

FRASER FOCUSES ON THE FUTURE

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*INNOVATIVE SPECIALTY PAPERS MILL FOCUSES ON THE FUTURE,
SMALL CUSTOMERS, AND VERSATILITY.*

FRASER PAPER'S MADAWASKA, ME, AND EDMUNDSTON, NB, mills are among the busiest mills in North America right now—not so much because of production, but due to expansion at the mills and changes in the company's corporate structure.

Fraser's sights are high—and they should be. The company merged in February with Cross Pointe Paper Corp. and Thorold Specialty Papers, making it one of North America's largest specialty paper manufacturers. The Madawaska mill's focus is on small clients, though. Small clients who order mostly lightweight coated (LWC) and directory grades, as well as specialty printing and converting grades.

"We don't pursue large customers," said Paul W. Vanier, manager of product development for Fraser, "We strive for a large share of small markets." Fraser seems to have that, with a product line ranging from 14 1/2-lb bible grade to a 55-lb wall board. Fraser's products don't stop there though. The two mills are known for creating specialty papers for their customers, and making their nine machines do the job.

The majority of the papermaking operations take place at Fraser's mill in Madawaska, ME. Just a stone's throw across the St. John River, and the Canadian border, however, is the Edmundston, NB, pulp mill supplying the papermaking operations. Because of the mills' proximity to one another—less than a mile—they are considered one unit.

PULP MILL

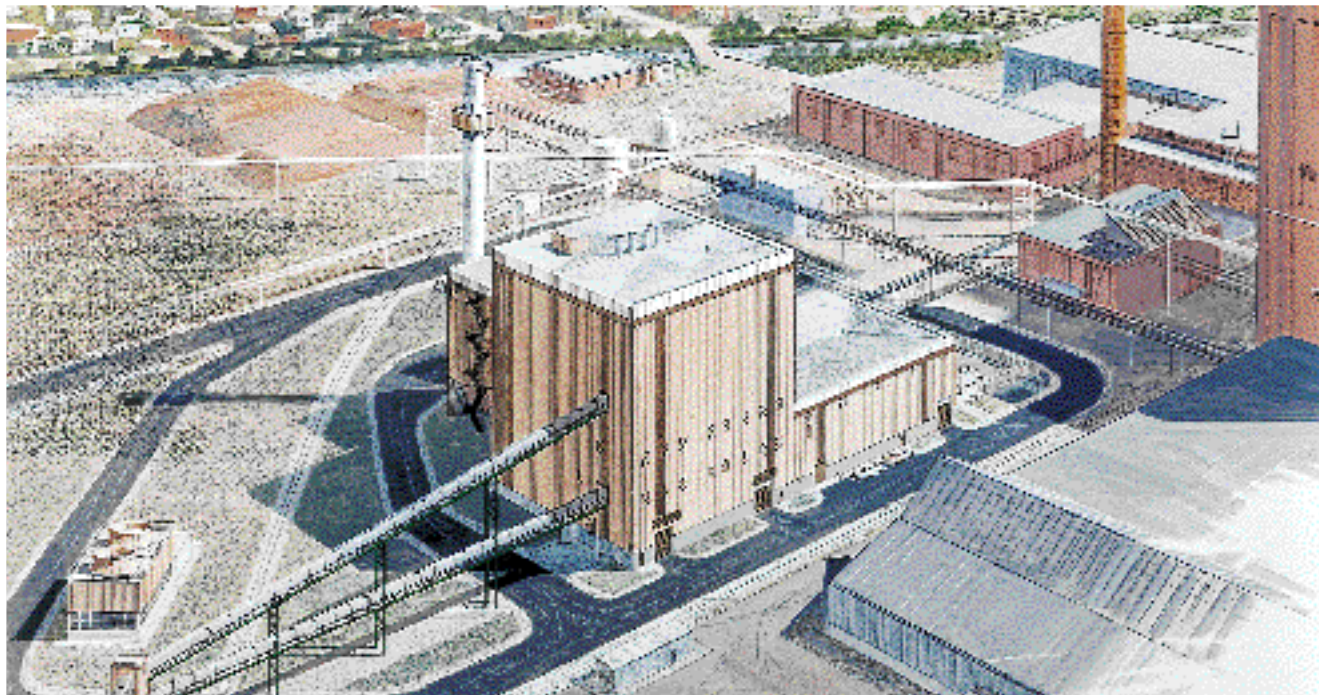
The pulping operations of the unit are mostly handled at the Edmundston mill. The pulp mill contains a chemical line producing 500 tons/day of magnesium bisulfite pulp and a 360 tons/day groundwood line. A deink pulper also supplies 50 tons/day of recycled newsprint to a

boxboard machine on-line at the pulp mill as well as Madawaska's groundwood grades.

