AWARD WINNER

WAYNE DAMRAU NAMED 1999 GUNNAR NICHOLSON GOLD MEDALIST

DONALD G. MEADOWS

SOMETIMES THE BEST IDEAS COME AT night, just before you fall asleep. In those half-awake moments, the subconscious mind takes over and gives you the answer to the problem you'd been struggling with that day — and maybe the day before and the day before.

It was that way for Wayne A. Damrau when he came up with the basic concept for the short dwell-time coater. He'd been mulling over a suggestion by Jim Gauss that a better coater was needed for lightweight coated paper.

The problem was how to apply the lowest coat weight possible. With a conventional applicator roll coater, a lot of the coating soaks into the web of paper and can't be doctored off.

"As I was laying awake, I figured if we could apply the coating right next to the coater blade, that's as short a dwell time as we could get," Damrau recalled. "And if you could apply it uniformly and doctor it off right away, any absorption into the sheet would happen after you'd already bladed it, so it would limit the amount the web could absorb."

The idea was sound, but Damrau was simply a young design drafting technician, so it took a while to get people to believe the idea would work. "A research project was opened to evaluate the coater" and a protoype was built for testing on Consolidated's pilot coater, recalled John F. Bergin, the company's research and development director. Several research project engineers ran trials on the coater and helped perfect the design.

"One person doesn't generally set the world on fire," Damrau said. "It takes a team to develop these things."

Several years went into developing the concept and then commercializing the short dwell coater. In contrast, Damrau's concept for a "jet" coater went from research to production in little more than two years. "It was unbelievable," Damrau said.

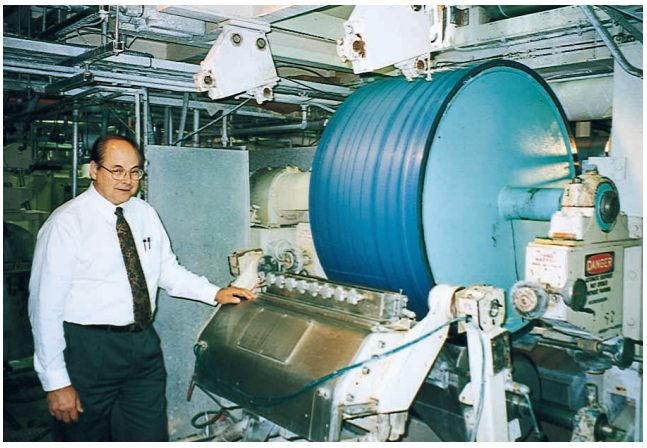
The first jet coater, a double blade coater now marketed by Voith as the JetFlow C, was installed at Consolidated Paper in 1989. Termed the CPI 86, it was first used on an off-machine blade coater at the Wisconsin Rapids Division, then at the nearby Biron mill, on the No. 24 machine. The first production trial of the short dwell time applicator was also on the No. 24 machine.

The CPI 86/JetFlow C uses two leveling blades. To work as it should, however, coating speeds need to be upwards of 6000 ft/min, Damrau said. "You really need to have a high web speed to keep the dwell time short, otherwise you get sheet expansion between the two blades."

The most recent coater developed by Damrau, the curved lip fountain, is marketed by Voith as the JetFlow F. This coater



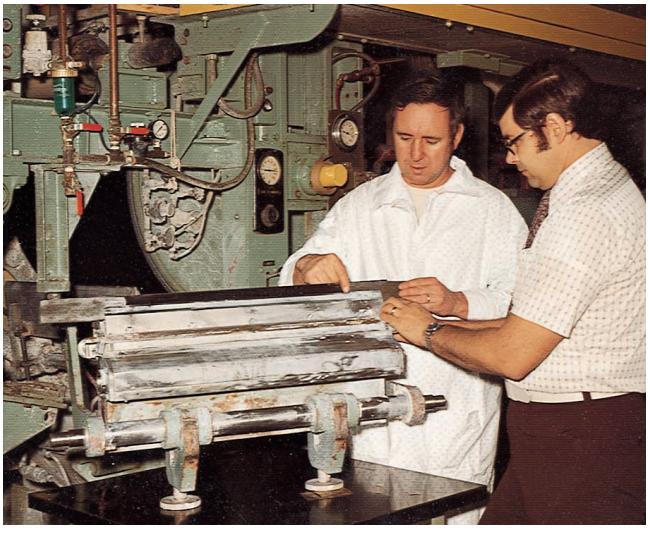
COATER DEVELOPMENTS EARN AWARD



Damrau with Consolidated Paper's pilot coater machine in Biron, WI.

