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Dunn Paper:

A tradition continues

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By **GRAEME RODDEN**, Editor

Doing a lot with a little

A new process and quality control system on its PM 3 has helped Dunn Paper uphold the promise of its founder 84 years ago to make high quality its first consideration

It's been five years since Dunn Paper was taken over by the Meriturn Partners private equity firm and a management group of 10 people and although president and CEO Brent Earnshaw says that it has "been a battle" at times, he can point with pride to the fact the company has increased the business "substantially", from 55,000 tons at startup to approximately 80,000 tons/yr today. And, as Earnshaw says, this comes at a time when the smaller companies in this industry are disappearing.

Dunn Paper takes its logo from the lighthouse of the adjacent Coast Guard station, seen at top left in the photo

Startup may be a misnomer because the mill in Port Huron, MI, has been around since September 15, 1924, when Theodore W. Dunn opened the Dunn Sulphite Paper Co. The Dunns were a well-known papermaking family in Port Huron, which is just across the St. Clair River from Canada. The mill has always been a paper mill, buying its pulp since startup. Now, it buys mostly virgin bleached pulp, hardwood and softwood, all from North American sources. It also buys a lot of post-industrial pulp substitutes such as paper plate clippings that it repulps. Because of end-use food-related applications, all the pulp and waste must be FDA approved.

As now, even then the mill was known for its specialty papers, for example, bread wrap and other food-related applications. At startup in 1924, Dunn Paper could produce 15,000-18,000 tons/yr on two Beloit paper machines with Yankee cylinders that could impart machine grade (MG) properties.

The Dunn family owned the mill until the early 1960s when Dennison took over. At the time, Dennison was interested in the one-time carbonizing paper market. It was this growth in this market that spurred the investment in paper machines 3 and 4 that were installed in 1969 and 1973 respectively. Earnshaw explains that PMs 1 and 2 were also making one-time carbonizing once the technology was introduced in the 1950s. High-strength MG papers were needed for one-time carbonizing and Dunn had the ability to produce them. At one point in the 1970s, all four paper machines were making one-time carbonizing.

The growth of thermal paper spelled the end of the one-time carbonizing era. Therefore, in the 1970s, the company invested heavily in product development in an effort to re-invent itself. This led to its production of bleached coated and uncoated packaging papers.

In 1987, ownership also changed when James River's packaging division purchased the mill. This lasted until 1995 when it spun it off with Crown Vantage. However, Crown Vantage went bankrupt in 2000 and the mill changed hands once again. This time Curtis took over. This was not to last long either as the company ran into financial difficulties with other businesses it ran and was forced to look for a buyer for the Port Huron mill.

At one pint it was feared the mill would close permanently. Enter Meriturn Partners and the management group. Earnshaw had first worked at the mill in 1988 as technical director with James River. In 1997, he left for a job in James River's corporate headquarters in Cincinnati, OH. In 1999, Earnshaw started his own distribution business, American Paper & Film, acting as the North American agent for a number of European mills.

In 2002, Curtis asked Earnshaw to return to Port Huron. "I was here for the financial crisis and subsequent takeover."

The mill was down for a few weeks and customers were lost. It re-opened with two machines running with a third operating if needed. Earnshaw credits the work force for the "excellent job they did in restarting the mill. They were motivated and committed to making it work and they have that same attitude today."

True to tradition

The local tradition of papermaking was a reason the new group adopted the original Dunn name. "The project to restart the mill was a big deal locally," Earnshaw adds. "So, when we were looking for a name, it felt good to go back to the roots." The mill's logo is taken from the adjacent Coast Guard station lighthouse.

As he said, it's been a battle but Dunn Paper has held onto its coated business and expanded the waxed paper business greatly.

Today, Dunn Paper's production is split evenly between coated papers for food packaging and specialty papers, and uncoated MG for food packaging.

If all the different parameters such as basis weight are included, Earnshaw says that the mill can produce more than 150 different grades. Dunn Paper prides itself in offering customers "enormous flexibility in manufacturing with coating, waxing and latex-saturating capabilities. Multiple size press, coating and calendering options are available."

PM 1 is 125-in. trim machine with a maximum drive speed of 1,500 ft/min. It produces coated paper with a basis weight range of 23-55 lb/3,000 ft^2. It can make uncoated paper in a basis weight range of 14-50 lb/3,000 ft^2. Capacity is 53 tons/day.

It has a size press, one online blade

coater/waxer and a one-nip hot-soft calender.

PM 2 has a 123-in. maximum trim and can run at 1,000 ft/min. It can produce 29 tons/day of uncoated paper in a basis weight range of 13-38 lb/3,000 ft^2. It has a size press, a two-roll steel calender and can also make waxed products.