A big plus for the pulp and paper facility is Fraser's forest lands. Fraser has invested a lot in Canadian woodlands since the company's early days. Wood for the pulp mill is harvested from over 2 million acres of forest lands that the company owns and manages in the United States and Canada. The Edmundston mill provides 65–70% of the pulp needed to supply Madawaska's eight machines. The remaining 30–35% is supplied by James MacLaren's Thorso, PQ, pulp mill, owned by Fraser's parent company, Noranda Forest Inc.

One of the most exciting economic events in the Maritime Provinces is happening at Fraser's Edmundston pulp mill. That is the addition of a CDN 133 million (US\$ 118 million) power cogeneration plant. The project started in 1990, after New Brunswick Power (NB Power) sought companies to build cogeneration plants. The Edmundston pulp mill was a prime candidate. Only 20% of its current power needs were self-generated. The teepee burning of Fraser's nearby woodlands would be eliminated through the plant, and the company would save a lot of money on electricity bills. Cliff Ouellette, major project coordinator at Fraser, and former mill manager of the Madawaska mill, is responsible for the construction and engineering of the cogeneration plant.

The cogeneration plant will operate in this manner: Fraser will use a mix of 85% mixed waste wood to 15% hardwood chips, about 870,000 green tons/year, to generate electricity which it will sell to New Brunswick Power. NB Power will turn around and sell Fraser back its own power, at an awfully reduced rate. Fraser's contractor for the project is Zurn/Nepco, who has become somewhat of a partner in the plant. The project was originally scheduled for completion in May 1997, though Fraser now expects the date to move ahead. Why? Fraser



An artist's rendering of the completed cogeneration plant

is splitting the revenues from NB Power with Zurn if the project is completed ahead of schedule.

When completed, the cogeneration plant will eliminate Fraser's solid waste disposal by 33%. It will also reduce Fraser's contribution of sulfur dioxide (SO₂) to the environment by 43%. The plant will provide natural recycling for the mill as well, in that it will consume all fiber waste material. The ash from the plant will be used as a soil enhancement, improving agricultural growth and productivity. The plant also creates 150 new full-time jobs for Fraser, and is projected to create 115 indirect permanent jobs.

The plant will achieve a lot of savings for Fraser as well. It will replace CDN 4.7 million in purchased low sulfur fuel and the mill's annual consumption of foreign crude, an estimated CDN 9.9 million. In the end, though, what Fraser hopes the cogeneration plant does is help the company make better paper.

Paper is made on only one machine in Edmundston, a 120-in. boxboard line that operates using a mixture of market virgin pulp and recycled newsprint. The machine was manufactured by Dominion Engineering and can handle a basis weight of 61-113 lb. Running at 400 ft/min, the machine produces about 44,000 tons/year of boxboard. The machine features an on-line coater and a Maxson Masson Shear.

PAPER PRODUCTION

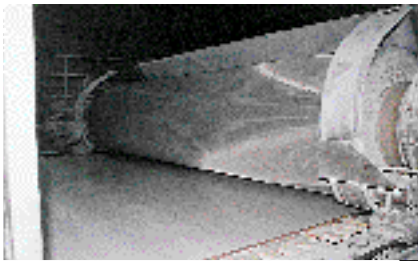
Paper production is the heart of Fraser's Madawaska operations. Pulp manufactured in Edmundston is slurried and sent across the St. John River—and the U.S. border—at less than 1% solids and goes into storage tanks. The

Madawaska mill also uses market pulp, which is mixed in with the stock from Edmundston.

Fraser has eight machines at Madawaska capable of manufacturing nearly every specialty paper imaginable. The company's product development team is extremely willing to work with its small clients to tailor products to their needs. Fraser has clients in the United States as far away as southern California who sought a company to create a specialty paper. Fraser is also developing an overseas following as well, with the company's recent entry into the supercalendered (SC) market. To continue its expansion into the SC market, Fraser has begun a rebuild of the mill's PM5. The US\$ 20.3 million rebuild is projected to help Fraser reach a volume of 70,000 tons by 1999. PM5 was originally built in 1932 by Pusey & Jones, with a major rebuild in 1979. The machine has a Voith W-type hydraulic headbox, a Beloit press section, and a Valmet fourdrinier. The machine is controlled by a Fisher-Rosemount RS3 Process Management System.