"is capable of applying heavy coat weights (as well as lighter coat weights) at speeds to at least 6000 ft/min while achieving laminar flow patterns," Bergin explained. That avoids film split and eddy patterns that would cause coating streak patterns and lower the paper quality, he said. The first JetFlow F was installed on the No. 64-1 off-machine blade coater in 1993 at the Wisconsin Rapids Division.

It is those developments, and other refinements to the coating process, that have earned Damrau TAPPI's highest honor, the 1999 Gunnar Nicholson Gold Medal. It is to individuals "who have made preeminent scientific and engineering achievements of proven commercial benefit to the world's pulp, paper, board, and forest products industries."



A prototype of the short dwell time applicator (SDTA) being examined by Damrau and a technician

Of the 40+ patented developments Damrau has been responsible for, he's particularly proud of the short dwell and jet coaters. Voith Sulzer is the licensed manufacturer for the coaters invented by Damrau and developed at Consolidated.

"The inventions and professionalism of Mr. Damrau are highly regarded by Voith Sulzer Paper Technology and our customers," said Hans Müller, president and CEO of Voith Sulzer Papiertechnik GmbH & Co. KG.

Consolidated and Voith began one of several joint development programs in 1981. Working together, in Wisconsin and in Germany, "we recognized and discovered Mr. Wayne Damrau as an outstanding and brilliant expert in the area of coating and surface treatment," said Rudolf Beisswanger, Voith's VP of coaters and winders until 1995.

Damrau has also benefitted from the cooperative work with Voith. It's given him insights to help solve coating problems and it's helped him keep up with the latest technological developments.

STEPS TO A CAREER

Damrau came to the pulp and paper industry through happenstance.

Born in Amherst, WI, in 1937, Damrau was raised on a dairy farm. He had turned eight years old by the time electrical service was extended to the rural homestead. He remembers how amazed the family was after replacing their gas lamps with a single 100-watt light bulb — it was suddenly so bright in the room.

After graduating from high school, Damrau and a friend set off for Milwaukee to make their fortunes. He worked in electrical maintenance at Gimbel Brothers' Department Store in 1955. A year later he went to work with the Falk Corporation. He started out as a stockroom worker, but accepted an opportunity to take a design drafting course while there, which allowed him to become a mechanical drafting apprentice.

It was about this time that Damrau met Germaine, his wife-to-be. The couple had grown up within a few miles of each other, but it wasn't until he went away to Milwaukee that he got to know "Gerry." She and her girlfriend had also gotten jobs in Milwaukee. When they found out Damrau and his friend were driving to and from Amherst, the ladies asked for a ride. In time, Damrau married Gerry "and my buddy married the other girl."

Damrau left Falk in the summer of 1960. He wanted to move closer to his home town and briefly worked for Surge Sales & Service, selling dairy equipment with his father-in-law.

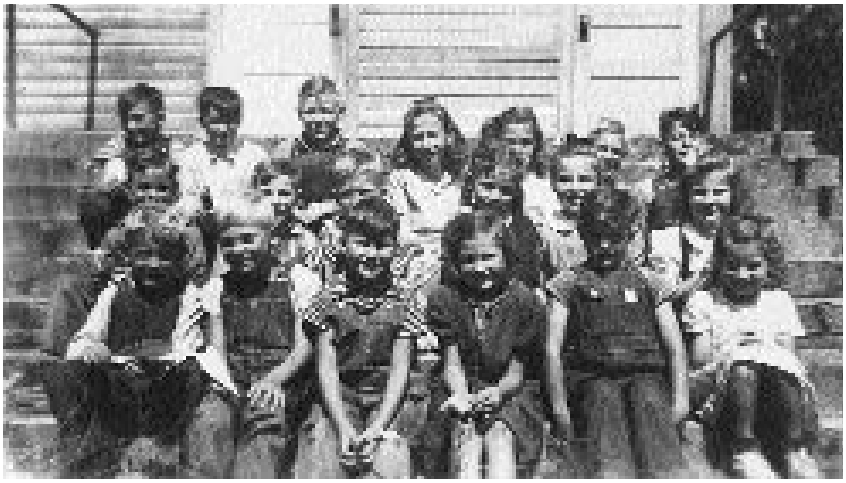
Up until that point, Damrau had never been inside a paper mill. He was living fairly close to the Consolidated mill and decided to apply for a drafting job there. He was

hired in March of 1961 as a mechanical draftsman and advanced through various positions in the engineering and maintenance department to his current position as engineering and coater research manager. He is scheduled to retire April 30, 1999 after 38 years with Consolidated Paper.