PM 3 is one of the mill's newer machines and features a 135-in. trim. Its maximum drive speed is 2,000 ft/min and it can produce coated paper with a basis weight range of 23-78 lb/3,000 ft^2 and uncoated paper with a basis weight range of 14-66 lb/3,000 ft^2. It can make 95 tons/day. It has a size press, two online coaters and a two-nip hot/soft calender. The 18-ft diameter Yankee cylinder was the largest in the world at time of installation.

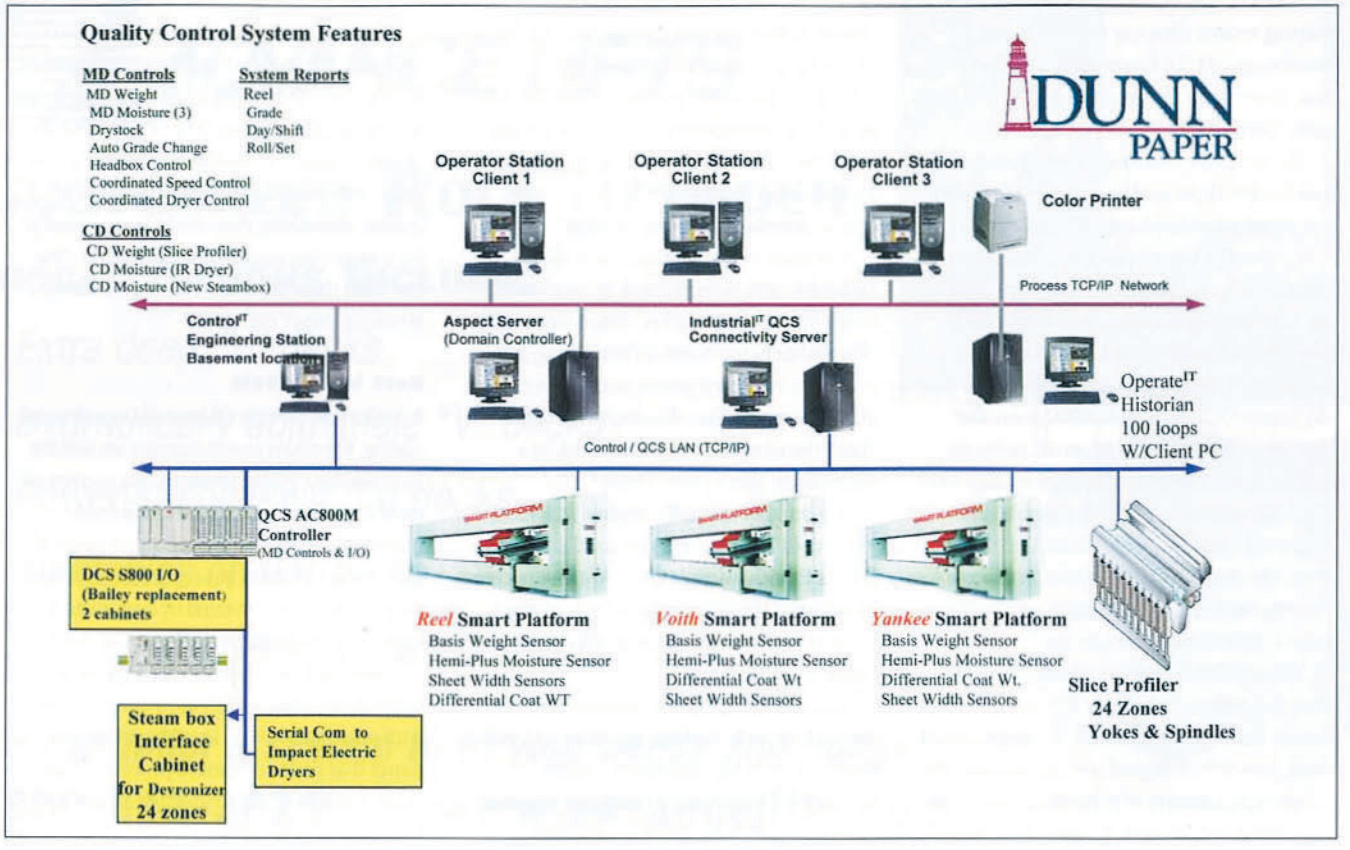
PM 4 is a 124-in. trim with a speed of 1,500 ft/min. Its basis weight range for coated is 23-55 lb/3,000 ft^2 and 14-50 lb/3,000 ft^2 for uncoated paper. Capacity is 65 tons/day. It features the same size press, dual online coater and calender configuration as PM 3. All four machines have Yankee cylinders. Also, each machine has its own dedicated set of clothing. The felts are not interchangeable.

