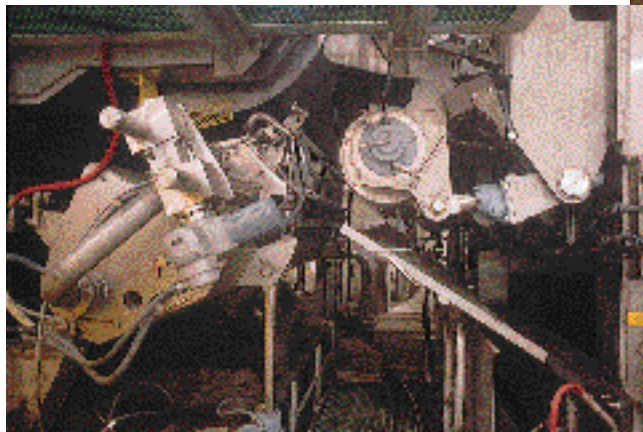
The sheet travels on the felt to the cross section and two pressure rolls—a suction and blind drill. Slezak describes this "as the most critical piece of equipment on the machine." The pressure rolls transfer the sheet on the felt to the Yankee dryer. With steam pressure up to 115 psi, the hood temperature reaches up to 1000 degrees. Before the sheet gets transferred to the dryer, it receives an adhesive coating.

CREPING AGENTS: ADHESIVES FOR THE FAST LANE

As is true with most tissue makers, drying on the Bay West line takes place on a Yankee dryer. The Bay West Yankee is a 16 ft-diameter steam-heated cylinder moving at 6700 ft/min. The web is fully supported from the headbox right up to the press roll. Full support for the web often sets the speed limit on high-speed production lines. Machine clothing is the limiting factor on the Bay West tissue-producing

(right) Wet end

(below) Headbox



Winder backstands

line. Wet felts travel around press rolls at more than 75 mph reversing direction on an 18-in. diameter roll in 0.021 seconds as the web moves from the felt to the Yankee dryer (See Fig. 1).

The still-wet web starts its counterclockwise trip around the Yankee at the 5 o'clock position. Creping agent and a release agent are applied at the 6:30 position across the width of the dryer, or about 6 ft before the web starts its 0.35-second trip around the dryer. Steam heat inside the Yankee cylinder and heated air inside the Yankee hood dry the tissue completely by the time the 120-inch-wide web hits the creping doctor blade at the 7 o'clock position on the other side of the Yankee.

Creping agents are adhesives. They perform two jobs in making tissue. First, creping helps to keep the wet web on the Yankee as a radial force of more than 10Gs tries to send the soon-to-be tissue flying off the dryer in another direction. When the dry web is pushed off the Yankee by the creping doctor blade, creping adhesive bunches the tissue fibers, producing the softness Bay West's customers expect.

To help make this abrupt transition from the dryer to the take-up reel, a release agent is sprayed on with the creping adhesive. The release agent lets the web leave the Yankee smoothly. Proportioning of creping and release agent becomes more critical as production speeds increase. With a 16-foot diameter Yankee rotating at 6700 ft/min, the web must cling to the dryer surface for 0.35 seconds, then release cleanly at the creping doctor blade. Without release agent, the web could be damaged as it leaves the cylinder.

"Maintaining the balance between creping adhesive and release agent is a constant challenge for us," said Al Stitz, senior technical sales representative, Hercules Paper

Technology Division. "With Bay West striving for higher speed and higher quality standards, we are constantly fine tuning our products to make sure they get soft tissue and clean release at record-setting speeds," Stitz added.

TONS OF TISSUE AND TOWEL

With production goals increasing each year, productivity is measured by speed, quality, and a lower rejection rate. In 1995, Bay West produced 97,000 tons of tissue and towel.

Mosinee's interest in keeping Bay West Paper Corp. a strong competitor in the tissue and towel market is demonstrated annually by its approval of capital improvements as in 1994 with the addition of the new flotation system. And, this year, Bay West's converting and distribution operation in Harrodsburg is expected to receive additional converting equipment. Bay West hopes to see both operations awarded ISO 9002 certification by the end of 1996.

Constantly striving for excellence, Bay West intends to maintain its reputation for setting standards and breaking records. **TJ**

Pauksta is TAPPI JOURNAL news coordinator.

A PROFILE: BAY WEST PAPER CORPORATION

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One of several subsidiaries of Mosinee Paper Corp., Bay West Paper Corp. includes the mill and a converting/distribution center. The Bay West paper mill in Middletown, OH, produces tissue and towel rolls for conversion and distribution by its sister operation in Harrodsburg, KY. The mill provides the converting/distribution center with 99% of its tissue and towel requirements.

The converted product line is marketed as EcoSoft™ and includes a variety of coordinated tissue, towel, and soap dispensers. EcoSoft is intended for the commercial and institutional markets or “the away-from-home” customer—workplaces, schools, food services, hotels/motels, health care operations, and public facilities. Bay West also manufactures deinked pulp for sale on the open market.

The EcoSoft product line is marketed worldwide through distributors. Emphasizing quality, service, and a quick turn-around time in filling orders, the number of distributors has steadily increased since the startup in late 1991.

Other subsidiaries in Mosinee’s pulp and paper division are Mosinee Specialty Papers in Mosinee, WI; the Sorg Paper Co. in Middletown, OH; Mosinee Converted Products in Columbus, WI; and Mosinee Industrial Forest in Solon Springs, WI.

History

Bay West has been a converter in the tissue and towel market for many years. In 1990, Mosinee Paper Corp.

began producing tissue and towel and was committed to succeed. A new converting and distribution facility was built in Harrodsburg, KY, and work began simultaneously in Middletown, OH, to convert a portion of Sorg’s idled specialty paper mill into a state of the art tissue and towel mill. The Sorg mill had used both 100% virgin fiber and recycled furnish. Bay West was to be a totally chlorine

free mill that used 100% recycled fiber as its furnish.

Shut down for 11 months in 1991, the Middletown facilities were refurbished and the 35-year-old fine paper machine was rebuilt into a towel machine. The conversion included a new headbox and a Yankee press section. In December 1991, the mill started producing towel and deinked pulp, and work began to bring a new tissue machine on line.

The mill operates 24 hours a day, every day, except for Christmas Day. There are 120 hourly and 40 salaried employees. Many of the employees have been with the mill since its old Sorg days. The mill recently reached a five-year labor agreement with Local 112.



Bay West paper mill, Middletown, OH