Other than its specialty products, Fraser concentrates on three main products: 350 tons/day of LWC magazine stock (averaging 30 lb basis weight), 300 tons/day of uncoated groundwood directory paper, and 400 tons/day of coated and uncoated freesheet specialty papers for applications in labels, carbonless, thermal, ink jet, and release backing grades.

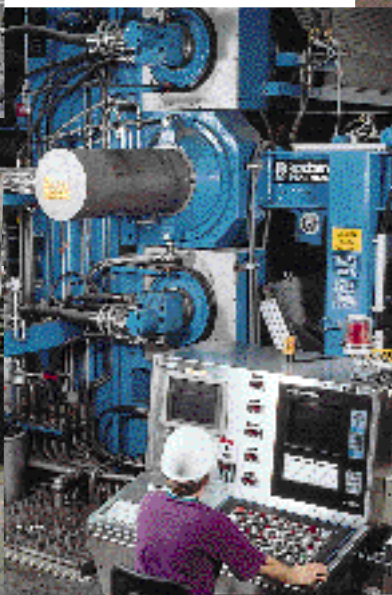
One of the great beauties of the Madawaska mill is its flexibility as a papermaker. The eight machines are easily reconfigured on a regular basis to produce different stocks for different customers' needs. Fraser has seven other machines in Madawaska. PMs 1 and 2, Madawaska's original machines, built in 1925 and 1926 by Pusey & Jones, concentrate on the mill's LWC products. PM 1 is



(left) A dandy roll aids production of lightweight bible papers on PM4



(above) An operator works in front of Fraser's soft-nip calender on PM5



(above) The cogeneration plant, under construction at the pulp mill, is about 30% complete in this picture taken in February 1996.



(left) A mill worker tapes a reel coming off a winder behind Coater 2

capable of handling basis weights of 26–30 lb. The machine trim is 148 in., and it runs at 1350 ft/min, producing about 30,000 tons/year. The machine, along with its neighbor, PM2, was rebuilt in 1989 as part of a US\$ 12 million project. PM2 has the same trim, but produces about 33,000 tons/year. PM1 has a Voith headbox, Sulzer-Escher-Wyss first press section, Beloit second press section, Valmet fourdrinier, Rice Barton dryer, and is controlled by ABB AccuRay CD and MD controls. PM2 has a Beloit headbox, Pusey & Jones first press, and a Beloit second press. It is PM2 that makes Fraser's heaviest specialty product, a 55-lb wall hanging board. PM3, built in 1932 by Pusey & Jones, produces 27.75–55-lb stock. The machine has a trim of 149 in. and runs about 1375 ft/min. Annual production runs 33,830 tons. Fraser recently invested US\$ 15 million in cross-directional controls and finishing equipment for PM3. The enhancements included the installation of a soft-nip calender to achieve the smooth surface required by specialty converters purchasing the machine's paper.

PM4 was built in 1978 by Valmet, and is perhaps the most interesting machine at the Madawaska mill. Fraser has recently upgraded the machine by placing a dandy roll on the forming wire. What makes Fraser's use of this application different is that the roll has barely affected the design speed of the machine. Fraser worked closely with Johnston Dandy and NDC, the supplier of the consistency scanner, to design and build a system that would

not slow the machine much below its design speed of 1600 ft/min. The system has worked, improving paper quality without lowering output of 42,000 tons/year. PM4 manufactures Fraser's lightweight book and bible grades, between 14.5–36 lb.

PMs 5 and 6 were built in 1961 by Pusey & Jones. Both were rebuilt in 1979 along with PM3, and PM5 is currently in a rebuild. PM6 is a near twin of PM5, and only minor differences such as the gauging and control systems are apparent. The rebuild of PM5 will make a drastic difference though. PM6 produces coating base grades 19–33 lb. The machine's trim is 208 in., two inches less than PM5. Prior to the rebuild, both machines had Voith W-type hydraulic headboxes, Fisher-Rosemount RS3 Process Management Systems, Beloit press sections, and Valmet fourdriniers. PM6's output is around 74,000 tons/year, as is PM5's. Fraser has two off-line coaters adjacent to PMs 5's and 6. C2 is a Rice Barton coater handling 34–55-lb stock at about 3200 ft/min. C3 was built by Beloit and coats 26–47-lb stock at 4000 ft/min. Both machines feature Valmet gauging systems.