Earnshaw explains that Dunn makes 100% base paper. That is, all of its production is sold to converters and converted in some way. "We are a large supplier to the fast food industry as well as the beverage industry for labels. We also supply some niche areas such as soap wrap."

Specific end uses include fast food wraps (waxed and MG papers), beer labels, pouch papers for sauces and mixes, specialty pressure-sensitive label papers and specialty coated release papers. The majority of Dunn's papers are also printed and coated in some way such as hot melt adhesives, barrier coating, metallized.

Product development is an exceptionally important facet to Dunn's competitiveness. In 2007, it introduced C1S postage stamp facestock, C1S tamper-proof security labels, C1S high-yield opaque wet strength label paper and a coated outdoor poster board. In 2008, Dunn planned to introduce 3- and 4-mm latex-saturated masking tape, char- and grease-resistant deli papers, non-woven strippable wallpaper, latex-saturated wood veneer backing, sterile guard medical packaging paper and lightweight beverage labels for the export market.

FIGURE 1.
Overview of the ABB Industrial^{IT} at Dunn Paper



Dunn's strategy is to continuously re-engineer and upgrade core products as well as selectively entering new niches.

However, product development and introduction comes at a price. It cannot be accomplished without investing in the assets: human and machinery.

Fast payback needed

Since 2003, Dunn has invested more than $4.5 million on what Earnshaw terms "profit-sustaining activities and a few innovations. We have to be careful how we spend capital because there is not a lot of it. We need a fast payback on all projects. Our board audits us and holds us to what we say we are going to do."

Projects included a new reel and waxer for PM 1; the conversion of one of the mill's two power boilers to burn No. 6 fuel oil (giving the mill a hedge on natural gas); a new broke pulping system allowing the mill to pump broke to any of the four paper machines; and, 25 separate energy projects that yielded more than $1.9 million in savings.

By mid-2009, Dunn will have installed a new Yankee dryer and hood on PM 1, which will provide a 40%-plus speed increase.

In one of its biggest projects to date, Dunn Paper revamped PM 3, which can be considered the mill's flagship machine. It installed ABB's process and quality control system (QCS), the Industrial^{IT} 800xA, Figure 1. It replaced a 10-year old Impact QCS. An ABB AC800M controller and some S800 I/O replaced an old Bailey distributed control system. There was enough S800 I/O in the system so that ABB was able to re-engineer a comm. card that "talked" to the IR dryer. The result was the elimination of some obsolete hardware while making use of some special engineering talents on site.

The mill has realized numerous benefits from this system included a 12% decrease in defects leading to a reduction in complaints of more than 50%. It helped the mill increase PM 3's speed by a couple of percentage points (or 1.5-2 tons/day). Overall, it helped lead to a 10% reduction in grade change time on PM 3. This is equivalent to a savings of $200-250,000/yr. Earnshaw points out that the ABB project was so important because of the number of grades produced. The machine may make three grade changes in a day. "That's why we invested in that technology."

Dunn Paper's extensive upgrade of PM 3 includes the installation of an ABB process and quality control system

Speaking of the company as a whole, Earnshaw says management is "moderately" satisfied with the progress shown since 2003. "The industry has been consolidating, but it is still not at a point where businesses can make the return that shareholders want. That's the story of the industry and, in a micro-state, that's Dunn Paper."

A rebuild of the mill's original machine, PM 1, could be the next step for Dunn Paper. But, as Earnshaw explains, "We are very careful with our limited capital dollars so everything we do must be assured of its payback before moving ahead."

The mill would like to increase PM 1's capacity by 40%, but this would be a $5 million project, "a big deal for us," notes Earnshaw. The project is being put together but no start date has been announced.

The mill's main market is North America although it has added significant business in high-growth South American countries in the last 18 months. Almost 90% of production moves by truck. Earnshaw explains that most customers buy 40,000 lb lots of different grades, something that would be unheard of for a large commodity-producing mill. "We can offer these services. That's what being a boutique paper mill does."

Best beer labels

As well as the new products that Dunn is introducing, Earnshaw says customers are looking for consistent quality products that convert efficiently. "For example, we are recognized throughout the world to have one of the best converting beer label papers. Some of our wrap papers are being converted by customers at the highest speeds in the world."

More and more, tailor-made paper is being demanded, which goes hand in hand with personal service. Dunn must make a paper that fits a customer's process. Finally, in the business today, customers want the functions of paper to be carried out at lighter

weights. "Because of our MG capability, we make very low weight base papers, both coated and uncoated," says Earnshaw.