In 1964, The University of Wisconsin— Stevens Point started an engineering technician's program for area paper mills. At first, instructors would come to the mill. Between 28 and 30 people, including Damrau, participated during the first couple of years. Later courses were taught at Stevens Point as the initial project grew into a degree program. Damrau and three others who stuck it through the program would leave from work at 3:30 p.m. three nights a week to drive about 20 miles to the University for classes that ended at 9 p.m. They had to go back on the weekend for more classwork.

In 1974, nearly 20 years after graduating from high school and 10 years after the first session at the mill, Damrau earned a BS in pulp and paper science from the University of Wisconsin— Stevens Point. "It was very worth doing," he said, in spite of the long days and time it took away from other activities.

During that period, Damrau still managed to help build two of the family's houses. The couple was also raising their four children — Dale, Doug, Doreen and Denise. Both Dale and Doreen work at Consolidated.









A young Wayne Damrau (top left, third from left, in front) at the one-room, Valley View School in Wisconsin; as a pitcher on Falk's baseball team in Milwaukee (top right); with Gerry, his new bride (bottom left); Damrau, along with George Mead, George Rasmussen and Sherwood (Woody) Holt with Patent Club Silver Dollar Awards (lower right).



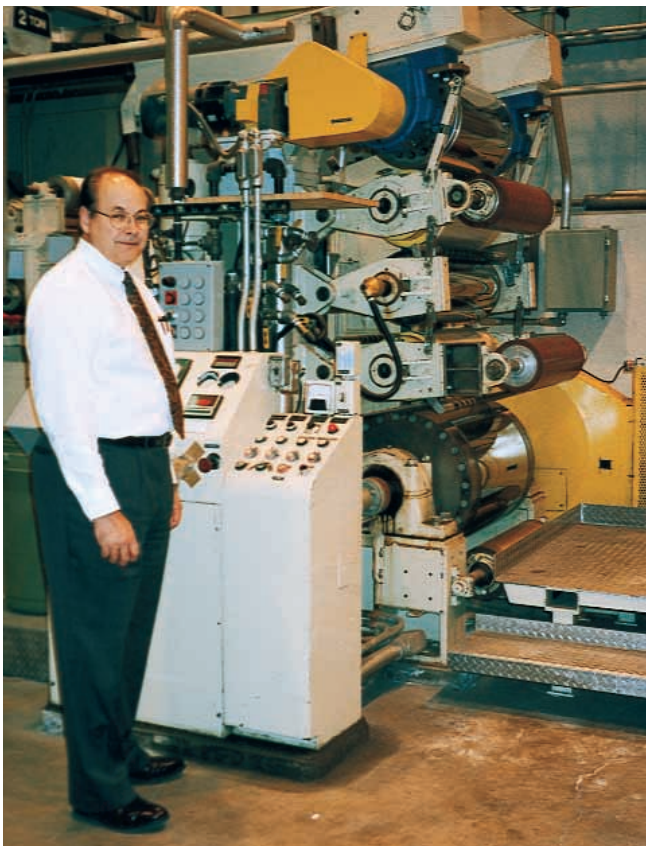


A recent photo of Damrau and his wife, Gerry (left); an earlier photo of Damrau (right) with his father, Albert Damrau (center) and his father-in-law, John Stuczynski.

In 1993, the four original graduates — Damrau, Donald J. Gunderson, David A. Krommenacker and Carroll O. (C. Kelly) Knutson established the "Four Horsemen" Scholarship Fund. "We've given five scholarships already," Damrau said. "We try to give them to nontraditional students, like we were."

Outside of work, Damrau enjoys hunting and fishing, but spends much of his leisure time on wood-working. His projects have ranged from gun cabinets and tables to building on the family cottage down in southern Illinois.

For many years he enjoyed playing baseball, a sport he'd been active in since high school. While at Falk, Damrau played baseball in the Industrial League. When he went to work for Consolidated, he joined the company's softball team. Most of the time he pitched — "hardball, baseball, fast-pitch softball and slow-pitch softball, I went through it all." He finally quit league play when he turned 50 years old. "I figured that was old enough so I didn't get hurt or killed," he said. **TJ**



Damrau at Consolidated Paper's research center in Biron, WI, alongside the pilot supercalender he designed in the early 1960s.

Meadows is editor of TAPPI JOURNAL



Two of Damrau's favorite pastimes.