PMs 7 and 8 were added to the mill in 1958 and 1968 respectively. Pusey & Jones and John Inglis built PM7, which is capable of making basis weights of 20.5–54 lb. The machine features a metering size press that is used strictly for specialty, functional coatings, one of the first of its kind to do so. PM7's trim is 215 in. The machine runs at 2000 ft/min, producing 58,200 tons/year. PM8,

built by Beloit, is Fraser's fastest and widest machine. With a trim of 269–282 in. and a speed of 2900 ft/min, the machine produces 92,000 tons/year, about 21% of Madawaska's total output. Both machines have Voith headboxes, ABB DCSs, and ABB AccuRay CD and MD controls. PM7 also has a Valmet Tri-nip press, Voith Slotted Thin Stock screens, and a ULMA web inspection system.

An impressive feature of the Madawaska mill is its parts warehouse. Since Madawaska and Edmundston are not located near any supplier's location, it keeps plenty of parts on hand. The mill stores in Madawaska's parts warehouse could probably run the mill for quite awhile. In addition, Fraser does a lot of its own routine maintenance, such as roll refinishing, on-site using its machinists. The company saves money and time that would be spent shipping the products back and forth.

Fraser ships from Madawaska by both truck and rail. Green trucks with the Fraser logo are not an uncommon sight on the roads of New England. A spur of the Bangor and Aroostook Railroad (BAR) is also at the mill to move product from place to place. Fraser maintains a country-wide network of warehouses to ensure that customers get their paper when they need it.

EMPLOYEES

Madawaska and Edmundston are small towns. Because of its location at the tip of Maine, further north than 60% of the population of Canada, the Madawaska mill often has a hard time drawing research and management people to work at the mill. Most employees are from the surrounding area, and are accustomed to having snow on the ground six months of the year. Fraser is a family business, so to speak. Generation after generation of Madawaska and Edmundston families have worked at the mill. Fraser is the largest employer in the area with 1130 people at the paper mill and 635 people at the pulp mill. According to Vanier, about 40 Canadians work on the U.S. side, while only a few Americans work on the Canadian side.

Fraser treats its employees extremely well. Turnover is low, and jobs at Fraser are highly coveted in the community. A gain-sharing plan was adopted a few years back that allows employees to earn a portion of what they save the company. Mill employees also have their own daily newspaper—written by employees and published by the company. Screening for new employees is extremely tedious, and new hires are put through a rigorous general training process with a heavy emphasis on safety. The Madawaska and Edmundston mills are rated among the safest in the industry, and their record continues to improve. OSHA and the Maine Safety Council have both recognized Fraser for its safety performance at the mills.

One benefit available to mill workers is an innovative college degree program offered on-site by the University of Maine. Workers only need to put in the effort—six year's worth—and Fraser will pay for their degree in pulp



Fraser's Madawaska, ME, paper mill (foreground) and Edmundston, NB, pulp mill (background)

and paper. About 90 of Fraser's employees are currently participating in the program.

Fraser's mill management also has its programs. Over the years, it has instituted team problem solving, cross-functional teams, and strategic planning.

"We've had a lot of outside help," admits Vanier.

RESEARCH CENTER

The Madawaska and Edmundston mills' annual sales continually top US\$ 300 million, and the company enjoys every bit of it.

"We'd like to be known as a company that makes a lot of money," said Vanier. To do that, the company has set its capital investment policy to improve the mills' existing machines and equipment instead of purchasing new machines. Fraser commits between 15 and 25% of its capital budget to environmental improvements, and a large part of what is left over goes to improve the machines.

Another exciting project at the mill, spearheaded by Vanier, is the addition of a research and development center. The addition, at the back of the mill, will be offices and development laboratories for new products. It will also be a place of applied research—where contacts will be established with new customers, as well as being a showplace for the mill. Fraser's parent, Noranda Forest, owns part of a larger technology center, the Noranda Technology Centre, in Pointe Claire, PQ. Some of the technology for Fraser's products is developed there, then transferred to the mill. The research and development center at the mill will enhance the efforts of the main center.

With all of the expansion, innovation, merging and creation going on in Madawaska and Edmundston, Fraser is not a dull place. Fraser looks to a future where it is extremely visible, and Madawaska and Edmundston are its keystone. **TJ**

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