The company will continue to focus on making high quality products designed for markets that are 20,000 tons/yr or less. "That's what we can compete in," Earnshaw stresses.

Its customer base is strong. More than half have been doing business with Dunn Paper and its predecessors for more than 20 years. And, it is the sole source of specific grades to 21 of its top 50 customers.

Continued investment in the four paper machines to meet customer needs while increasing the mill's capabilities is also an important objective for the future. This goes hand in hand with ongoing product development as well as the introduction of new products. "That's what we live on," Earnshaw adds. "That's the fundamental difference between us and the big guys; they want to reduce costs."

At the same time, he points out that the company needs to recognize when a product has had its day. All things change. For example, if beer labels are replaced by film labels or printing directly on the bottle, then Dunn must be able to move on to other things. That's why product development is so important. "We must be willing to walk away if necessary."

Finally, Earnshaw promises that Dunn will continue to invest in its human resources, to preserve a skilled and motivated workforce.

At the opening of the mill, Theodore Dunn was quoted in the September 9, 1924, edition of *The Paper Mill & World Pulp News*: "The policy of the company will be to make quality the first and foremost consideration." Words that 84 years later the employees of Dunn Paper are still striving to uphold. Perhaps this is why Earnshaw can say: "We are overbooked." P&P

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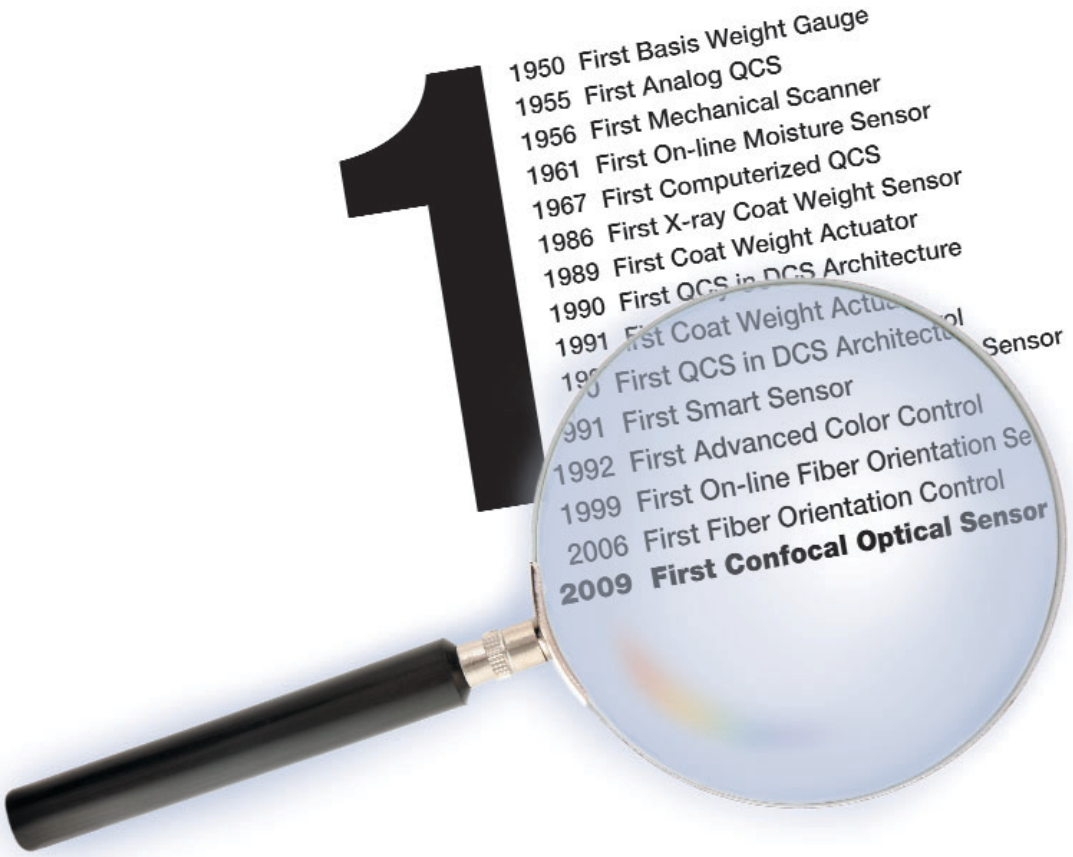

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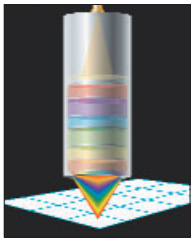

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